**EDTL 7100: Instructional Design Aaron Stalsworth**

**Rationale**

The United States public school institutions have been on a gradual decline in performance over the past few decades. A ranking of the 36 most industrialized nations on the planet gives the US system an ‘average’ grade compared to other countries and individually ranks 14th in reading skills, 17th in the sciences, and a lowly 25th rank in mathematics as of 2010 (Armario, 2010). Another source reports that while the US was ranked 15th in mathematics in 1998 and the same article points at the US physics ranking being last among the studied countries (Azimov, 1998). If we take a look at those numbers a little more closely, we can see that while the US seemingly made improvements in the sciences over the course of a decade, the drop in mathematics shows a shift of focus in education that was affected by policies of the Bush era. What really changed in schools over that period which could cause such a dramatic decline in mathematics whereas it looks like other subjects seem to be improving? The No Child Left Behind instilling standardized testing of mathematics seems to be a common complaint among teachers during the forum discussions of this and other courses, but we may have to wait another 10 years to see once again on how the program impacts the US rankings in Education. One question that should be asked is ‘what would happen if we just taught the kids and didn’t test?’

The Australian government has taken a quite different approach toward education and has removed the standardized testing element from grades K-11. The main goal of their curricular approach is to build an adaptable skill set within each student rather than create an atmosphere of test taking which inhibits learning in some students. Overall success from this approach is evident from the countries ranking against other industrialized nations worldwide showing that Australia is ranked 6th in reading skills, 9th in mathematics, and 7th in Science (Shepherd, 2010). The following instructional design outlines an outcome based course following the Western Australian Curriculum Council (WACC) methodology in Computer Science for grade 11 students in which there are no testing requirements during the course of the school year. The focus is centered on skill development that will be the foundation for the student’s grade 12 year in which they will have standardized tests per subject based on all skills learned over the course of high school and not just centered on a single period during the school year.

There is no particular unit breakdown within this design as it encompasses 8 task based lessons in which the teacher must guide students in lab intensive exercises lasting the entire school year. Generally there are 4 tasks assigned per semester that take anywhere between 2-4 weeks of class time and does include a teacher guided instruction component if needed. I have rearranged the lessons into a more logical sequence and each lesson is complete with the lesson plan, student guide, side notes, and rubrics which are used to grade individual components of each lesson corresponding to intended outcomes.

Different instructional models from our textbook relate to tasks individually and not meant to encompass the entire span of course work. I don’t see any of them singly applied though, but elements of different approaches are evident. Task 1 would start with the Concept Attainment model for instruction as the class would need to learn computer components and various options over the course of the instruction, then switch to a more Group Investigation Model for the task of building multiple computer designs even though they are to work individually on their own task. Task 2 would start with a more Classroom Meeting Model in discussions about computer ethics to help them shape a proper Western perspective since Vietnam has no copyright law enforcement and then back to an Investigative approach for individualized solutions. Task 3 covers a more Inquiry Training Model blended with an Investigative approach as each student will need to expand on the basic concepts discussed in class and come up with alternatives that are available only in Vietnam. Task 4 is very similar to Task 1 in that it requires a Concept Attainment approach that switches to an Investigative approach except this time they are working with network building instead of computers. Task 5 and Task 6 both have been built for students to choose how they are instructed similar to a Self Directed Learning Model. The teacher gives all of the resources needed for the project to the students in advance and then allows the students to follow the teacher guided instruction that will take on a slower pace or to self study over the course of the tasks. The main benefit is that more individualized instruction can be given for those unsure of their computer abilities or have lower English skill sets that need more attention for success with the tasks. Students may switch between either lesson approach at will and usually after 4 days of teacher guided instruction is when all students are working at their own pace. Task 7 leans a little toward the Inductive Model as the students are writing a ‘how to guide’ that will provide step by step instructions for a non computer user to follow. The procedures are related in sequence and will help the students better understand the topic as they are choosing the resources that are to be used by the third party and have to articulate their choices well. Task 8 follows the Inductive Model more closely as the content is relational databases and excessive testing of the database over the course of the task will show them if their hypothetical designs are built correctly or not.

# Armario, Christine, 2010. *'Wake-up call': U.S. students trail global leaders.* Retrieved from

[http://www.msnbc.msn.com/id/40544897/ns/us\_news-life/#.TrPZm3LN1s4](http://www.msnbc.msn.com/id/40544897/ns/us_news-life/%23.TrPZm3LN1s4) on Nov. 1, 2011.

# Azimov, Nanette, 1998. *U.S. Teens Rank Low in World Tests / High school students dismal in math, science.* Retrieved from <http://articles.sfgate.com/1998-02-25/news/17713861_1_math-and-science-third-international-mathematics-crisis-in-american-education> on Nov. 1, 2011.

# Shepherd, Jessica, 2010. World education rankings: which country does best at reading, maths and science? Retrieved from <http://www.guardian.co.uk/news/datablog/2010/dec/07/world-education-rankings-maths-science-reading> on Nov 1, 2011.

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**Unit Outcomes from the Western Australian Curriculum Council\***\*The following outcomes are taken directly from the Western Australian Curriculum Council Standards Curriculum Framework for Computer Science coursework and the basis for which the following course tasks are built. Each task has been built to adhere to the WACC standards and has been accepted for accreditation from the WACC governing body for grade 11 credits toward graduation in Australia. For further referencing, these standards can be found at [http://www.curriculum.wa.edu.au/internet/\_Documents/CSC\_public/Computer\_Science\_syllabus\_Reaccredited\_August\_2011\_for\_2012.doc](http://www.curriculum.wa.edu.au/internet/_Documents/CSC_public/Computer_Science_syllabus_Reaccredited_August_2011_for_2012.doc%20).\*

**Outcome 1: Technology Process  
Students apply a technology process to develop computer-based systems.\***

* Students apply a sequence of steps to generate a plan, perform specified production processes and evaluate the final solution.
* Students generate a design, organize and implement production processes, within given constraints, assessing how well the design and solution meet the design requirements.
* Students include options in the design proposals, organize and implement production processes to own specifications and use given testing criteria to assess the effectiveness of the solution and production processes.
* Students justify options in the design proposals, organize, implement and adjust detailed production processes and use a range of testing criteria to monitor and evaluate the effectiveness of the designs, solutions and processes.
* Students devise detailed design and production proposals that show how ideas and strategies are developed; collaborate, monitor and adjust the production process and implement an ongoing evaluation process, presenting conclusions.
* Students analyze implications and benefits to devise detailed proposals that justify the merits of different options; monitor, adjust, negotiate and document production processes; apply qualitative and quantitative testing in the ongoing evaluation and monitoring process; and consider current and future impacts.

## Outcome 2: Knowledge and understanding of computer-based systems

**Students understand the design, application and interactions of hardware and software in computer-based systems.\***

* Students understand that computer-based systems are composed of elements that interact for a particular purpose.
* Students understand that the elements in computer-based systems interact and can be controlled.
* Students understand the diversity of elements, their internal and external interactions and how they can be controlled and maintained.
* Students understand the function of computer-based system components, their interactions to control and maintain systems and that these technologies are evolving.
* Students understand the principles, structures, logic, organisation and control of components in computer-based systems and how these technologies are continually evolving to meet changing needs.
* Students understand the theories underpinning the function, interaction and maintenance of complex computer-based systems and components; and the constraints and possibilities resulting from the dynamic environment in which these complex technologies evolve.

**Outcome 3: Skills for computer-based systems  
Students apply skills to maintain, adapt, or develop computer-based systems.\***

* Students use skills to apply provided conventions and follow specified procedures.
* Students work within given constraints applying skills to solve simple problems, using a limited set of conventions, resources and procedures.
* Students apply skills to solve predictable challenges, selecting and using conventions, resources and procedures.
* Students apply skills that partition a problem, consider alternatives that incorporate appropriate industry conventions, standards and procedures.
* Students apply high-level skills that justify alternatives, and demonstrate flexibility when refining and documenting solutions.
* Students apply complex skills that take account of the diversity of standards and the complexity and dynamic nature of computer-based systems.

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## Outcome 4: Computer-based systems in society Students understand the interrelations between the development and use of computer-based systems, the individual and society.\*

* Students understand that developers and users participate in the design and development of computer-based systems and that this technology is used in communities.
* Students understand that developers and users can influence the design and development of computer-based systems and that this technology has influenced communities.
* Students understand how the design and development of computer-based systems is influenced by developers and users and how this technology impacts on individuals and communities.
* Students understand how developers and users interact with the design, development and use of computer-based systems and how society and these computer-based systems interact.
* Students understand that the relationships between society, developers, users and the design and development of computer-based systems are based on many interconnected factors.
* Students understand the complexity of the dynamic relationships between society, developers and users and the design, development and use of computer-based systems.

**Pre Assessment**

The only pre assessment done for the students prior to the course is simply to gauge their overall level of academic and spoken English which is necessary to be successful at Saigon International College. That pre assessment is conducted by the administrative staff of the school and not conducted by teachers. The students are tracked into groups based on their functional level of English skills and teachers are to alter the format of instructional approaches to match the level of English of the incoming class. As this is a Computer Science course for grade 11 students, the only skills necessary for each task is a competent level of English and functional use of Microsoft Word which is used heavily in grade 10 and other courses.

The entire course is designed as a foundation course for entry into grade 12 where they will have to take a WACE exam at the end of the year to graduate in 4 subjects at the school. Computer Science’s WACE exam is optional to the students as one of the 4 as English and Mathematics are the only 2 required standardized tests that each student must take. Each instructional class before each task is assigned focuses on enhancement of the English terminology along with the functional applications that are addressed within each task. As such, no pre assessment is needed in regards to the computers as the focus of the outcomes is skill building and not testable memorization and response in format. All classes though are required to complete the material content and skill building task work over the course of the year with satisfactory marks (C grade or better) before they can progress to grade 12 and the intensive level of study geared towards the WACE examinations.

**Post Assessment**

Post assessment of each task is individually broken down by marks at the end of lesson as shown in the rubric provided. Each criteria is described pertaining to an outcome and is weighted according to the importance of skill development shown during the task. The first 4 tasks make up the first semester grade and the last 4 tasks make up the second semester grade equally at 25% a piece. The final grade of the course is based on weighting the tasks by outcomes covered therefore do not represent equal percentages for grading purposes at the end; but since the Australian grading system has a C grade at 50%, most students perform well enough to pass unless their English level remains at a low level over the course of the year.

**Lesson Plans: Task Based Instruction**

# TASK 1: Home computer support (45 marks)

You have been asked by your uncle to provide advice on what computer system he should purchase. His particular interest is in **collecting, storing and viewing music video clips**. Your uncle would like to buy the system as soon as possible. He wants you to provide him with details about two systems that would suit his needs. You can use web, newspaper advertisements, magazines, store visits, and advertising brochures to investigate and collect information about computer systems and their prices.

**Computer Science Grade 11**

**TYPE:** Investigation

**Time Allotment**: 2 Weeks – 1 for first phase, 1 for second phase

**OUTCOMES:** Outcome 1: Technology process and Outcome 2: Knowledge and understanding of computer-based systems

**CONTENT:** Components; Design, development and management: systems; Tools

**What you need to do:**

1. **Time estimate** Before starting your investigation, estimate how long you think it will take you to provide the information required.
2. **Progress reports** [5 marks] Keep records of how you progress with this task and email/submit daily progress reports to your teacher if you have any questions. It is important that you show initial concepts and changes made during the process.
3. **Check of resources** [3 marks] During your investigation include a brief explanation of how you checked the validity of your sources (how you used many different sources and support your information about the source).
4. **Investigation** [20 marks] Using the web, newspaper advertisements, magazines, store visits, and advertising brochures investigate what computer system would be most appropriate for your uncle’s needs and provide the specifications for **two suitable systems**. Your investigation should:

* consider the most suitable components including storage requirements, processor, operating system, and video card
* take into account the cost of the system
* provide reasons for your choices.

1. **Format** [5 marks] Your findings should be written with MS Word. Use proper English writing structure and the format for text should be size 10 and line spacing should be 1 ½ spaces for the entire project. Use spell check and please put your name and class at the top of your project.
2. **Evidence** [5 marks] Present evidence of the investigative process you undertook to complete this task. This could include the notes you made, copies of any paper-based resources you collected, and references to any other resources you have used.
3. **Evaluation** [2 marks] At the end of your investigation, comment on the accuracy of your time estimate.
4. **Diagram** [5 marks] Draw a diagram of the components in one of your system proposals using the headings of input, processing, storage and output. The diagram may be hand drawn.

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| **What needs to be submitted for assessment** | **Due** | **Actual date** |
| * Items 1,2,3,4 — Research and notes checked in class. You must have a lot for some credit. | End of First  Week |  |
| * Session reports, advert pics, research collected digitally must be on the server in your student folder named Task 1 for collection by teacher | End of Second Week |  |
| * All items 1-8 must be turned into the teacher that are not digital to be included in your final grade | End of Second  Week |  |

**Task 1 MARKING KEY – How your assignment will be graded**

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| **Item** | **Description** | **Possible Mark** | **Allocated Mark** |
| Progress reports: [5] | * All progress reports submitted * Four progress reports submitted | 2 1 |  |
| * Provides clear indications of development and change * Provides a good sense of development and change * Provides only brief sense of change or development | 3  2  1 |  |
| Check of resources: [3] | * Details relevance of qualities of resources * Details qualities of resources * Provides record of resources | 3  2  1 |  |
| Investigation Findings: [20] | * Considers suitability of 2 systems (including components), describes cost of both and provides reasons for choice * Considers suitability of 1 system (including components), describes cost and provides reasons for choice **OR** considers 2 systems and partially describes components, costs and reasons * Selects 2 systems with minimal or no justification * Selects 1 system with minimal or no justification | 16–20    10–15    5–9  1–4 |  |
| Format: [5] | * Facilitates comparison of the two solutions * Consistent, but not as easy to compare two systems * Standards applied but used inconsistently | 4–5  2–3  1 |  |
| Evidence of investigative process: [5] | * Comprehensive set of notes provided, copies of any paper-based resources collected, and references to any other resources provided * Some notes, paper-based resources and references provided * Copies of paper-based resources provided | 4–5  2–3  1 |  |
| Evaluation: [2] | * Provides explanation of accuracy or gives reasons for variation * Provides brief comment on accuracy of time estimate | 2  1 |  |
| Diagram: [5] | * Draws correctly labelled diagram with all components * Draws a partially labelled diagram | 5  1–4 |  |

Total possible marks: 45

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# TASK 2: Home computer support (35 marks)

**Computer Science Grade 11  
  
Type:** Investigation

**Time allocation:** 1 week (best assigned on a Friday start for homework)

**Outcomes**: Outcome 1: Technology process, Outcome 2: Knowledge and understanding of computer-based systems, Outcome 4: Computer Based Systems in Society  
  
**What you need to do:** You need to write a research report based on workplace ethics between a company and a customer. You are the company, and I will take the place of a customer for this task. The paper needs both your working opinions and also research into two separate topics relating to computers in society today. Below are the guidelines and grading scales that will be used to mark your papers. We will have class time available for you to work, but also this project needs to be completed at home to make sure that you can complete the entire project by (Insert Due Date here). If you have any questions during your work at home, please email me at (Insert your Email here) and I will try to answer your questions as soon as I can. Your paper will consist of the following:

1. **Developer attitudes and values** [10 marks] Your attitudes and values influence the way you approach developing a solution for a customer. Again, these discussions are about how you would approach a customer. Customer focus is what you think are the most important items in dealing with the customer. Interpersonal skills are the skills that help you and the customer come to some common understanding. Work ethic is your beliefs on how a project gets completed such as getting finished on time or not, quality of service, how you would handle problems when they happen, and other issues that you could think of that are not already listed. Explain these influences under the headings:

* customer focus
* interpersonal skills
* work ethic.

1. **Draft of answer for checking** Submit a draft answer to by the next class to see how well you understand each of the points in part 1. Include a list of web pages and other references used if you use them to better understand the topics.
2. **Legal, societal and ethical impacts** [5 marks] Hacking into computers is illegal. Visit the site <http://www.ilaw.com.au/public/> and **explain in your own** words the law regarding hacking.
3. **User attitudes and values** You are interested in gaining a better understanding of the risks from hacking and then ensuring your customer’s computer is protected.
4. Research and List 5 product names of software that has been developed to protect computers from hackers. [5 marks]
5. Research and Explain what internet hackers are trying to achieve by accessing other people’s computer systems and the problems they cause. [10 marks]
6. **References** [5 marks] Make sure you include a list of the references you used.
7. In addition to hacking, **choose one more topic** from <http://www.ilaw.com.au/public/> as listed above and also write a summary and do some research into that topic to show some facts for your second summary. Also, list your references.

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| **What needs to be submitted for assessment** | **Due** | **Actual date** |
| * Draft answer to question 1 for checking, including list of web pages and other references used | Beginning of Class on Monday |  |
| * Completed answers to questions 1, 3 and 4 in a word-processed document | End of the Week |  |

**Task 2 MARKING KEY**

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| **Item** | **Description** | **Possible Mark** | **Allocated Mark** |
| Developer attitudes and values: [10] | Explains the range of developer attitudes and values: customer focus, interpersonal skills and work ethic.   * All 3 categories addressed with clear explanation * All 3 categories addressed with partial explanation * 1 or 2 categories addressed with some explanation | 7–10  3–6  1–2 |  |
| Legal, societal and ethical impacts: [5] | Explains the importance of the legal issues relating to hacking and its impact.   * Response provided with clear explanation * Response provided with partial explanation * Response provided with no explanation | 4–5 2–3  1 |  |
| User attitudes a):[5] | Provides 5 useful anti-hacking programs | 1–5 |  |
| User attitudes/values b):[10] | Explains what internet hackers are trying to achieve by accessing other people’s computer systems and the problems they cause.   * Clearly explains the hacker’s intentions and the resultant problems * Partially explains the hacker’s intentions and the resultant problems * Limited description of the hacker’s intentions and/or problems caused | 7–10  3–6  1–2 |  |
| References: [5] | * Provides a list and uses correct referencing conventions * Provides a list without correct referencing conventions * Inadequate referencing used | 4–5  2–3  1 |  |
|  |  | **Total/ 35** |  |

**TASK 3: Web connections (60 marks)**

You are keen to provide information to your friends on movies, and TV programs that may be of interest to them. You have decided that the most effective way to present the information would be by creating a web site and keeping the site updated with relevant information. Your friends can then easily access the information over the internet.

**Computer Science Grade 11  
  
Type:** Response

**Time allocation:** 2 weeks

**Outcomes**: Outcome 1: Technology process, Outcome 2: Knowledge and understanding of computer-based systems, Outcome 3: Skills for Computer Based Systems , Outcome 4: Computer Based Systems in Society

**What you need to do**

1. Connecting to the internet *[29 marks]*
   1. There are a range of resources and possibilities available for making a connection to the Internet.

Provide a general explanation of each of the following:

* + 1. hardware (other than the computer)
    2. providers e.g. ISP, phone company
    3. options for different types of access.
  1. Explain what software alternatives are available to create the website on your computer? Include advantages and disadvantages.
  2. Based on your explanation of alternatives in question 1a and 1b, create a specification, including two important internet protocols for computer-based systems, you would use to publish the website. Include an explanation of the important factors you considered when making decisions about the most appropriate components for your system.

1. Uploading a web site *[16 marks]*

Explain where your website is stored when it is on the internet. You should mention the services provided by an ISP in your answer. Explain the process you would use for uploading and updating your web site on the internet.

**3. Options for building a website** *[15 marks]*

There are many ways to have your own website built for the internet. Explain the following styles and also give examples of each that apply with advantages and disadvantages for each one.

(a) CMS - Content Management Systems (Name 3 different options)

(b) Hand coding using different web languages (Name 3 different options)

(c) Home Desktop Web Design Software (Name 3 different options)

(d) Online Hosted Web Personal Websites (Name 3 different options)

(e) Professional Web Building Services (Name 3 different options)

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| **What needs to be submitted for assessment** | **Due** | **Actual date** |
| * Notes and drafts | End of Second Week |  |
| * MSWord processed answers to questions 1, 2, and 3 |

* **All work must be submitted on a Microsoft Word Document.**
* **All work must be written in your own English. Any segments of this task which are copied and pasted from the Internet will be given 0 marks for that section.**
* **A list of reference links to the web information that you use must appear in the document near the section that they are discussed. Failure to provide references inside of your document will result in -10 marks for the entire task**
* **All papers must be submitted on your Z:/ drive and collected by (Insert Due Date Here) or earlier. Any work submitted after (Due Date) without permission from the teacher will result in -20 marks for the entire task.**
* **Anyone absent on (Due Date) will still need to hand in their task through another student or by sending it in an email. My email is (Insert your email)**
* **If you have any questions about the task during the next two weeks, feel free to email me anytime and I will be happy to help when I have time to write back.**

**Task 3 Marking key**

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| **Item** | **Description** | **Possible Mark** | **Allocated Mark** |
| Connection: [29] | Provide a general explanation of:   * hardware (other than the computer) * providers e.g. ISP, phone company * options for different types of access   *For each of above*  *detail explanation with justification and clarity = 5 detailed explanation with justification = 4 explanation = 3 limited explanation= 2 Incomplete explanation = 1*  Explanation of the   * software alternatives available to create the web site on your computer * advantages and disadvantages   *For each of above*  *detailed explanation with justification = 3; suitable explanation = 2;  limited or incomplete explanation = 1*  Statement of specification including:   * two important internet protocols for computer-based systems   *(suitable explanation = 2; limited = 1)*   * explanation of the important factors relating to the appropriate components for your system   *detailed explanation with justification = 4; suitable explanation = 3;  limited but correct explanation= 2 Incomplete explanation = 1* | 0–5 0–5 0–5  0–3  0–3  0-2 0-2  0–4 |  |
| Uploading  a web site: [16] | * explain where your web site is stored on the internet * explain the services provided by ISPs * explain the process for uploading the site to the web site * explain the process of updating your web site on the internet   *detailed explanation with justification = 4;*  *suitable explanation = 3;*  *limited but correct explanation= 2*  *Incomplete explanation = 1* | 0–4  0–4  0–4  0–4 |  |
| Options for  Building a  Website: [15] | * Explain 3 CMS systems with advantages/disadvantages * Explain 3 languages with advantages/disadvantages * Explain 3 Web Design software options with advantages/disadvantages * Explain 3 Online hosted web options with advantages/disadvantages * Explain 3 Professional Web building services with advantages/disadvantages | 0-3  0-3  0-3  0-3   0-3 |  |
|  |  | **Total/ 60** |  |

# TASK 4: Home entertainment computer-based system (50 marks)

You really want to have the latest home entertainment equipment in your house. You would like to connect a computer to the plasma television located in your home theatre room and you would also like to access the computer in your office from the home theatre room. In addition, your theatre should be set with a 5.1 sound system and your office should be able to print documents sent from anywhere on your network. The living room should be wireless ready to allow for others in your house to access the network. You will need to investigate possible alternatives for your computer-based system.

**Computer Science Grade 11  
  
Type:** Investigation andResponse

**Time allocation:** 2 weeks

**Outcomes**: Outcome 1: Technology process, Outcome 2: Knowledge and understanding of computer-based systems, Outcome 3: Skills for Computer Based Systems, Outcome 4: Computer Based Systems in Society

**What you need to do**

1. **Evidence**

Keep detailed daily records of your work on this project to show the steps completed towards the finish. It is important that you show initial concepts and changes made during the process. Explain each entry in detail. *[5 marks]*

1. **Investigation**

Possible alternatives for the computer-based system:

1. Investigate how you could make the connection between computers in different rooms. Include an explanation of the different alternatives of wireless and cable connections, product recommendations and prices. Different options must be discussed and you also need to explain the difference between each option. *[15 Marks]*
2. Investigate the use of Windows XP Media Centre as an alternative operating system to Windows XP starting at <http://www.microsoft.com/windowsxp/mediacenter/default.mspx>. Explain how this would be used as part of the home entertainment system in your house. Find additional software that is available to provide the same functions as Windows Media Centre and explain how they would improve your network functions.

*[15 marks]*

1. **Network plan**

Draw simple plans of your house (or a house you would like to have) with separate diagrams for the office, living room, home theatre room, and the entire house. Show the location of the main pieces of equipment needed to create a home entertainment network system. Include appropriate labeling and a description of the system you have chosen. Label everything that affects the network.

*[10 marks]*

1. **Evaluation**

Once completed, explain how you would evaluate the effectiveness of your home entertainment PCs and network solution.

*[5 marks]*

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| **What needs to be submitted for assessment** | **Due** | **Actual date** |
| * Evidence: session progress reports | End of 2 Weeks |  |
| * Investigation presented as a word processed document | End of 2 Weeks |  |
| * Network plan | End of 2 Weeks |  |
| * Evaluation | End of 2 Weeks |  |

**Things to keep in mind…**

1. All work completed MUST BE written in your own words. If you copy the entire project from the internet, you will be given a 0 marks grade.
2. Your network is not only the computer equipment. It will also need cables, routers, splitters, switches, modems, software, and a lot more various equipment that all depends on how you decide to build your network.
3. All reference links must be present inside your task document to allow for someone to find your research on the internet.
4. Daily progress reports are your journal entries to show how you got from step 1 to the final step in your task. Please keep full details listed or you will lose credit.
5. Diagrams of your network must include each small area of your network and a full diagram of the entire network.
6. Follow your marks checklist to see if there is anything that you might be missing before you turn it in. Some students have not done so in the past and have lost many easy points.
7. All documents must be submitted in your class folder by (Insert Due Date). Please label the folder with Task 5\_Name (Name is your name) so it is easy to find. If you are going to be absent, you need to email it to me for full credit. If you turn in the task after (Due Date), you will lose 20 marks.
8. If you have any questions feel free to email me at (Insert your Email here) anytime during the task.

**Task 4 Marking Key**

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| **Item** | **Description** | **Possible Mark** | **Allocated Mark** |
| Evidence: [5] | * records maintained of how you have approached this investigation & emails submitted of daily progress reports to your teacher   *All emails submitted detailed and complete = 2 Some emails submitted = 1*   * evidence of initial concepts and changes made during the development of the task   *detailed evidence of initial concepts and changes = 3 evidence of initial concepts and changes = 2 limited evidence of incomplete = 1* | 2  3 |  |
| Investigation:  [a] [15]  [b] [15] | **Possible alternatives:**   * investigate how you could make the connection between computers in different rooms   **Possible alternatives:**   * explain the different alternatives of: * wireless, and * cable   *For each (suitable explanation = 2; limited = 1)*  **Possible alternatives:**   * product recommendations * prices   *For each suitable explanation with justification = 3 suitable explanation = 2;  limited = 1*  **Investigate:**   * Windows XP Media Centre as an alternative operating system to Windows XP * explain how this would be used as part of the home entertainment system in your house * check alternative software that is available to provide the same functions as Windows Media Centre.   *For each*  *detail with justification and initiative of response = 5 detailed investigation with justification = 4; investigation meets minimum requirements = 3;  limited response= 2 incomplete response = 1* | 1–5  2  2  1–3  1–3  1–5  1–5  1–5 |  |
| Network plan: [10] | * a simple plan of your house (or a house you would like to have!) * include an office, living room, and home theatre * show the location of the main pieces of equipment needed to create a home entertainment network system * include appropriate labeling * describe the system you have chosen   *For each (suitable explanation = 2; limited = 1)* | 2  2  2  2  2 |  |
| Evaluation: [5] | Explain:   * how you would evaluate the effectiveness of your home entertainment PCs, and   *suitable explanation w/ justification = 3 suitable explanation = 2 limited = 1*   * network solution   *(suitable explanation = 2; limited = 1)* | 3    2 |  |
|  |  | **Total /50** |  |

\*Please note that this task was rewritten during my Differentiated Instruction course and I found it to be a much more complete lesson plan that the one I was using before therefore the change of format from previous lesson plans\*

**Task 5** **HTML Website Programming Languages**

**Computer Science Grade 11  
  
Type: Production/Practical**

**Time allocation:** 1 week

**Outcomes**: Outcome 1: Technology process, Outcome 2: Knowledge and understanding of computer-based systems, Outcome 3: Skills for Computer Based Systems

1. **Standards/KUDos:**

|  |
| --- |
| Students apply a number of HTML code strategies demonstrating an understanding in HTML, Web Page formatting, and Web Display concepts.  Students will develop various basic Web building skills through a guided learning process and have the option to self study at their own pace if they choose.  Through this process they become aware of the HTML language that is the basis for most web pages and be able to identify the code through use of tags.  Students develop the vocabulary to enhance their ability to actively discuss the topic and a basic understanding of the Web building process.  Students recognize the need to structure a page with tables to allow all browsers and screen displays to read the page without breaking.  *Know*:   * Web Design Hypertext Markup Language * Table formatting and nested structures * Navigation structure * Basic tags used for Web Design * Design format to allow for any browser to read * Definitions of : HTML, tag, link, hyperlink, table, element, attribute, image, form, frame, formatting, heading, list, style, font, nested structure, browser, text editor, theme, template (advanced)   *Understand*:   * Most websites are created at the coding level using HTML * Tags are used to set or modify web page contents * Setting hyperlinks to navigate to specific content in the site or on the internet * Adjusting the size of an image   *Be Able to Do*:   * Indentify HTML code and tags used as the building blocks of a website * Show how a table structure is created, modified, and displayed within a browser * Set an image into a table and hyperlink it to other content on the web (ex. build an advertisement) * Describe and show a foundation ability to read HTML code tags * Describe why table formatting is important and how a page might ‘break’ using a different display * Construct a simple 1 page website using only a text editor (notepad) |

1. **Pre-assessment/Formative Assessment Notes:**

|  |
| --- |
| Pre-assessment will look for a student’s ability to understand the English required to build a web page and also determine if some student’s have previously learned skills in this area. Students will be given the option to work at their own speed during the first week of HTML coding lessons as the [www.w3schools.com](http://www.w3schools.com) website is set up to guide the students in a step by step fashion. Students who feel intimidated by the task or have a lower level of English that needs to be addressed can follow the teacher through the web school to address issues when they arise.  The lessons focus on the structures and the content will not affect the grade when a formal assessment is taken later in the unit. Content of each student’s web page is completely up to the student to promote increased interest throughout the unit. Peer involvement is also encouraged as long as each student shows individual work.  Formative assessments will focus on simple progressions of skill sets in web building and each new skill set will be introduced when everyone has successfully shown the basic skill at least once. No grading assessments will be issued the first week as skill set building is the primary focus.  Informal assessments during week 1 are based on structures and as follows:   1. Set up a table that is flexible and put a table inside a table (nested) 2. Place some simple text into a table cell and change the size, color, and font 3. Place an image into a table cell and change its dimensions 4. Select some text on the page and hyperlink it to other content (navigation) 5. Select an image on the page and hyperlink it to other content (advertisement)   A short knowledge quiz on HTML tags will be issued to make sure that everyone can identify the basic tags needed (\*peer graded for skill assessment purposes only unless the instructor wishes to use this grade for task 6 as it builds on this task\*). |

1. **Hook:**

|  |
| --- |
| Students are shown how open a simple text editor (notepad) and given the basic tags needed from the teacher to input. They are asked to add any text content they wish between a set of body tags (<body> student text goes here </body>). Students now are asked to save the file as Name\_of\_Student.html. They will then open the file with Internet Explorer or Firefox showing them that they all have just created their first official web page within the first 5 minutes of class. |

**4**. **Content Delivery** (WHAT they will learn)

\_\_X\_ same resources (for tags and structure) \_\_X\_ same goal for all (skill competency with basic tags)

\_\_X\_ different resources (for content)\* \_\_X\_ advanced goal for some (option: advanced web class)\*

\_\_X\_ modified goal for some (optional self paced learning available at any point during the lesson)\*

**Notes:**

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| --- |
| Tell the students that all content is decided by student interest and the lesson will focus on basic tag structures. All students must complete the basic HTML web class and show skill competency at least once during class lab time. Now give all students the option self study through the use of the <http://www.w3schools.com/html/default.asp> web class or to follow the teacher through guided lessons for structure skills related to web design. Students who choose to do so can also attend the advanced HTML web class, but is optional and will be self study with questions addressed when the teacher is free, after class, or by email. Choice of content displayed is completely up to the student’s interest. |

**5. Direct Instruction/Modeling** (HOW they will learn it)

\_\_\_ single strategy that engages all

\_\_X\_ more than one learning preference (based on Multiple Intelligence)\*

\_\_\_ more than one modality (e.g., auditory, visual, kinesthetic)\*

**Notes:**

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| --- |
| Students may address their content as they see fit as long as the basic structures learned in class are used. They are encouraged to engage in peer review of each other’s work to help enhance their skills if they see something they like contained within another students page. Students who feel that their English skills are low or the topic is intimidating can follow along with the teacher guided lessons which will address each tag set individually and will build on the previously learned tags. At any time a student feels confident with using the web school and understands the basic premise of the tag structures, they may elect to leave the teacher guided group and engage in self paced study. The reverse also applies if a student wishes to rejoin the teacher guided lesson, they may do so for review or clarification concerning a specific structure they found to be difficult. At the end of the guided lesson, all students will have completed an entire web page with the correct structures and any free time left in the week will be open lab in class to refine their skills. The teacher then will act as a consultant addressing individual student questions on the board for all students to review if they choose. |

**6. Application Activities** (HOW they will learn it)

\_\_\_ same for all

\_\_X\_ tier by learning preference (based on Multiple Intelligences)\*

\_\_X\_ tier by readiness\*

\_\_\_ tier by challenge/complexity\*

**Notes:**

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| --- |
| Basic tier:   * Follow the teacher guided lessons which focus on HTML coding structures and understanding the English associated. * Build a basic web page using the learned tag structures and display them at least 1 time on the page. * Insert text onto the document and change its size, color, and font. * Hyperlink simple text to other content on the web. (navigation) * Insert an image within the page and modify it to 432x60, then hyperlink it to other content. (advertisement) * Change the background color for the page. (theme) * Set a simple table and modify its dimensions. * Place a table within the table (table nesting).   Advanced tier:   * Self paced study of the basic HTML web class provided and complete all aspects required by the basic tier. * Optional advanced HTML web class available. * Use a tabled format for the entire web page to give the page display some structure. * Build more than 1 page and link them together. * Understand why it is best to set a fully tabled page and theme first before adding content (building a template), then copy that template and rename it to build future pages without the need of starting a new page from scratch.   All Students:   * Content displayed is dependent on student interest. |

**7. Independent Application** (How they will DEMONSTRATE their learning)

\_\_X\_ individual work \_\_X\_ tier by readiness\*

\_\_X\_ with a partner (allowed) \_\_\_ tier by challenge/complexity\*

\_\_X\_ in a small group (based on Multiple Intelligences - allowed)\* \_\_X\_ student choice (based on interest)\*

**Notes:**

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| --- |
| Students are tiered by readiness based on their overall confidence in the subject and understanding of the English used in the web class online. The tiering is not decided upon by the teacher, but by student choice and students may choose which pace best suits them at any point during the guided lessons in class.  Students will build a simple web page using only a text editor (notepad) and basic tag structures learned in class. The level of complexity of that page will show how well a student grasped the concepts of the lesson. Though individual work is highlighted, partner or small group learning is encouraged so students can share advanced skill sets they developed and reinforces tag usage. Students will be allowed to discuss aspects of HTML in class using Vietnamese to help remove some of the language barrier in skill development, but guided lessons will focus on English usage. Students are encouraged to communicate in English when possible to enhance vocabulary within the subject. All display elements are individual to student choice and interests. |

**8. Closure:** **Activity  
Question and Answer  
Sharing of Products**

**Notes:**

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| --- |
| A short quiz highlighting the tag structures will be given to the students at the end of the lesson and peer graded.  Peer review of web pages will be conducted to allow for suggestions or highlights of superior work that a student wishes to add to their own pages.  Questions can be addressed as to the overall structures involved with each site as a class for review.  Allow for students to ask for a teacher critique of how well the page works or what areas need to be addressed to make the site more professional to improve display quality.  As the lesson focuses only on skill development, no formal assessment is taken at this time. |

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|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **HTML Quiz w/Answer Key Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  1. (8) Inside the empty tags below, place the basic tags that all web pages need in order to function correctly:  <\_\_\_html\_\_\_\_>  <\_\_\_head\_\_\_\_>  <\_\_\_title\_\_\_\_\_> This is where the name of the web page goes. <\_\_/title\_\_\_>  <\_\_\_/head\_\_\_\_>  <\_\_\_body\_\_\_\_>  Everything added here will be on the web page  <\_\_\_/body\_\_\_>  <\_\_\_/html\_\_\_\_>  2. (6) Modifying text is fairly simple. What are the tags for the following:  bold <\_\_\_b\_\_\_> sample <\_\_\_/b\_\_\_\_\_>  underline <\_\_\_u\_\_\_> sample <\_\_\_/u\_\_\_\_\_>  italics <\_\_\_i\_\_\_> sample <\_\_\_/i\_\_\_\_\_\_>  3. (5) Place the correct tags into the following code where they belong. Text is red!!!!  <font color=”red”> I <i> *went* </i> <u> to a </u> <b> **western restaurant.<**/b></font>  4. (2) If you want to move something to the middle of your web page, then you use the  <\_\_\_center\_\_\_> tags <\_\_\_/center\_\_\_>.  5. (1) An easy way to navigate (move around) a web site is by following a hyperlink. Create the code for a hyperlink that would display the following text and (link): Microsoft Home Page (http://www.msn.com)  \_\_\_\_\_ <a href=http://www.msn.com>Microsoft Home Page</a> \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  6. (1) What does HTML actually stand for?  \_\_\_\_\_\_Hypertext Markup Language\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  7. (9) Look at the following table and write the HTML code needed to create it.   |  |  | | --- | --- | | Top Left Cell | Top Right Cell | | Bottom Left Cell | Bottom Right Cell |   The table border is 2. The table width is 100%. Make sure you end all tags!!!!!!!!!!!!  <table border=”2” width=”100%”> <tr> <td>Top Left Cell</td> <td>Top Right Cell</td> </tr> <tr> <td>Bottom Left Cell</td> <td>Bottom Right Cell</td> </tr> </table>  8. (1) Displaying an image or picture is simply done with an image tag. Write the code to display the picture located at C:\My Pictures\soccer\_ball.jpg  \_\_\_\_\_\_ <img src="C:\My Pictures\soccer\_ball.jpg"> \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  9. (1) Now link the picture you inserted from #8 to http://www.mypicture.com  <a href=http://www.mypicture.com><img src="C:\My Pictures\soccer\_ball.jpg"></a>  \*Alternate answer accepted though not correct on a web page. Students sometimes provide the answer directly to the question only and not the complete code:  <a href=http://www.mypicture.com> answer/picture from #8 </a>  10. (6) Write the code to display the hyperlinked image in #9 to be inside of a 1 cell table and center everything on the webpage.  <table align=”center”> <tr> <td><a href=http://www.mypicture.com><img src="C:\My Pictures\soccer\_ball.jpg"></a></td> </tr> </table>  \*Alternate answer accepted though not correct on a web page. Students sometimes provide the answer directly to the question only and not the complete code:  <table align=”center”> <tr> <td> answer from #9< td> </tr> </table>  11. (1) What does the <marquee></marquee> tag do?  \_\_\_\_\_\_scrolls text or images across the page from left to right \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  12. (4) Consider the following line of HTML code  <img src="hackanm.gif" width="70" height="70">Here is some Text  Tags \_\_\_\_\_\_ <img> or <img src> \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Attributes \_\_\_width=”70” height=”70” \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Elements \_\_\_\_\_Here is some Text \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  13. (1) Notepad can be used to build a website. What kind of program is Notepad?  \_\_\_\_\_\_\_\_\_\_ text editor \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  14. (1) IE and Firefox can be used to view a website. What kind of program are they?  \_\_\_\_\_\_\_\_\_\_ browser \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  15. (1) What file extension must your document be saved as to view as a web page?  \_\_\_\_\_\_\_\_\_\_ .htm or .html \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

\*HTML Quiz w/Answer Key created by Aaron Stalsworth

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|  |
| --- |
| **Short in-class project ideas** (options offered for self paced students and others after teacher guided lessons are finished):  **Create a web advertisement (**required during teacher guided lesson**)**  Basic:   * Insert an image onto a page * Set the image size to 432x60 * Hyperlink that image to alternate content   Advanced:   * Create a simple 1 cell table * Insert an image into the cell * Set the image size to 432x60 * Hyperlink that image to alternate content * Center the entire cell and add a border (size optional)     **Create a photo album (**optional**)**  Basic:   * Build a table with multiple rows and columns * Insert images into each cell in the row * Adjust image sizes so the page does not scroll to the right   Advanced:   * Build a table with multiple rows and columns * Insert images into each cell in the 1st row * Insert text descriptions or hyperlinks to content under each picture * Continue building row sets down the page until you are finished * Images must be adjusted so the page does not scroll to the right   **Set a theme to your page (**optional**)**  Basic:   * Set a page color attribute to the body tag   Advanced:   * Search the internet for themed HTML code and copy/paste it into the body tag to alter the look of the page * Add some audio that will be played when the page is viewed * Set the color of table/cell backgrounds to highlight content   **Set a web scroll** (optional)  Basic:   * Use a marquee tag structure to move text or a collection of images from left to right   Advanced:   * Place a marquee tag structure with content into a dedicated table or table cell * Adjust the speed and direction of the scrolling content   **Design a page(s) layout using tables** (optional)  Advanced:   * Create a main single cell table for the entire web page * Use nested table structures within the main table to create cells which will contain planned content * Decide which tables should be bordered and which ones will be hidden from the user when viewed * Once finished, save this file as .html * If creating more than 1 page, copy the .html file created and rename the new file for each additional page * Insert desired content into the individual cells of each page * Add hyperlinked navigation to move between all pages when viewed from a browser |

\*Short in-class project ideas created by Aaron Stalsworth

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\*Please note that this task was rewritten during my Differentiated Instruction course and I found it to be a much more complete lesson plan that the one I was using before therefore the change of format from previous lesson plans\*

**Task 6 Web Site Building using a 4th Generation Language Program**

**Computer Science Grade 11  
  
Type: Production/Practical**

**Time allocation:** 2 weeks

**Outcomes**: Outcome 1: Technology process, Outcome 2: Knowledge and understanding of computer-based systems, Outcome 3: Skills for Computer Based Systems

**1. Standards/KUDos:**

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| --- |
| Students apply a number of Web development strategies demonstrating an understanding in HTML, Web Page formatting, Web Navigation formatting, and Web Display concepts using a 4GL (4th Generation Language).  Students will learn to apply their coding skills within a 4GL environment as the next phase of Web design.  They apply their code knowledge by designing a web site that contains 3 separate pages connected through the use of proper navigation structure and tabled framework.  Students will search the internet for resources to develop their websites which are in the form of snippets of HTML code that are free to use. Each student will be allowed the freedom to build a web site based on their interest and will critically examine other students work to help enhance the display quality for possible upload to a web host.  *Know*:   * Web Design 4th Generation Language software (Microsoft FrontPage) * Navigation structure * Snippet insertion into Web pages * Design format to allow for any browser to read * Definitions of : 4GL, snippet, code view, design view, navigation, browser, browser view, theme, home page, navigation buttons, layout (optional)   *Understand*:   * Proper navigation structure is used to get from page to page * Adjusting table structures on each page to fit content and display in any web browser * Setting hyperlinks to navigate to specific content in the site or on the internet * Searching the web to identify HTML code snippets to copy/paste into a web page * Use of a 4GL software package to visually create a webpage without coding * Viewing the HTML code within a 4GL to make small adjustments to a web page   *Be Able to Do*:   * Explain how using a 4GL software package creates HTML code without coding by hand * Construct a 3 page website using a 4GL software package (FrontPage) * Use web searches to find snippets of HTML code which generate effects and place them into a webpage to enhance the site. * Plan and apply a theme so each page of the website has the same general look (ex. Use of colors, background music, images, effects, and many other options to show some continuity) |

**2. Pre-assessment/Formative Assessment Notes:**

|  |
| --- |
| Introduction into a 4GL software package, in this case Microsoft FrontPage, and the tools associated with building a web site. As the students are all high school age students, no pre-assessment into prior knowledge is needed as MS FrontPage works exactly like Microsoft Word and all students will have experience with Word software at this point.  Students are required to keep a Word document journal of links for used resources or snippets that they find across the web (even though they are all free to use, it is difficult to find them again if the students don’t keep some sort of activity log with daily progress reports.)  Formal assessment will be conducted after the class 10 of the unit expires and each student places their finished product within their student folder on the server or by email if they are absent. Content graded through use of the pre-provided rubric:   1. 3 web pages were created using the 4GL. 2. Table structures well formatted and do not break when opened in a different browser or the screen display is changed. 3. Navigation structure successfully allows for a user to move between all 3 pages from any point in the site. 4. A theme is applied to allow for all pages to have some continuity (One black page, one white page with a lot of text, and a 3rd blue page with only images is what this is trying to avoid) 5. A folder has been created and labelled with the students name to contain the site. 6. An image folder has been created within the site folder and all images/clips are inside. 7. A home page is clearly identifiable and is labelled index.html in the site folder. 8. All web pages fit the width of the browser and do not scroll sideways. (Up and Down OK) 9. If buttons were used for the navigation structure, are they correctly linked to other pages? 10. At least 1 image has been formatted to 432x60 pixels and is hyperlinked to alternative content as the standard for web advertisements is usually displayed this way. 11. All snippets used function correctly or have the desired effect. 12. A daily progress report journal (Word Doc format) is submitted with the web site documenting activity and web resources used in their final product. 13. Extra Credit given for each fully completed additional web page created that adheres to the above site guidelines (up to two additional pages for 5 web pages total, no extra credit given beyond 5 pages and is completely optional) |

**3. Hook:**

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| --- |
| Students are introduced to various buttons within Microsoft FrontPage 4GL software that correspond to the HTML tag structures previously learned. The students understand that the buttons essentially write all of the tag coding structures for them so they don’t have the need to program anything by hand. The students should realize within a few minutes that the software works just like Microsoft Word which all should have attained a superior level of knowledge using the functions from other classes before this lesson thus removing most apprehension toward learning to use the new program. |

1. **Content Delivery** (WHAT they will learn)

\_\_X\_ same resources (4GL tool used) \_\_X\_ same goal for all (3 developed pages)

\_\_X\_ different resources (for content)\* \_\_X\_ advanced goal for some (Optional   
 \_\_X\_ modified goal for some\* pages for credit)\*

**Notes:**

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| --- |
| All students are actively engaged in building a complete 3 page website using a 4GL software package (Microsoft FrontPage).  Content contained on the site and format of structures within the site is completely geared toward student interests during the entire development phase. The only graded component concerning content is that each page relates to the overall focus of the site and a general theme is applied to all pages.  Students wishing to build more than the 3 required pages are offered extra credit for each page built over the 3 required up to two additional completed pages.  Students wishing additional layout instruction can follow a teacher guided lesson found at <http://office.microsoft.com/en-us/frontpage-help/html-tables-iii-design-a-page-with-layout-tables-RZ001114270.aspx>.  Students wishing additional self study material concerning the use of FrontPage can be found at <http://office.microsoft.com/en-us/frontpage-help/CH010224755.aspx> as the entire tutorial will not be taught in class (I find that too many tutorials inhibits the students level of creativity during the design process and sites start to look the same). |

1. **Direct Instruction/Modeling** (HOW they will learn it)

\_\_\_\_\_ single strategy that engages all

\_\_X\_ more than one learning preference (based on Multiple Intelligence)\*

\_\_X\_ more than one modality (e.g., auditory, visual, kinesthetic)\*

**Notes:**

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| --- |
| A short introduction on how to search the internet for HTML snippets is given so the students understand how to conduct targeted web searches for alternate content and shown how to insert it into a web page.  A short lesson is given to guide students to button use within the 4GL.  Each student is provided a grading rubric to allow them a checklist to follow making sure that each of the graded applications are developed and addressed. Choice of self paced learning with optional tutorials is now available.  Students are guided through a short discussion on building a layout structure with their understanding of tables to facilitate faster building strategies if they choose to join the guided lesson (optional), but informed before the lesson that developing a layout first will save them much time during the development process and are encouraged to follow along. The guided lesson on page layouts using tables will be used from Microsoft’s office training site online at <http://office.microsoft.com/en-us/frontpage-help/html-tables-iii-design-a-page-with-layout-tables-RZ001114270.aspx>. A general FrontPage tutorial is available for students to take as well if they choose, but will not be covered in class. It can be found at <http://office.microsoft.com/en-us/frontpage-help/CH010224755.aspx>. Each tutorial uses text instructions, audio reinforcement, and video or graphic related diagrams when applicable.  After these short introductory lessons, the teacher then acts as a consultant offering individual tech support and suggestions as students run into problems or find something on the internet they wish to use for content, but don’t understand the associated English instructions. Each problem or resource is addressed on the board or through the projector to allow interested students a chance to also join in on the discussion. |

**6. Application Activities** (HOW they will learn it)

\_\_X\_ same for all (Use of 4GL)

\_\_X\_ tier by learning preference (based on Multiple Intelligences)\*

\_\_X\_ tier by readiness\*

\_\_X\_ tier by challenge/complexity\*

**Notes:**

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| --- |
| Basic Tier:   * Guided lesson for basic components of a 4GL and focused internet searching. * Use of a 4GL to create a 3 page website. * At least one snippet of HTML code is found on the internet and inserted into a page. * A navigation structure must be present to allow for connection to each page in the site. * A theme must be applied to show continuity within the site. * Pages must not break when viewed in a different browser and cannot scroll to the right. * The entire website must be contained within a site folder with the students name, an image folder containing all media files, and a home page correctly labeled index.html * A progress report journal using Microsoft Word is kept daily containing work addressed and issues that arose during development. References to internet content used must also be cited in the journal.   Advanced Tier:   * Self paced learning with optional tutorials available and contain all elements required of the basic tier. * Use of a tabled layout for the entire page structure. * Use of audio, video, and images to enhance the display effect of the site. * Optional task of creating a site larger than the 3 pages required (Credit given for up to 2 additional pages). * Display a level of professionalism with site creation by using other live websites as a reference model. |

**7. Independent Application** (How they will DEMONSTRATE their learning)

\_X\_ individual work \_\_\_ tier by readiness\*

\_X\_\_ with a partner \_\_\_ tier by challenge/complexity\*

\_X\_\_ in a small group (based on Multiple Intelligences)\* \_\_X\_ student choice (based on interest)\*  
   
 **Notes:**

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| --- |
| Students must independently develop their websites, but are encouraged to openly discuss aspects of each other’s work to enhance overall skill development. Teacher involvement during the development phase (lab time) is strictly as a consultant for troubleshooting purposes or for recommendations to allow students to develop their own problem solving solutions as there are always multiple solutions available concerning content development. Content contained within the site is completely dependent on student interest an will not affect the final grading process. |

**8. Closure:** **Sharing of Products**

**Critical Reflection**/**Question Posing**

**Notes:**

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| --- |
| Students will place their completed web folders on the main class server and will share their website with the class using the projector connected to the teacher’s computer. Critical reflection of their sites will be the discussion focus and they can field questions from the student audience concerning their choices or development process. Formal grading will ensue based on the rubric provided at the beginning of the lesson. |

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**Task 6 Marking Key**

|  |  |  |
| --- | --- | --- |
| Category | Marks | Teacher Comments/Total marks received |
| 5 complete web pages | 0-15 marks: 3 points per page |  |
| Site navigation structure present across whole web site | 0–10 marks: 2 points per page |  |
| Site theme development similar across pages | 0-5 marks: 1 point per page similar |  |
| Image sizing/load times is kept to a minimum | 0-5 marks: |  |
| Table structures are present without breaking in different views | 0-10 marks: 2 points per page unbroken |  |
| File organization contains all required folders and files | 0-5 marks: |  |
| Tag structures correct | 0-5 marks: |  |
| Site content is well developed | 0-10 marks: |  |
| Site assessment and summary | 0-10 marks: |  |
| Daily progress Reports/references complete and show work having been completed outside of class time | 0-20 marks: graded on level of completed notes |  |
| Teacher interpretation that all components of this task are visually present and work well | 0-5 marks: (easy 5 points if optionals are included) |  |
| HTML written test (Optional for grading from task 5) | 0-50 marks:  (teacher option) |  |
| Deduction for late submission of Task 3 | (-20 marks)  Yes/No |  |
| Total marks | 100 marks: (150 marks with test) |  |

# TASK 7: How to guide (95 marks)

You have been asked by a number of different people to help them carry out procedures for maintaining and securing their home computers. You have decided to write a *How to Guide* that will explain the main procedures they will need to carry out and the resources they will need.

**Computer Science Grade 11**

**TYPE:** Investigation

**Time Allotment**: 2 Weeks (Best assigned on Friday as homework)

**OUTCOMES:** Outcome 1: Technology process and Outcome 2: Knowledge and understanding of computer-based systems

**What you need to do**

1. Maintenance and security tasks - Brainstorm
2. Research and identify 4 additional categories that identify important topics relating to maintenance and security of home computer systems. Also include a list of all tasks that would be performed in each of the key areas. Do not write any procedures for tasks at this stage. [16 marks]

The first topic has been completed for you.

|  |  |
| --- | --- |
| Maintenance and security topics | Tasks |
| 1 Virus protection | * install virus protection program * update virus protection program * scan computer |
| 2 |  |
| 3 |  |
| 4 |  |
| 5 |  |

1. Present your ideas during the class maintenance and security brainstorm. The teacher will be assessing your contribution to the discussion. Add any new topics or tasks identified during the class brainstorm to your list. [4 marks]
2. Identify any hardware or software that would be required for each of the tasks. Include an explanation of where these resources would be obtained. [15 marks]
3. You are now ready to prepare your *How to Guide*. This will consist of the procedures to carry out the most important tasks from your list. [25 marks]
4. Present your How to Guide as a word processed document ensuring that your tasks are grouped under the topic headings.
5. Rank the tasks from most important to the least important.
6. For each task that you consider most important, make a list of the procedures that would need to be carried out and the estimated time requirements. Be careful to make sure you have a logical sequence of steps to achieve the task.
7. Support your How to Guide with references to confirm that your procedures are based on standard practice. Your references could refer to books, web resources, notes and exercises from class and discussions with peers or teacher.
8. You also need to write complete summaries to make sure that these users (your clients) understand some of the issues associated with responsible and ethical use of their home computer. [20 marks]
9. Briefly describe:
   * + Software piracy
     + Open source software.
     + Hacking problems
     + Firewall issues
     + Copyrights and Trademarks
     + Intellectual Property rights
10. Identify the impact on the community that results from the misuse of personal information in the areas of:
    * + Credit card numbers
      + Email addresses.
      + Password security
      + Identity Theft

**5.** Complete a list of references for all information collected during your task. They should follow the standard internet bibliography format for using articles found on the internet to allow your client to further research each topic on their own. This should be found at the end of your paper on its own page. The format for your references is as follows: [15 marks]

Author, Title, Link (for example)

Margaret Johnston, Security center issues anti-hacker tool, <http://www.infoworld.com/articles/hn/xml/01/03/12/010312hnsecuritytool.html>

**Keep in Mind:**

1. A minimum of 15 different website articles must be used to complete this task, but considering the amount of information that you will need, it may be much more.
2. This How to Guide will also require a lot of research and writing and a minimum of 10 pages will be needed with the standard format of text size 12 and double spaced.
3. Using images in your presentation is allowed, but over use of images without much discussion will reduce your grade.
4. You are writing the paper for your client; make sure that you write the task with that in mind. Your explanations must be complete and easy to read.
5. This is to be completed in Microsoft word and will be placed on the Z: drive when finished.
6. My email is (Insert your Email here) if you have any questions during the task.
7. Task 4 submitted late will be deducted 20 marks. If you are absent, you still need to email the entire project to me on (Insert Due Date) for full credit.

|  |  |  |
| --- | --- | --- |
| **What needs to be submitted for assessment** | **Due** |  |
| * Research/Brainstorm list at the beginning of class to be checked, then presented in front of the class afterward | Beginning of Class on Monday |  |
| * How to Guide documents (questions 1–4) | End of 2 Weeks |  |
| * References (Part 5) | End of 2 Weeks |  |

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# Task 8: Database operations

**Your client wants to keep track of information that is located on their computer in a database. Their computer contains various programs, pictures, videos, documents, pdf files that should all be kept in order.** Using your home computer as the guide, build a relational database which will contain an ordered listing of everything that is on your computer. Categorized tables which minimize duplicated data should be used and related to each other logically to allow for easy searching.

**Computer Science Grade 11  
  
Type: Production/Practical**

**Time allocation:** 4 weeks

**Outcomes**: Outcome 1: Technology process, Outcome 2: Knowledge and understanding of computer-based systems, Outcome 3: Skills for Computer Based Systems

**What you need to do**

1. **Gathering information** ***[10 marks]***
2. What information about the various drives, folders, and files that are on your computer do you want to record in your database?
3. Begin to collect data from your computer which will be represented in your database for a sample
4. **Database plan *[25 marks] In MS Word (Plan Report – part 1) do the following…***
5. Draw the tables plan used to store the information in a database. Indicate the data type for each field and the primary key.
6. Draw a diagram of the forms you will use to enter the data. Ensure that you make the form functional and attractive.
7. Describe what queries and reports you think would be useful.
8. Use the following table to list how you have considered important design factors in the design of your database. Two factors have been completed for you.

|  |  |
| --- | --- |
| **Important design factors** | **How have you addressed these?** |
| Appearance/aesthetics |  |
| Data accuracy and correctness (integrity) |  |
|  |  |
|  |  |
|  |  |
|  |  |

1. Check your plan with your teacher before starting question 4.
2. **Database solution *[30 marks*]**

Use your plan to create the database using MS Access. If you need to make any part of your database different to your plan, make sure you record the modifications and the reasons for the changes in your daily session reports. Once your database is ready, begin to enter data into the fields based on your home computer.

1. **Test and evaluate *[10 marks] Include in MS Word (Plan Report – part 2)***

**a)** Build queries and reports which will show the information that is contained in the database. Build enough queries (questions to ask the database) to use all of your data fields at least once and the report for each query.

**b)** Screen capture the first page (or enough of it to read the header and some data) and place a summary of what that report shows and also include the English question that represents your query.

**Session progress report *[10 marks*] Include in MS Word *(Plan Report – part 3)***Keep records of how you approached the task and submit the daily progress reports to your teacher with the final report. It is important that you show initial concepts and changes made during the process.

|  |  |  |
| --- | --- | --- |
| **What needs to be submitted for assessment** | **Due** | **Actual date** |
| * Session progress reports | Daily with final report |  |
| * Question 1: Gathering information | End of Week 2 |  |
| * Question 2: Database plan | End of Week 2 |  |
| * Question 3: Database solution | End of Week 4 |  |
| * Question 4: Test and evaluation |

* Make sure that you have enough data in the database for it to be effective. No limit is placed on the amount entered, but if it is too short, your grade will be lower.
* Questions on building the database in a relational manner can be answered using <http://www.geekgirls.com/databases_from_scratch_3.htm> as a reference.
* You are expected to use your home computer and not the lab computers for all of your information (though some is ok). You are expected to complete a large percentage of this task outside of class. That means you have homework every day from now until this project is complete.
* Any projects not turned in by (Insert Due Date) will be deducted by 20 marks. If you are going to be absent, you need to email it to me at (Insert your Email here)

**Use** [**http://www.geekgirls.com/databases\_from\_scratch\_3.htm**](http://www.geekgirls.com/databases_from_scratch_3.htm) **for a reference to how to build a relational database should you have any questions**

**Task 8 Marking key**

|  |  |  |  |
| --- | --- | --- | --- |
| **Item** | **Description** | **Possible Mark** | **Allocated Mark** |
| Information: [15] | * what information about drives, folders, files, programs, documents will you need to collect * collect information from your computer for beginning sample | 1–5  1–5 |  |
| Database  plan: [25] | **Data collection plan**   * tables to store the information collected   *drawn, correct,*   * indicate the data type for each field   *1mk per relevant data type max 5*   * indicate the correct primary keys   **Database plan**   * draw a diagram of a forms to enter the data   *correct, labelled reflects data and functional = 1–5*   * are the forms functional and attractive   *functional, design principles applied = 1–3*  **Database plan justification**   * describe the usefulness of queries, and reports * list the important design factors of your database   *1mk per relevant factor max 4*   * check your plan with your teacher | 1–2  1–5  1  1–5  1–3  1–4  1–4  1 |  |
| Database  solution: [30] | * use your plan to create the database using an appropriate database package   *appropriate DB selected & created = 1–5 appropriate relations made in DB = 1-5 appropriate forms created = 1–5 appropriate queries created = 1–5 database reflects database plan = 1–5 Database reflects design elements = 1–5* | 1–30 |  |
| Test  and evaluation: [10] | * Enough queries and reports built to be useful for a client and uses the entire database of information. * Screen captures of reports submitted included   *For each above*  *Queries and Reports fully show database information = 5*  *Detailed investigation with justification = 4;*  *Investigation meets minimum requirements = 3;*  *Limited response= 2*  *Incomplete response = 1* | 1–5  1–5 |  |
| Session progress reports   [10] | * records maintained of how you have approached this progress reports to your teacher   *work submitted 1 per week= 3*  *work detailed & maintained per week = 3*   * evidence of initial concepts and changes made during the development of the task   *detailed evidence of initial concepts and changes = 4*  *evidence of initial concepts and changes = 3*  *limited evidence and limited changes =2*  *incomplete = 1* | 6  4 |  |
|  |  | **Total/ 85** |  |