# First Season

## Requirements

* Each **tournament** has a **difficulty value**
* Each **tournament** has prize money to every players that reaches the **top eight**
* Each **tournament** has 2 competitions for both **Men** and **Women** Singles
* Each **place** in the **top sixteen** is awarded a **number of ranking points**.

## System Input

* Input **Score** for each **match** for a given **tournament**.
  + This updates the players position, ranking points
  + This calculates each players ranking points and produces a list in descending order:
    - (1st place to 16th place)

## Assumptions

* In **calculating the rating points**, the standard **tournament place points** will be **multiplied** by the **degree of difficulty**.
* Each **match’s score** **must** be **represented as**:
  + “Player A, number of sets A, Player B, number of sets B”.
* The **winner** is the player that has **won three set in the men’s game** or **two sets in the women’s game**.
* Scores should be **either read from a file** or **entered manually** from the prompt. *A simple User Interface with a menu selection should be offered.*

## Tasks

* Identify and justify what type of data structures you will use for storing the data
* Design a solution for ranking players according to the points they have earned *(pseudo code)*
* Implement the solution for ranking players according to points earned (Python Code)
* Explain the algorithm implemented and justify its choice
* Design a further solution that ranks the payers based on prize money earned *(pseudo code)*
* Implement the additional solution in task 5 using Python.
* Discuss and justify your choice of entering match results

## Data (1st Season)

|  |  |  |  |
| --- | --- | --- | --- |
| players | count | | |
| male | 32 | | |
| female | 32 | | |
| Tournament Name | **DIFFICULTY** | **PRIZE MONEY** (TOP 8) |  | |
| TAC1 | 2.7 | #1: £1,000,000  #2: £500,000  #3-#4: £250,000  #5-#8: £75,000 |  | |
| TAE21 | 2.3 | #1: £1,000,000  #2: £450,000  #3-#4: £225,000  #5-#8: £80,000 |  | |
| TAW11 | 3.1 | #1: £1,250,000  #2: £600,000  #3-#4: £300,000  #5-#8: £100,000 |  | |
| tbs2 | 3.25 | #1: £1,375,000  #2: £700,000  #3-#4: £350,000  #5-#8: £150,000 |  | |
| ranking points | **PLACE POSITION** | | |
| 100 | 1 | | |
| 50 | 2 | | |
| 30 | 3, 4 | | |
| 10 | 5, 6, 7, 8 | | |
| 5 | 9, 10, 11, 12, 13, 14, 15, 16 | | |