HW4 All Star Baseball

Josh Valentino

CSC 3630

Professor David Lash

10/15/2021

Data Structures:

1. Queue<BaseballObject> Players. A queue of baseball objects that is created in main and populated through the getThePlayers method. The baseball player objects are hard coded in the method.
2. Queue<BaseballObject> tempQ. A queue of baseball objects that is created in the getThePlayers method. It is populated with the baseball player objects and returned to populate the Players queue.
3. Queue<BaseballObject> tempQ2. A queue of baseball objects that is created in the playInning method. It is used to hold the baseball player object that is removed from the Players queue. This object is then removed from the tempQ2 queue and added back to the Players queue.

Object:

The object I created for this assignment is named BaseballObject. The variables it contains are int StartingOrder, String Player, and double BatAvg. StartingOrder is the order that the players start in, which matches to the chart that we were assigned in the HW4 word document. Player is the name of the player. BatAvg is the respective batting average for each player that was also given to us in the assignment word document. These objects are populated into a queue in order to maintain proper order throughout the game.

UML Diagram:

Diagram

Description automatically generated

Explanation of UML:

The program starts by populating the Player queue through method getThePlayers. This method hardcodes BaseballObject objects into tempQ which is returned into Player. After being populated with the correct players that were described in the assignment word document, the game is ready to be played. The playInning method is used inside of a while loop that continues the game until either the user decides to quit or until nine innings are completed. The playInning method takes the player who is at bat and calculates their chance of getting a hit via math.random and the players batting average. It then removes that player from the Players queue and adds it to tempQ2 and it is removed from tempQ2 and readded into the Players queue in queue order. The method continues this process until the inning is over, which is when three outs occur. After the inning is complete the method returns Players to keep the batting order intact. This process continues until the player decides to stop or until nine innings are completed.

Test Cases:

**#1: Shows 4 complete innings, with 1 run**

Text

Description automatically generated

Text

Description automatically generated

**#2: Shows invalid input resolution**

**Text

Description automatically generated**

**#3: Shows 9 complete innings**

**Text

Description automatically generated**

**Text

Description automatically generated**

**Text

Description automatically generated**