**BTEC Assignment Brief**

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| **Qualification** | | Pearson BTEC Level 3 National Extended Diploma in Computing |
| **Unit number and title** | | **Unit 10: Human–Computer Interaction** |
| **Learning aim(s)** (For NQF only) | | **B:** Investigate the human–computer interaction requirements of an identified client  **C:** Develop a human–computer interaction solution to meet client requirements. |
| **Assignment title** | | Digital signs solution, development and testing |
| **Assessor** | | Kris Leeson |
| **Issue date** | | 02.11.22 |
| **Hand in deadline** | | 29.11.22 |
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| **Vocational Scenario or Context** | | You have just joined the software development team of DS Displays, a digital signs solution organisation, as a trainee software developer.  The company specialises in producing digital signs for shopping centres. Your first project is to work on a digital signs solution for AMAP Shopping Centre, Nottingham.  The AMAP Shopping Centre Director would like to improve the shoppers experience by providing an interactive digital sign solution. The digital signs solution will help the shoppers find their way around the shopping centre.  The shopping centre Director would like to ensure that the digital signs solution will be accessible to the needs of all shoppers.    The use interface should be split into 3 parts:  Advertising / promotions/ special events main menus, located in the middle of the screen, offering different categories of shops main menus, located in the middle of the screen, showing different categories of shops and other services and providing user interaction. Layout or blueprint of the shopping centre.  Main menus content is categorised into:   * parking * banks * shopping * food * search * sSpecial offers * disabled access facilities * centre information - Fire escapes * help on how to navigate the interface.   Facilities required:  Customer should be able to select a category e.g. banks and the screen should display all of the banks in the shopping centre.  The user should be able to scroll up and down the screen to see all options e.g.   |  |  | | --- | --- | | Bank | Bank 1  Bank 2  Bank 3 |   User interaction:   * zoom in and out – increase/decrees interface size * access facilities – large text / languages * points of interest clearly identified for all - Fire escapes * current location * search function interactive keyboard * audio feedback |
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| **Task 1** | | It is now time to create the requirements documentation for AMAP Shopping Centre digital signs solution and your manager has asked for a project timescale.    **System design**  Detailed system requirements:   * tasks to be performed * input required – touchscreen and voice * output required – graphics and audio feedback * user needs including accessibility considerations, the purpose of the system and environmental.   Detailed design documentation:   * mood boards for your layout ideas * design solution: * client requirements * hardware and software requirements * detailed flowcharts * annotated storyboards * technical specification for the file formats required bandwidth limitations, target platform * technical designs-code * consideration of design rules.   Evaluate the advantages and disadvantages of the proposed solution and how you have used HCI principal to achieve the shopping centre Director’s needs.  The shopping centre Director would like to review the design and discuss alternative solutions and advantages and the disadvantages of the alternatives. Keep a record of all correspondence and meetings.  Evaluate the advantages and disadvantages of the proposed solution and update your design specification documentation in light of the discussions.  **Develop the HCI solution for the digital signs**  Create a detailed asset table to record the contents of the interface. Consider the use of content created by others, permissions and acknowledging sources.  Make sure that all images are optimised and file formats are compatible and compressed, if required.  Develop the interface using HCI principals.  **Testing**  It is now time to ensure that the solution performs as required. Create a test plan to record the testing process.  You should also obtain feedback from other. Create a questionnaire and analyse the results so that you can make improvements and/or refinements to the solution in response to testing and feedback from others.  **The review of the development process and outcomes**  The review should evaluate the:   * suitability for audience and purpose * ease of use * quality and portability of the solution, can it be accessed on other devices * compatibility with other platforms * legal and ethical considerations in regards to accessibility requirements * impact of the feedback received from others to the design and development process * strengths and weaknesses of the solution.   Evaluate how the implemented solutions could be improved to better meet the needs of the user and fulfil the identified needs.  You should also evaluate your skills, knowledge and behaviour and its impact on your manager in light of:   * your time management and planning * how you used the feedback from your manager * how you behaved on the project - professionalism, etiquette, supportive of others, timely and appropriate leadership, accountability * evaluating your recommendations and decisions evaluated targets to obtain insights into own performance. |
| **Checklist of evidence required** | | Detailed system requirements  Detailed design documentation that includes:   * mood boards for your layout ideas * design solution: * client requirements * hardware and software requirements * detailed flowcharts * annotated storyboards * technical specification * technical designs-code * consideration of design rules.   Proposed solution evaluation  Record of meetings  Detailed asset table  Test plan and feedback from others/questionnaire  Development process review. |
| **Criteria covered by this task:** | | |
| Unit/Criteria reference | To achieve the criteria you must show that you are able to: | |
| 10/BC.D2 | Evaluate the design and optimised human– computer interaction solution against the client’s requirements. | |
| 10/BC.D3 | Demonstrate individual responsibility, creativity and effective selfmanagement in the design, development and review of a human–computer interaction solution. | |
| 10/B.M2 | Justify the design decisions, explaining how they will meet client requirements. | |
| 10/C.M3 | Optimise the human– computer interaction solution to meet client requirements. | |
| 10/B.P3 | Produce designs for a human–computer interaction solution which meets client requirements. | |
| 10/B.P4 | Review the designs of a human–computer interaction solution with others to identify and inform refinements. | |
| 10/C.P5 | Produce a tested human– computer interaction solution to meet client requirements. | |
| 10/C.P6 | Review the extent to which the human–computer interaction solution meets client requirements. | |
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| **Sources of information to support you with this Assignment** | | Python programming tutorial  <https://www.youtube.com/watch?v=4Mf0h3HphEA&list=PLEA1FEF17E1E5C0DA>  Visual basic programming tutorial  <https://www.youtube.com/watch?v=XMLAXQR_YFI&list=PLS1QulWo1RIZxHuINmI3EIAjCq3zzsiFy>  Raspberry pi programming  <https://www.youtube.com/watch?v=Rv41GtnsEjk&list=PL-6WIzdGN7xQdIvyCtQUhmflKNsidxfwX>  Arduino tutorial  <https://www.youtube.com/watch?v=fCxzA9_kg6s&list=PLA567CE235D39FA84> |
| **Other assessment materials attached to this Assignment Brief** | | For this unit, learners must have access to technological resources that will allow them to apply the practical principles of human–computer interaction. These may include:   * graphic software * appropriate development/coding environment for producing interactive functionality, e.g. Visual basic®, Python® * prototyping boards, e.g. Raspberry Pi®, Arduino® * specialised input/output devices.   Any layout or blueprint of the shopping centre can be used. |