**System Maintenance**

System Overview:

The system is made up of 2 main parts. The first is the executable jar file called *PhysicsQuiz*. This is what the user will be interacting with. The second is the web server application. This will run a server locally on the host PC that has the database needed for the program.

Language:

The software has been programmed in Java 7, and the database is a MySQL database.

Third Party Software:

The web server used is *UsbWebServer*, developed by Border-IT. The database file is located in WebServer\mysql\data\pastpapers. To access and edit the database, simply run the usbwebserver.exe and click on phpmyadmin. This will open up a page in your default web browser where you can log in to the database and edit the data, if necessary.

In the .jar file, alongside the main classes are the classes from mysql-connector-java-5.1.34-bin.jar, which are the driver classes for the jdbc specific to mysql. These ensure that the program can connect to the database.

Structure of the code:

The code consists of 3 java class files. The main file is *PhysicsQuiz*.*class*, and this has 8 main methods. The first, *PhysicsQuiz* is simply the start, and only serves to run the *mainMenu* method which is what displays the menu the user first sees, and links to all the other methods through the *actionPerformed* method. The *actionPerformed* method will look at what button is being pressed and respond appropriately.

The methods *Test*, *getTopicQuestions* and *getTopicAnswers* each get the questions and answers from the database and store them in arrays. *displayNextQuestion* is what takes the questions from the array and displays them for the user to see, and moves to the next when the user clicks next. Answers and Results are what make up the feedback par toff the software. *Answers* compares the user’s answers to the answers from the database and will total a score. *Results* displays the results and the incorrect answers.

List of variables:

This is the list of variable names and their purpose in the code:

*questionNo* – An integer used for identifying questions in the array.

*score* – The integer that indicates how many questions the user got correct.

*random* – A random integer used to select questions at random for the test.

*multirandom ­*– A random integer used to randomly arrange the multiple choice answers.

*username* – A string that the user inputs for their score to be saved under in the text file.

*content –* A string that is made up of the content of the question.

*marks* – A string made up of the number of marks the question is worth.

*type* – A string that determines the type of the question, either multiple choice or calculation.

*id* – An integer that is unique to each question and corresponding multiple choice answer. It is used to select specific ones easily.

*answer1, answer2, answer3* – 3 Strings that are all alternate answers ot a multiple choice question.