**ACS 567\_HW1\_Work Plan**

**Application Plan:**

The Java console application that I would be creating is a cricket application consisting of the data fields: id, firstName, lastName, runsScored, year. And would consist of three classes as required by following the object-oriented principles, which are:

1. The Player class which encapsulates the player data. The data fields which this class would maintain are id, firstName, lastName, runsScored, year which would have the identifiers long, String, String, String and String respectively.
2. The DataManager class which is a singleton class that manages the data manipulation, analytics and filtering operations and error handling operations by maintaining and returning a single instance of the class to avoid multiple simultaneous conflicting data operations and stores/manipulates the data from a data.txt file in the same root repository path of the application in a CSV format.
3. The CricketApplication class which would be a driver class and the entry point of the application, which handles user interaction based on the input provided. For example, on running the application the user will be receiving a list of choices like “Enter 0 to read the existing data”, “Enter 1 to add new data into the application”, “Enter 2 to edit the existing data”, “Enter 3 to delete a particular record of the existing data using id”, “Enter 4 to remove all the data in the storage file”, “Enter 5 to view the mean values of the runs scored by the player according to the year”, “Enter 6 to view the median values of the runs scored by the player according to the year”, “Enter 7 to view the filter the records of the player according to the year”. And based on the user’s input the selected operation would be performed and the respective result would be displayed.

**Reflection Summary:**

The plan that was stated above was majorly reused, up to 90% of the plan was re-used and implemented as stated. Minor areas of the plan have been modified to provide ease and effectiveness of the application rather than complication an easy approach, which I have realized during the implementation phase of the application. The only area where the original plan was modified was in the CricketApplication class in which I have realized that the variables in the logic implemented to calculate the mean of the players can be reused to calculate the median, so I have modified the plan to have both mean and median calculated in a single step rather than implementing then in different steps(Step 5 and 6 as mentioned in the plan). Apart from that the plan was highly effective and saved me a lot a time as I usually plan as I code. But this time having a plan ready and just following it saved me a lot of time and have improved the effectiveness and productivity of the application and allocated more time for improvements.

But as previous work plan and requirements intended, I was able to Player class constructor to set the fields and encapsulate all the required data, use the DataManager class to handle all the business logic and operations by making it a singleton class and hence preventing all the simultaneous concurrent updates to the data.txt file and the CricketApplication driver class to handle all the user interactions and perform the appropriate actions and display the required output accordingly.

**Testing:**

Console application:

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**Data displayed: (Select 0)**

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Description automatically generated

**Data Added: (Select 1 and provide the required inputs)**

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Description automatically generated

Testing by reading the new record:

A screen shot of a computer

Description automatically generated

**Data edited: (Select 2 and provide the id of the record to update it with the new values)**

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Description automatically generated

Testing by reading the values:

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Description automatically generated

**Data Deleted with testing: (Select 3 and delete the desired record by providing the id)**

**A screenshot of a computer program

Description automatically generated**

**Data Analysis: (Calculating the mean and median of the runs scored by all the players present in the data.txt file. Select 5 to perform this operation)**

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Description automatically generated**

**Data Filtered: (Enter 6 to filter all the record with the year)**

**A screen shot of a computer program

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**A screen shot of a computer

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