

Engineering

Programme: Edexcel BTEC Higher National in Engineering



OAKLANDS COLLEGE

Unit No: 112

Unit Title: Computer Programming Techniques

Level: 4

Credit: 15

Assignment No: 2 of 3		Student Name:			
Assignment Title: Software Coding					
Issue Date: 12/May/2016			Return Date: 26/May/2016		
Assessor: Dr Derek Peacock					
Outcomes Covered: 1. Be able to design and develop code using structured programming methods 2. Be able to use modularisation appropriate to the chosen programming language 4. Be able to create and apply appropriate test schedules					
Assessment Criteria		Achieved	Assessment Criteria		Achieved
P1.2	use simple input/output and appropriate operators with appropriate data types	Yes/No	P1.3	use appropriate selection structures and loop structures for the given task	Yes/No
P4.1	demonstrate discrimination between semantic and syntax errors	Yes/No	P4.4	use appropriate techniques for detecting errors	Yes/No
P2.3	pass data effectively between modules	Yes/No	P2.2	demonstrate the effect of scope and life-time of variables	Yes/No
M1	identify and apply strategies to find appropriate solutions	Yes/No			
IF YOU DO NOT SIGN THIS, YOUR WORK WILL NOT BE MARKED					
I certify that this piece of assessment is my own work, that it has not been copied and that any extracts from books, the internet or any other sources have been properly acknowledged as references					
Student signature:					Hand in Date:
Assessor signature:					Date:
Grade accepted by Student:			Student Signature:		Date:
Grade agreed by IV Name:			IV Signature:		Date:
Grade agreed by Lead IV Name:			Lead IV Signature:		Date:

THIS SHEET MUST BE RETURNED WITH THE COMPLETED WORK

Assessor's Comments (clearly identify and date feedback for each attempt. State a resubmission date if required):

Student's Comments:

Merit criteria that may be achievable in this assignment are:

- M1 identify and apply strategies to find appropriate solutions
- ~~M2 select/design and apply appropriate methods/techniques~~
- ~~M3 present and communicate appropriate findings~~

Distinction criteria that may be achievable in this assignment are:

- ~~D1 use critical reflection to evaluate own work and justify valid conclusions~~
- ~~D2 take responsibility for managing and organising activities~~
- ~~D3 demonstrate convergent/lateral creative thinking~~

To be read in conjunction with Merit/Distinction guide on Oaklearn for detailed descriptors.

Merit/Distinction Descriptor	Description of Evidence
M1: identify and apply strategies to find appropriate solutions	Evaluations of both simulations clearly identify their limitations, and suggest ways that the simulations can be made more realistic



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Assignment 2 Brief

Scenario

You have completed your engineering apprenticeship at Samsung and have been offered a position as a junior Software Engineer. The company would like your team to develop either a game, or a simulation that can be released as a free addition on the Android Operating system mounted on Samsung Tablets. The purpose of the game is to make the Samsung brand more attractive to potential customers. The game or simulation could be 2D labyrinth with a birds-eye view of moving objects. Ideally Samsung are looking for an addictive game similar in principle and popularity as Pac Man, or an interesting simulation such as Fox and Rabbits.

You have been asked to complete a staff training exercise individually in order to demonstrate your understanding of Java Coding.

P1.2, P4.1, P4.4 Ticket Machine Simulation

1. Produce a simulation of a Car Park Ticket machine using BlueJ
2. Produce a final report with screen shots of your machine in action.
3. In your final report include screen shots of three examples of syntax errors (actual errors you have made). Precede those examples with a definition of what a Syntax Error is
4. In your final report add one example of a semantic error, and precede that by a definition of Semantic Error.
5. In your final report add one example of using the Java debugger to examine how the code works line by line.

P1.3 P2.2, P2.3 Predator/Prey Simulation

1. You are asked to use Greenfoot to produce a starting map for predator/prey simulation such as foxes and rabbits, or shark and fish.
2. Select the most appropriate loop and selection structures
3. Produce a final report with screen shots of your map in action.

THIS SHEET MUST BE RETURNED WITH THE COMPLETED WORK

4. In your final report show examples of loops and selection with appropriate comments to explain them
5. In your final report show examples of the scope and life time of variables
6. In your final report explain how data is passed between modules

M1 (*strategies and solutions*)

Add an evaluation section on to each of the reports that examines and identifies the limitations of the two simulations, and suggests ways in which they could be made more realistic