HND Assignment Brief
Session: February 2020

Programme title	BTEC HND in Computing	
Unit number and title	30	Application Development (L5)
Assignment number & title	1 of 1	Application Development
Unit Leader	-	
Assessor (s)	Mr Amjad Alam, Dr Sanjib Pandey	
Issue Date	4/03/2020	
Final assignment submission deadline	**08 – 13 June 2020**	
Late submission deadline	**15 – 20 June 2020** The learners are required to follow the strict deadline set by the College for submissions of assignments in accordance with the BTEC level 4 – 7 submission guidelines and College policy on submissions.	
Resubmission deadline	TBA	
Feedback	Formative feedback will be available on ICON VLE and in class during the semester. Final feedback will be available within 2 – 3 weeks of the assignment submission date.	

General **Guidelines**	• The work you submit **must be in your own words**. If you use a quote or an illustration from somewhere you must give the source. • Include a list of references at the end of your document. **You must give _all_ your sources of information.** • Make sure your work is clearly presented and that you use **readily understandable English**. • Wherever possible use a word processor and its **"spell-checker"**.

Internal verifier	M. J. Hasan		
Signature (IV of the brief) *	*Hasan*	Date	27/03/2020

ICON College of Technology and Management
BTEC HND in Computing
Unit 30: Application Development (L5)
Session: February 2020
Coursework
Recommended word limit: 3000

You are strongly advised to read "Preparation guidelines of the Coursework Document" before answering your assignment.

Assignment:

Objective

This coursework is designed to demonstrate the broad understanding knowledge of the module, assessing and evaluating the strength and level of analysis of student, divided into four learning outcomes, the coursework should be submitted as one document in a report format.

Scenario

The "Whitechapel Vehicle Rental Service (WVRS)" provides the different types of vehicles (mini bus, car, bike, van) rental services to tourist, travel agency, private company and individual. Currently WVRS design and develop a simple system to manage their day-to-day business.

The vehicle information are given below:
- WVRS has different types of vehicles - Mini Bus, Car, Bike, Van
- Vehicles have different gearbox – Automatic/Semi-automatic and Manual
- Vehicles have different fuel types – Petrol, Diesel, Electric and Hybrid
- Vehicles information are registration number, engine size, colour, model, make, current mileage, fuel type, no. of doors, services history, safety information, dimension (height, length, width etc)
- Car and Mini Bus has different capacity of seats e.g. 9,10 seats, 12 seats (max. 30 seats)

Application's Requirement are given below:

- System must have a login system i.e. when run the application, it should ask the user to enter username and password;
- User can try to login on system maximum 3 times then system automatically exits.

- Tourist, travel agency, private company or individual can hire the vehicle for maximum 7 days and minimum 1 day.
- WVRS record all the information (full name, driving license, DOB, contact address and emergency contact detail) of tourist and individual customer.
- Tourist and individual is required to pay all the cost of rental service and plus they damage repair cost of the vehicle.
- Tourist and individual customer can't reserve the vehicle, but travel agency and private company can make a reservation of vehicles
- WVRS issue the receipt (name, address, type of vehicle, no of days, rate, amount, vat, total due amount, payment method) a confirmation of payment and provide them the vehicle with required documents
- WVRS record the travel agency and private company details (company name, company address, contact address, contact person etc.)

- WVRS issue the invoice (no of vehicles, type of vehicle, no of days, rate, amount, vat, total due amount) to travel and private company.

The price list of vehicles of per day are given below

Vehicle type	Automatic / Semiautomatic	Manual
Car	£75	£50
Bike	£50	£50
Mini Bus 9/10 seats	£100	£75
Mini Bus 15 seats	£175	£125
Mini Bus 20 seats	£250	£200
Van Small	£100	£95
Van Big	£175	£125

LO1

In relation to the above Business requirement, identify its business-related problem by highlighting and preparing a well-defined problem definition statement and describe the issues that need to be addressed along with possible solutions supported by a set of user and system requirements. Since every project is often related with many risks in achieving its success, therefore you need to identify the areas of risk related to the successful completion of your application. To start with the actual development, you need to analyse the business-related problem of the case study using appropriate methods and produce a well-structured Software Design Document that defines a proposed solution and includes relevant details on requirements, system analysis, system design, coding, testing and implementation.

LO2

As we know that the ultimate objective of software engineering is to produce good quality maintainable software within reasonable time frame and at an affordable cost, therefore you need to carry out research on the use of different software development tools and techniques/ methodologies and present with comparison on various software development tools and techniques. Once you have reviewed, you need to justify on the one which you have selected for the development of your application. It is important to get reviews on your business application plan in order to achieve the desired business objectives and therefore, you are required to create a formal presentation that effectively reviews your business application, problem definition statement, and proposed solution and development strategy.

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LO3

You are now required to present this plan to your other colleagues as part of a peer-review and document any feedback given by your peers. After getting the peer review from your colleagues, you are now required to develop a fully functional business application based on a specified business problem given in the case study above. You need to interpret your peer-review feedback and identify changes/ addition in your report, that you will make on you design or development, which was not previously considered by you. Make sure that your

interpretation also covers with arguments on the potential improvements carried out by you to your system.

LO4

Once you have fully developed the required application, you are now to make critical review on the performance and development of your application. For this, you need to review the performance of your business application against the Problem Definition Statement and initial requirements. There are key factors that can negatively impact the performance of the software application, therefore you need to analyse the factors that influence the performance of your business application and use them to undertake a critical review of the design, development and testing stages of your application and conclude your review by reflectively discussing your previously identified risks. As a part of the final holistic evaluation of your project, you need to cover on the strengths and weaknesses of your business application and justify opportunities for improvement and further development.

Appendices

Note: You should attach all the supporting documents as a separate file in the appendix section of your assignment. Without appropriate evidence(s) your assignment will not be marked.

- Presentation slide
- Written code, etc.

Relevant Information

To gain a Pass in a BTEC HND Unit, you must meet ALL the Pass criteria; to gain a Merit, you must meet ALL the Merit and Pass criteria; and to gain a Distinction, you must meet ALL the Distinction, Merit and Pass criteria

1. Summary of Learning Outcomes and Assessment Criteria

Learning Outcomes and Assessment Criteria		
Pass	**Merit**	**Distinction**
LO1 Produce a Software Design Document by analysing a business-related problem and deduce an appropriate solution including a set of initial requirements		
P1 Explore a business-related problem and produce a well-defined Problem Definition Statement supported by a set of user and system requirements. P2 Determine any areas of risk related to the successful completion of your application.	M1 Analyse a business-related problem using appropriate methods and produce a well-structured Software Design Document that defines a proposed solution and includes relevant details on requirements, system analysis, system design, coding, testing and implementation.	LO1 & LO2 D1 Justify the tools and techniques chosen to realise a custom-built website. Justify your preferred selection of tools and techniques in deducing an appropriate solution to a business-related problem.
LO2 Use design and development methodologies with tools and techniques associated with the creation of a business application		

P3 Research the use of software development tools and techniques and identify any that have been selected for the development of this application.	M2 Compare the differences between the various software development tools and techniques researched and justify your preferred selection as well as your preferred software development methodology.	
LO3 Work individually and as part of a team to plan and produce a functional business application with support documentation		D2 Evaluate any new insights, ideas or potential improvements to your system and justify the reasons why you have chosen to include (or not to include) them as part of this business application.
P4 Create a formal presentation that effectively reviews your business application, problem definition statement, proposed solution and development strategy. Use this presentation as part of a peer-review and document any feedback given. P5 Develop a functional business application based on a specified business problem.	M3 Interpret your peer review feedback and identify opportunities not previously considered. M4 Develop a functional business application based on a specific Software Design Document with supportive evidence of using the preferred tools, techniques and methodologies.	
LO4 Evaluate the performance of a business application against its Software Design Document and initial requirements		D3 Critically evaluate the strengths and weaknesses of your business application and fully justify opportunities for improvement and further development.
P6 Review the performance of your business application against the Problem Definition Statement and initial requirements.	M5 Analyse the factors that influence the performance of a business application and use them to undertake a critical review of the design, development and testing stages of your application. Conclude your review by reflectively discussing your previously identified risks.	

2. **Preparation guidelines of the Coursework Document**

    a. All coursework must be word processed.
    b. Avoid using "Textbox" in writing your assignment.
    c. Document margins must not be more than 2.54 cm (1 inch) or less than 1.9cm (3/4 inch).
    d. Font size must be within the range of 10 point to 14 points including the headings and body text (preferred font size is 11).
    e. Standard and commonly used type face, such as Arial and Times New Roman, should be used.
    f. All figures, graphs and tables must be numbered.
    g. Material taken from external sources must be properly referred and cited within the text using **Harvard system**
    h. Do not use Wikipedia as a reference.

3. **Plagiarism and Collusion**
   Any act of plagiarism or collusion will be seriously dealt with according to the College regulations. In this context the definitions and scope of plagiarism and collusion are presented below:
   Plagiarism is presenting somebody else's work as your own. It includes copying information directly from the Web or books without referencing the material; submitting joint coursework as an individual effort.
   Collusion is copying another student's coursework; stealing coursework from another student and submitting it as your own work.
   Suspected plagiarism or collusion will be investigated and if found to have occurred will be dealt with according to the College procedure **(For details on Plagiarism & Collusion please see the Student Handbook).**

4. Submission
a. Initial submission of coursework to the tutors is compulsory in each unit of the course.
b. The student must check their assignments on **ICON VLE** with plagiarism **software Turnitin** to make sure the similarity index for their assignment stays within the College approved level. A student can check the similarity index of their assignment up to *five* times in the **Draft Assignment submission point** located in the home page of the ICON VLE.
c. All Final coursework must be submitted to the **Final submission point** into the Unit (**not to the Tutor).** The student would be allowed to **submit only once** and that is the final submission.
d. Any computer files generated such as program code (software), graphic files that form part of the coursework must be submitted as an attachment to the assignment with all documentation.
e. *Any portfolio for a Unit must be submitted as an attachment in the assignment*

5. Good practice
a. Make backup of your work in different media (hard disk, memory stick, etc.) to avoid distress due to loss or damage of your original copy.

6. Extension and Late Submission
a. If you need an extension for a valid reason, you must request one using an Exceptional Extenuating Circumstances (EEC) form available from the Examination Office and ICON VLE. Please note that the tutors do not have the authority to extend the coursework deadlines and therefore do not ask them to award a coursework extension. The completed form must be accompanied by evidence such as a medical certificate in the event of you being sick, and should be submitted to the Examination Office.
b. Late submission will be accepted and marked according to the College procedure. It should be noted that late submission may not be graded for Merit and Distinction.
c. All late coursework must be submitted to the **Late submission point** into the unit (**not to the Tutor)** in the ICON VLE. A student is allowed to submit only once and that is also treated as the final submission.
d. If you **fail in the Final or Late submission**, you can **resubmit in the Resubmission window**.

7. Submission deadlines

Formative feedback	**Week 12**
Final Submission	**08 – 13 June 2020**
Late submission	**15 – 20 June 2020**

Submit to: Online to the ICON VLE only

Glossary:

Analyse: Break an issue or topic into smaller parts by looking in depth at each part. Support each part with arguments and evidence for and against (Pros and cons)

Critically Evaluate/Analyse: When you critically evaluate you look at the arguments for and against an issue. You look at the strengths and weaknesses of the arguments. This could be from an article you read in a journal or from a text book.

Discuss: When you discuss you look at both sides of a discussion. You look at both sides of the arguments. Then you look at the reason why it is important (for) then you look at the reason why it is important (against).

Explain: When you explain you must say why it is important or not important.

Evaluate: When you evaluate you look at the arguments for and against an issue.

Describe: When you give an account or representation of in words.

Identify: When you identify you look at the most important points.

Define: State or describe the nature, scope or meaning.

Implement: Put into action/use/effect

Compare: Identify similarities and differences

Explore: To find out about

Recommend: Suggest/put forward as being appropriate, with reasons why