

# Start Document for Football

Start Document of **Jadyn Samuel Jacques**. Student number: **4977920**.

## Problem Description

A number of skaters take part in a skating championship. The following distances are skated consecutively: 500 metres, 1500 metres, 5000 metres and 10000 metres. Times are registered precisely to hundredths of seconds. The time achieved for the various distances is converted into points by reducing each time to a 500 metre time. The skater with the lowest total number of points wins the championship. A program must be developed in which the name and times (format mmsshh) can be entered for each consecutive competitor. The points total of each skater must then be calculated and shown, as well as who the winner is.

## Inputs, Outputs & Calculations

### Inputs:

| Case               | Type    | Conditions  |
|--------------------|---------|-------------|
| Player Name        | String  | Not Empty   |
| Player Nationality | String  | Not Empty   |
| Player Age         | integer | 0 <= number |
| Player Number      | integer | 0 <= number |
| Distance           | integer | 0 <= number |
| Time               | double  | 0 <= number |

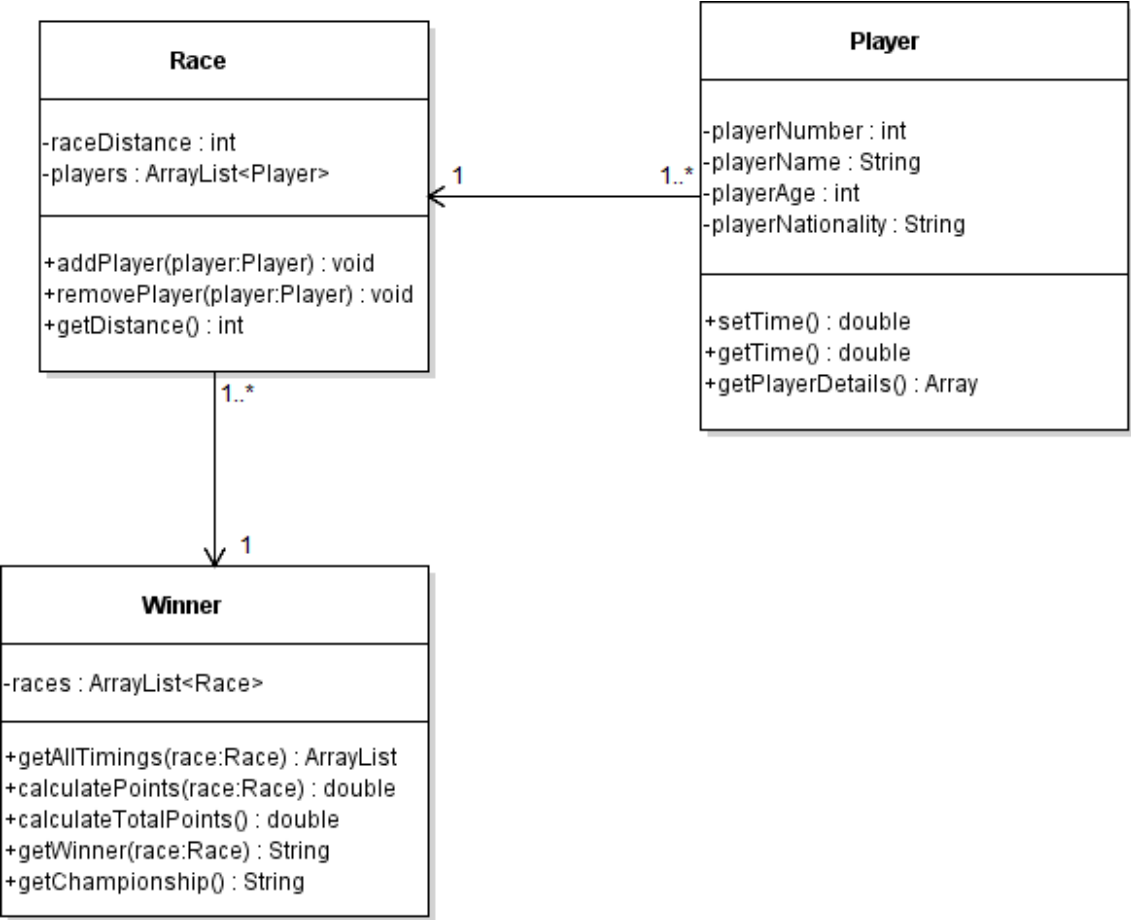
### Outputs:

| Case           | Type              |
|----------------|-------------------|
| Player Details | ArrayList<Player> |
| Race Details   | ArrayList<Race>   |
| Time           | double            |
| Points         | double            |

### Calculations

| Case                          | Calculation                                     |
|-------------------------------|---|
| Points per each race          | Sum of all the points for each player per race  |
| Total Points                  | Sum of all the points of all races              |
| Winner per each race          | Player with the least amount of points per race |
| Overall Winner / Championship | Player with the least amount of points in total |

Class Diagram



Test Plan

Test Data

Player name

| ID | Input        | Code                                    |
|----|--------------|---|
| 1  | Player: John | addPlayer("John, Portuguese, 18, 1234") |
| 2  | Player: Matt | addPlayer("Matt, American, 21, 5678")   |

Race time

| ID | Input                                     |
|----|---|
| 1  | name: John Time: 48:382 Distance: 500     |
| 2  | name: Matt Time: 51:719 Distance: 500     |
| 3  | name: Matt Time: 06:09:420 Distance: 5000 |
| 4  | name: John Time: 07:10:246 Distance: 5000 |

Test Cases

#1 Checking for Players in dfferent teams.

| Step | Code               | Expected Output |
|------|--------------------|-----------------|
| 1    | getPlayerDetails() | John, Matt      |

#2 Checking race times for a certain race.

| Step | Code                     | Expected Output                                    |
|------|--------------------------|--|
| 1    | getAllTimings(race:Race) | John - 48:382 - 500m, Matt - 51:719 - 500m         |
| 2    | getAllTimings(race:Race) | John - 07:10:246 - 5000m, Matt - 06:09:420 - 5000m |

#3 Calculating points for certain race.

| Step | Code                       | Expected Output                              |
|------|----------------------------|--|
| 1    | calculatePoints(race:Race) | John - 48.382 - 500m, Matt - 51.719 - 500m   |
| 2    | calculatePoints(race:Race) | John - 42.613 - 5000m, Matt - 36.942 - 5000m |

#4 Checking which player won a certain race.

| Step | Code                 | Expected Output |
|------|----------------------|-----------------|
| 1    | getWinner(race:Race) | John - 500m     |
| 2    | getWinner(race:Race) | Matt - 5000m    |

#5 Calculating total number of points.

| Step | Code                   | Expected Output              |
|------|------------------------|------------------------------|
| 1    | calculateTotalPoints() | John - 90.995, Matt - 88.661 |

#6 Checking which player won overall.

| Step | Code              | Expected Output |
|------|-------------------|-----------------|
| 1    | getChampionship() | Matt            |