Requirements Specification Report

By

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# **Overview**

The client is Glasgow Runners Club who currently hold finals for the following races: 400m, 800m and 1500m. Once the finals are run, the Glasgow runners club keeps track of runners' first name, last name and time taken to run their race. They would now also like to record and save the following information: slowest recorded time, fastest recorded time, ordered list of time from slowest to the fastest, search for a time and the number of times a particular time was achieved. The system they currently have is a text-based system and thus recording the additional information is not possible. Therefore, they would like to move everything to a software-based system which will allow them to carry out additional tasks with ease. They want the application to be user friendly by including a menu interface which allows the user to make a choice based on the actions they would like to take. This will allow the non-technical staff to use the software.

They want the software to be robust and work with their current hardware rather than having to upgrade. Therefore, they want the software to be as lightweight as possible. They also want the application to be software protected. We are asked to create a trial program based on recorded results of the 400m final races. If everything is successful and the program runs as required, then they would like to expand to include the 800m and 1500 races.

# **Functional Requirements**

Functional requirements are the basic functionality the end user demands, and all functionality needs to be incorporated into the system to adhere to the contract with the client.

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| ID | Functional Requirement |
| 1. | The software must be password protected so that only authorised personnel can use the app |
| 2. | It must incorporate a menu interface that allows the user to make choices based on the actions they would like to take. |
| 3. | It must be able to extract information from text file and save the first name, last name and time taken to run the race. And display the result to the user. |
| 4. | It will incorporate sort algorithm which will sort the recorded time from slowest to the fastest. This information will be outputted to another text file with suitable name. Also, the output will be displayed to the user |
| 5. | It will also record the slowest and fastest recorded time from the recorded result and output this information into separate files with suitable name. The result will also be outputted to the user. |
| 6. | It will also allow for linear search to see if the time entered by the user has been recorded for the 400m race. |
| 7. | It will also ask the user to enter a time and return the number of times it was recorded in the race. The result will be outputted to another file with suitable name as well as to the user. |

# **Non-Functional Requirements**

Non-Functional requirement does not relate to functionality of the system but rather to attributes such as efficiency, usability, maintainability and portability.

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| ID | Non-Functional Requirement |
| 7. | The software to be robust and able to meet the demands of the task |
| 8. | The placement of the company logo to be present in the app |
| 9. | the app needs to be lightweight, fast and reliable. |
| 10. | The app needs to be user friendly so that even non-technical staff can use it. |

# **Constraints**

A constraint is a restriction on the degree of freedom you have in delivering the solution. This can be financial, technical, team resources or the system itself. The constraints for this project will firstly be the cost which be £10,000 for the entire project. Therefore, it is essential that all the resources we use in terms of work and material needs to be factored into the final solution. Another constraint is that the system needs to work with the current system of the client. Also, the project needs to begin on February 1st, 2024, and be completed by March 31st, 2024.

# **Recommendation**

I will be using visual studio code as an IDE to implement the code in the java programming language. I will be using the scanner class to get the input from the user, the file class to create and write to file. Also, il be using Arrays class to be able to use static methods like sort to arrange each element of the array from smallest to highest. The program will be implemented by using the waterfall model methodology and only moves onto the next phase once the previous phase is completed.

# **Test Plan**

I will be carrying out a unit test on the login functionality to make sure it is able to handle all the different inputs. This is done so that the program does not crash and works as it is intended. I will also be carrying out dry run to see if the program can be made more efficient and work as intended. The dry run will be carried out on the find the fastest time method to see how many steps it takes to complete the outcome and whether it works as expected.

Also, I will be doing a walkthrough test of the final program to make sure nothing is missed in terms of functionality. I will also be carrying out a black box test to get a perspective as an end user and to see whether the program works as intended and does not crash. This will be carried out as a system test and will go from login to the main menu to read and display task and finally exit the program. In addition, I will also carry out white box tests to make sure all the paths of the program are checked carefully for any bugs or broken code/function.

# **Project Plan**

