ArrayList – class GameAccount

The GameAccount class is used to store information about players of an online game. A partial declaration of the GameAccount class is shown.

```
public class GameAccount {

    /**
     * Returns the username of the player
     */
    public String getUsername()
    { /* implementation not shown */ }

    /**
     * Returns the age of the player
     */
    public int getAge()
    { /* implementation not shown */ }

    /* There may be instance variable, constructors,
       and methods that are not shown */

}
```

The GamePlatform class maintains an ArrayList of GameAccount objects named allPlayers. A partial declaration of the GamePlatform class is shown.

```
public class GamePlatform {

    /** An ArrayList of all player accounts */
    public ArrayList<GameAccount> allPlayers;

    /**
     * Returns the average age of players in allPlayers whose age
     * is between 13 and 19, inclusive.
     * Preconditions: allPlayers contains at least one player
     *                whose age is between 13 and 19.
     *                allPlayers is not null and contains no null
     *                elements.
     * Postcondition: allPlayers is unchanged.
     */

    public double avgTeenAccounts()
    { /* to be implemented */ }

    /* There may be instance variable, constructors,
       and methods that are not shown */

}
```

Write the GamePlatform method avgTeenAccounts. The method should return the average age of the players in allPlayers whose age is between 13 and 19, inclusive.

For example, suppose allPlayers has the following contents:

Username	"star_guy"	"a_knight"	"dino_dan"	"cool_cat"	"happy_hero"	"fox_sox"
Age	23	14	12	15	13	19

For these contents of allPlayers, the method avgTeenAccounts should return 15.25. There are four players whose age is between 13 and 19, inclusive ("a_knight", "cool_cat", "happy_hero", and "fox_sox". The average age of these four players is: (14 + 15 + 13 + 19) / 4, which is 15.25.

ArrayList – class GameAccount

```
import java.util.ArrayList;

public class GamePlatform {

    /** An ArrayList of all player accounts */
    public ArrayList<GameAccount> allPlayers;

    /**
     * Returns the average age of players in allPlayers whose age
     * is between 13 and 19, inclusive.
     * Preconditions: allPlayers contains at least one player
     *                whose age is between 13 and 19.
     *                allPlayers is not null and contains no null
     *                elements.
     * Postcondition: allPlayers is unchanged.
     */
    public double avgTeenAccounts() {

        int sum = 0;
        int count = 0;

        for(GameAccount p : allPlayers) {
            int age = p.getAge();
            if(age >= 13 && age <= 19) {
                sum += age;
                count++;
            }
        }
        return (double)sum / count;
    }

    public GamePlatform() {
        allPlayers = new ArrayList<>();
    }

    public boolean addAccount(GameAccount g) {
        return allPlayers.add(g);
    }

    public String toString() {
        String s = "";
        for(GameAccount g : allPlayers) {
            s+= "  " + g.toString() + "\n";
        }
        return s;
    }

    public static void main(String[] args) {

        GamePlatform gp = new GamePlatform();

        gp.addAccount(new GameAccount("star_guy",  23));
        gp.addAccount(new GameAccount("a_knight",  14));
        gp.addAccount(new GameAccount("dino_dan",  12));
        gp.addAccount(new GameAccount("cool_cat",  15));
        gp.addAccount(new GameAccount("happy_hero",13));
        gp.addAccount(new GameAccount("fox_sox",   19));

        System.out.print("allPlayers:\n" + gp);
        System.out.println("Average age of teens: " +
                           gp.avgTeenAccounts());

    }
}
```