Coding and Software Development Bootcamp

Project Brief

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| Academic Year | 2023-2024 |
| Unit Tutor | Peter Moore |
| Assignment Title | Creating a Software Solution |
| Issue Date | 14-Mar-2024 |
| Submission Date |  |
| Submission Format | |
| Program Source Code – annotated/commented source should be produced within the Python programming language (E.G .py file). Implemented program (final working version) in a format suitable to be run and assessed for functionality.  A written report to identify and define the user requirements and general flow of the developed solution, along with future modifications and evaluation of the solution.  The report will also clearly explain the way the application works along with justifications as to the decisions made during the development of the application.  The recommended word limit is a maximum of 2,000 words, although you will not be penalised for exceeding the total word limit.  In addition a 10-15 minute presentation is required, providing a summary of the report along with a demonstration of the final solution.  You are required to make use of headings, paragraphs and subsections as appropriate, and all work must be supported with research and referenced using the Harvard referencing system.  All code files need to be attached to the assignment. | |
| Unit Learning Outcomes | |
| Development of software documentation including user requirements and flowcharts  Implementation of coding using an appropriate IDE  Implementation of Python programming language code | |
| **Project Requirements** | |
| You have just started a new role as a Software Developer at Grantham Digital Solutions (GDS), an independent software development company that designs and builds bespoke software solutions for various companies of different sizes that cover a range of different industries.  The software that they design uses a wide range of technologies, from simple stand-alone programs to large web-based applications. GDS has been approached by a small, local company – North Lincolnshire Judo – that specialises in providing judo training sessions to people from the local community.  North Lincolnshire Judo caters to people of all ages and experience, from expert to beginner. North Lincolnshire Judo has requested a simple program that will calculate the cost of training fees for their athletes each month.  The CEO of the company has reviewed the client requirements and has determined that this is a suitable project for you to take on. The company wants to see how you use and apply the GDS development environments and code standards.  The requirements are that North Lincolnshire Judo wants a program that will allow a user to enter the following information:   * athlete name * training plan * current weight in kilograms (kg) * competition weight category * number of competitions entered this month * option to add the number of hours private coaching   For each athlete, the program should then output the following information:   * the athlete’s name * an itemised list of all costs for the month * the total cost of training and competitions for the month * how their current weight compares to their competition weight category.   North Lincolnshire Judo currently have six athletes enrolled on their training program, but they would like the ability to register more. You should use the additional information on the next page to help you when developing your program.  The client has not specified any Graphical User Interface, but the CEO has left the design of the program completely up to you.  Once the program has been built, the CEO has asked you to report back to them on how you designed and developed the code required.  As part of your report, the CEO wants you create a presentation for the development team showing the development process, as well as the final solution.  **Continued on Next Page**  **Additional information**     * Athletes can receive a maximum of five hours’ private coaching a week * Only Intermediate and Elite athletes can enter competitions * Competitions are held on the second Saturday of each month * All prices and costs should be displayed as currency to two decimal places * The program deals with user error by displaying suitable messages to the user and then prompting them for another go * North Lincolnshire Judo assumes that a month consists of four weeks | |
| Project Outputs and Guidance | |
| Report and Programming:  You are required to develop a program for North Lincolnshire Judo that makes use of appropriate Python code to fulfil the given client requirements. You should make use of whichever tools and techniques are most appropriate for your chosen coding paradigm and for the nature of the software solution.  You are to write a report that details the process that would be required to design the algorithm for the solution and how you turned the algorithm into a working application.  Your report should include the following:   * Identification of user requirements, using a standard methodology * An outline of the steps required to build the application * Outline of the program flow using appropriate charts with industry standard symbology * An analysis of the possible challenges you have faced during the development process * An explanation of the coding standards you used in your source code * An overall evaluation as to how well the final solution meets with the original user requirements * Any future work requirements   You will include your final, annotated source code and working application as part of your report.  Presentation:  Produce a formal presentation (with supporting notes) for GDS that provides a summary of the report, including a demonstration of your final solution.  Your presentation should include:   * a brief description of the IDE chosen for this project * an explanation of the development process * an explanation of the program flow * an evaluation of the project | |