

### Galamsey Project Reflective Report

This Galamsey project has broadened my knowledge of programming in java. I have now learnt how to connect my java program to a database using MySQL workbench, to execute queries and update the tables in a database. The first version of the project was not as difficult as the second because we only made use of scanners and printed a menu to users on the console using regular print statements. The second version however involved creating GUI using JavaFX and took 70 percent of the time used for the entire project. I had to setup JavaFX on my IDE (IntelliJ) which was not as easy as I thought because JavaFX no longer comes with my version of java (11.6), so I needed to go through some extra steps before I could configure JavaFX to run on IntelliJ. I then had to familiarize myself with the JavaFX syntax which is another skill I have picked up during this project. Fortunately, JavaFX is not too difficult to use especially for the kind of project this is.

Another part of the project that was quite challenging was connecting JavaFX to the database. I was using MySQL workbench, so I had to install a MySQL-Java connector on my PC before I started querying the database. Once I found the ways to perform the basic operations (such as SELECT, DELETE and INSERT) in MySQL using Java, the rest was not too challenging.

Reading from a .csv file was not too difficult; however, the challenge came from when trying to place each value from the .csv file into a Galamsey constructor. The method that reads from a file throws an exception if the file being sought after is not found or if the values in the .csv file are not inserted in the proper format.

#### **Things I would do to improve this project**

- i) I would make the JavaFX UI more user friendly and give the user more options in manipulating the data to generally improve the quality of the user experience.
- ii) I would work on collaborating and partnering with other people to improve the quality of my work, because what I was able to achieve on my own was very limited. Working on this project alone is something I regret doing.
- iii) I would also implement the concept of threading in order to optimize the program and make it more efficient.
- iv) I can also take the project to the next level by using the Google API to observe any potential Galamsey operations.

In the “Observatory” class in this project, I used an “ArrayList” to store Galamsey records in them because, an ArrayList unlike an Array does not have to be of a fixed length. We can add and delete an indefinite number of Galamsey records from an observatory which is why I used an ArrayList to store them instead of a fixed Array. You can also trim an ArrayList to its number of elements to avoid wasting space with empty slots.

In the “Monitoring IO” class in this project, I also used an ArrayList to store the available observatories for the same reasons stated previously.