Assignment Brief

Assignment front sheet

Qualification		Unit number and title
Pearson BTEC Level 5 HND Diploma in Computing and Systems Development		Unit 19 K/601/1295/Object Oriented Programming
Student Name	**BTEC Number**	**Assessor name**
		Guhanathan Poravi

Date issued	Completion date	Submitted on
28/05/2017	20/06/2017	

Assignment title	Programming Solution for a scenario

AC	In this assessment you will have the opportunity to present evidence that shows you are able to:	A/NA	AC	In this assessment you will have the opportunity to present evidence that shows you are able to:	A/NA
1.1	discuss the benefits and constraints of different networking systems types and topologies		4.4	recommend potential enhancements for the networked systems	
1.2	evaluate the impact of current network technology, communication and standards		4.5	design a maintenance schedule to support the networked system.	
1.3	discuss how protocols enable the effective utilisation of different networking systems		M1	Identify and apply strategies to find appropriate solutions	
2.1	discuss the role of software and hardware components		M2	Select/design and apply appropriate methods/techniques	
2.2	discuss server types and selection requirement		M3	Present and communicate appropriate findings	
2.3	discuss the inter-dependence of workstation hardware with network components		D1	Use critical reflection to evaluate own work and justify valid conclusions	
3.1	design a networked system to meet a given specification		D2	Take responsibility for managing and organising activities	
3.2	evaluate the design and analyse user feedback		D3	Demonstrate convergent/lateral/ creative thinking	
4.1	implement a networked system based on a prepared				
4.2	test the network system to meet user requirements				
4.3	document and analyse test results against expected results		**Grade**		

Learner declaration
I certify that the work submitted for this assignment is my own and research sources are fully acknowledged. Student signature: Date:

Preparation Guidelines of the Coursework Document

1. A Cover page or title page – You should always attach a title page to your assignment. Use previous page as your cover sheet and be sure to fill the details correctly.

2. This entire brief should be attached in first before you start answering.

3. All the assignments should prepare using word processing software.

4. All the assignments should print in A4 sized paper, and make sure to only use one side printing.

5. Allow 1" margin on each side of the paper. But on the left side you will need to leave room for binging.

6. Ensure that your assignment is stapled or secured together in a binder of some sort and attach the Softcopy (CD) of your final document, system on last page.

Word Processing Rules

1. Use a font type that will make easy for your examiner to read. The font size should be 12 point, and should be in the style of Time New Roman.

2. Use 1.5 line word-processing. Left justify all paragraphs.

3. Ensure that all headings are consistent in terms of size and font style.

4. Use footer function on the word processor to insert Your Name, Subject and Page Number on each page. This is useful if individual sheets become detached for any reason.

5. Use word processing application spell check and grammar check function to help edit your assignment.

6. Ensure that your printer's output is of a good quality and that you have enough ink to print your entire assignment.

Important Points:

1. Check carefully the hand in date and the instructions given with the assignment. Late submissions will not be accepted.

2. Ensure that you give yourself enough time to complete the assignment by the due date.

3. Don't leave things such as printing to the last minute – excuses of this nature will not be accepted for failure to hand in the work on time.

4. You must take responsibility for managing your own time effectively.

5. If you are unable to hand in your assignment on time and have valid reasons such as illness, you may apply (in writing) for an extension.

6. Failure to achieve at least a PASS grade will result in a REFERRAL grade being given.

7. Non-submission of work without valid reasons will lead to an automatic REFERRAL. You will then be asked to complete the assignment with the next batch.

8. Take great care that if you use other people's work or ideas in your assignment, you properly reference them, using the HARVARD referencing system, in you text and any bibliography, otherwise you may be guilty of plagiarism.

9. If you are caught plagiarising you could have your grade reduced to A REFERRAL or at worst you could be excluded from the course.

Assignment brief

Unit number and title	Unit 19 Object Oriented Programming
Qualification	Pearson BTEC HND Diploma in Computing and Systems Development
Start date	28/05/2017
Deadline/hand-in	20/06/2017
Assessor	

Assignment title	Programming solution for a scenario

Purpose of this assignment

To provide learners with an understanding of the principles of object oriented programming as an underpinning technological concept in the field of programming, data management and systems development.

Scenario

"Super Sonic" Metered Taxi Service is a popular private three wheeler transportation service provider limited to Colombo district only (i.e from Colombo 1-15) in Sri Lanka. Right now, they have planned to expand their services for entire western province; you have been hired as a professional Object Oriented Programming developer to design and implement an automated system to manage entire Processes of Super Sonic Metered Taxi.

"When a customer contacts the reservation desk via a call, the receptionist will obtain the passenger name, the current location of departure, the destination of arrival, number of passengers and the time of hire with a valid contact number. Then the receptionist will search and find the nearest available Taxi from the Taxi registry.

Taxi registry is just a plain text book which contains the records of registered taxies around the city owned by private owners whereas taxies do not belong to us, apart from the main service point to supersonic, any other mode or manner of operations will be not considered as a point of responsibility from our side.

Once a nearby Taxi is found, the receptionist will make a phone call to the particular taxi owner to confirm whether he is able to take the hire and once he accepts the hire, the passenger details will be informed to him, but in case of unavailability of the particular taxi, the hire goes to another next nearest Taxi owner.

An amount of money will be charged from the vehicle owner in a monthly or daily basis depending on desire of the taxi owner. Payment can be made in cash or cheque. New three wheelers also can subscribe with us by making a down payment of Rs. 15,000 which can be refunded after one year of time and necessary information can be also gathered while registering them".

According to the new expansion ideas, Supersonic is planned to provide various vehicle transportation services such as car, van and three wheelers depends on the customer demands.

Therefore, vehicle details should be maintained separately in the new system.
Refundable down payments of vehicles are as follows:
Van: Rs. 35,000, Car: Rs. 25,000& Three wheeler: Rs. 15,000

Task 1

Discuss the characteristics and principles of Object Oriented Programming and provide a comprehensive report on how these characteristics could be applied in the required system. **(LO 1.1, M1.3)**
(Include your report should include Encapsulation, Polymorphism, Inheritance, Abstra0ct class, Interfaces, collections, Constructors, Destructors, Instance variables, Instance methods and class relationships)

Task 2

1. Identify the objects (Classes) from the scenario and list all the data and methods of each object you have identified. (LO 2.1)

2. Draw complete use case, class and sequence diagram for the given scenario. **(LO 2.2, M2.2)**

Task 3 (D1.2)

1. Implement the Object Oriented solution using C#.Net for the proposed Design(LO 3.1)
2. Provide evidences of use of association, aggregation, composition and generalization relationships from your system. (LO 3.2)
3.
    a. Demonstrate how concept of polymorphism used in your system.
    b. Implement control structures have been used in your system.
    (LO 3.3)
4. Make effective use of an integrated development environment (IDE) including code and screen templates. (LO 3.4)

Task 4

1. Prepare a test plan, then critically review and test your solution according to the plan. **(LO 4.1, M3.1)**
2. Analyze actual test results against expected results and identify inconsistencies. (LO 4.2)

3. Get independent feedback on your solution (use surveys, questioners, interviews or any other feedback collecting method) and suggest recommendations and improvements. (LO 4.3)
4. Create onscreen help to assist the uses of a computer programme. (LO 4.4)
5. Prepare the technical documentation for the support and maintenance of the software (should include an installation and maintenance guide and important coding samples with comments).(LO 4.5)

Observation Sheet

Activity No	Activity	Learning Outcome (LO)	Date	Feedback (Pass/ Redo)
1				
2	Write, Run and test an update query on selected table.	LO4.1		
3	Run and test all queries written for Task 8	LO4.1		
4	Create users and roles policies for a test database	LO4.5		
5	Execute triggers and view that you have implemented	D3.5		

Comments:

Supportive Sources

Books

Kaldahl B – *EZ Flash MX: Animation, Action Script and Gaming for Macromedia Flash* (Trafford Publishing, 2004) ISBN 1412006171
Lemay L and Cadenhead R – *Sams Teach Yourself Java 2 in 21 Days, 4th Edition* (Sams, 2004) ISBN 0672326280
Schildt H – *C++: A Beginner's Guide, 2nd Edition* (McGraw-Hill Education, 2003) ISBN 0072232153
Templeman J and Olson A – *Microsoft Visual C++ .NET Step by Step: Version 2003* (Microsoft Press US, 2003) ISBN 0735619077

Websites

http://java.sun.com/docs/books/tutorial/
http://msdn.microsoft.com/en-us/visualc/default.aspx

Achievement Summary

Learning Outcomes	Summary of Evidence required by the student	Achieved	Feedback
LO1 Understand the principles of object oriented programming			
LO1.1 1.1 discuss the principles, characteristics and features of objected oriented programming	Principles and characteristics of OOP		
LO2 Be able to design object oriented programming solutions			
LO 2.1 identify the objects and data and file structures required to implement a given design	**Identify objects and file structures**		
LO 2.2 design an object oriented programming solution to a given problem	Design a OOP solution		
LO3 Be able to implement object oriented programming solutions			
LO 3.1 implement an objected oriented solution based on a prepared design	Implement designed solution		
LO 3.2 define relationships between objects to implement design requirements			
LO 3.3 implement object behaviours using control structures to meet the design algorithms			
LO 3.4 make effective use of an Integrated Development Environment (IDE), including code			

and screen templates			
LO4 Be able to test and document object oriented programming solutions			
LO 4.1 critically review and test an object orientated programming solution			
LO 4.2 analyse actual test results against expected results to identify discrepancies			
LO4.3 evaluate independent feedback on a developed object oriented programme solution and make recommendations for improvements			
LO4.4 create onscreen help to assist the users of a computer program			
LO4.5 create documentation for the support and maintenance of a computer program.			

In addition to the above PASS criteria, this assignment gives you the opportunity to submit evidence in order to achieve the following MERIT and DISTINCTION grades			
Grade Descriptor	**Indicative characteristic/s**	**Contextualisation**	**Feedback**
M1 Identify and apply strategies to find appropriate solutions	**M1.3** An effective approach to study and research has been applied.	Conduct a research and analyse different concepts **Task 1**	
M2 Select/design and apply appropriate methods/techniques	**M2.2** a range of methods and techniques has been applied.	By implementing a various UML diagrams **Task 2.2**	
M3 Present and communicate appropriate findings	**M3.1** the appropriate structure and approach has been used.	Proper use of documentations when creating test plan.	
D1 Use critical reflection to evaluate own work and justify valid conclusions	**D1.2.** The validity of results have been evaluated using defined criteria	By implementing the system **Task 3**	
D2 Take responsibility for managing and organising activities	**D2.3** Activities have been managed.	You need to submit your work on time.	
D3 Demonstrate convergent/lateral/ creative thinking	D3.5 Innovative and creative thought have been applied	From entire project	

Assignment Feedback

Formative Feedback: Assessor to Student			
Summative feedback			
Improvements			
Assessor Signature		**Date**	
IV Signature		**Date**	