

Introduction

You have completed all the modules in this training. Now, it's time for you to apply your knowledge to create an application in Python. Read the scenario below and then respond to the problem statement described.

Scenario



Fantasy Cricket

It is an online game where you create a virtual team of real cricket players and score points depending on how your chosen players perform in real life matches. To win a tournament, you must try and get the maximum points and the No. 1 rank amongst other participants. Here's how a Fantasy Cricket game may look like.

ManageTeams

Your Selections

Batsmen (BAT) ## Bowlers (BOW) ## Allrounders (AR) ## Wicket-keeper (WK) ##

Points Available ####

☐ BAT ☐ BOW ☐ AR ☐ WK

Points Used ####

Team Name [Displayed Here](#)

>

1 - Opening screen of the application. You can see the players of each category by selecting the category. To begin with, the selection is disabled until a new team is created from the Manage Teams menu. A pop up asking the name of the team appears.

ManageTeams

NEW Team
OPEN Team
SAVE Team
EVALUATE Team

Bowlers (BOW) ## Allrounders (AR) ## Wicket-keeper (WK)

Points Available ####

☐ BAT ☐ BOW ☐ AR ☐ WK

Points Used ####

Team Name [Displayed Here](#)

>

2 - The toolbar menu options which allow you to create a new team, open an existing team, save your team and finally evaluate the score of a saved team.

ManageTeams

Your Selections

Batsmen (BAT) 0

Bowlers (BOW) 0

Allrounders (AR) 0

Wicket-keeper (WK) 0

Points Available 1000

☒ BAT
 ☐ BOW
 ☐ AR
 ☐ WK

Virat Kohli
 Shikhar Dhawan
 Rohit Sharma
 Ajinkya Rahane
 Yuvraj Singh

>

Points Used 0

Team Name Internshala11

3 - After clicking New Team, the left box is populated with player names. As you select a different category, the corresponding list of players is displayed.

ManageTeams

Your Selections

Batsmen (BAT) 4

Bowlers (BOW) 3

Allrounders (AR) 3

Wicket-keeper (WK) 1

Points Available 50

☒ BAT
 ☐ BOW
 ☐ AR
 ☐ WK

Rohit Sharma

>

Points Used 950

Team Name Internshala11

Virat Kohli
 Shikhar Dhawan
 Ajinkya Rahane
 Yuvraj Singh
 Bhuvneshwar Kumar
 Umesh Yadav
 Kedar Jadhav
 Hardik Pandya
 M.S.Dhoni
 Ravindra Jadeja
 Jasprit Bumrah

4 - On double-clicking each player name, the right box gets populated. Points available and used are displayed accordingly.

ManageTeams

Your Selections
 Batsmen (BAT) 4 Bowlers (BOW) 3 Allrounders (AR) 3 Wicket-keeper (WK) 1

Points Available 50 Points Used 950

☐ BAT ☐ BOW ☐ AR ☒ WK

Available Players: Dinesh Karthik

Selected Team: Internshala11

Selected Players: Virat Kohli, Dhawan, Rahane, Singh, Bhawar Kumar, Yadav, Kedar Jadhav, Hardik Pandya, M.S.Dhoni, Ravindra Jadeja, Jasprit Bumrah

Error Message: You can't select more than one wicket-keeper.

5 - Message if the game logic is not followed

ManageTeams

Your Selections
 Batsmen (BAT) 4 Bowlers (BOW) 3 Allrounders (AR) 3 Wicket-keeper (WK) 1

Points Available 50

Available Players: Dinesh Karthik

Dialog: Evaluate the Performance of your Fantasy Team

Select Team: Internshala11
 Select Match: Match1, Match2, Match3, Match4, Match5, Match6

Calculate Score

6 - Pop-up on clicking Evaluate Score. You can select your team here and the match for which the players' performance is compared.

ManageTeams

Your Selections
 Batsmen (BAT) 4 Bowlers (BOW) 3 Allrounders (AR) 3 Wicket-keeper (WK) 1

Points Available 50

Available Players: Dinesh Karthik

Dialog: Evaluate the Performance of your Fantasy Team

Select Team: Internshala11 Select Match: Match3

Players	Points
Virat Kohli	58
Shikhar Dhawan	76
Ajinkya Rahane	34
Yuvraj Singh	43
Bhuvneshwar Kumar	21
Umesh Yadav	87
Kedar Jadhav	43
Hardik Pandya	26
M.S.Dhoni	56
Ravindra Jadeja	12

Points: 456

Calculate Score

7 - The final score for your fantasy team based on the match selected.

Problem Statement

Create a Fantasy Cricket game in Python. The game should have all the features displayed in the mock-up screens in the scenario. To calculate the points for each player, you can use rules similar to the sample rules displayed below.

Sample of Rules

Batting

- 1 point for 2 runs scored
- Additional 5 points for half century
- Additional 10 points for century
- 2 points for strike rate (runs/balls faced) of 80-100
- Additional 4 points for strike rate > 100
- 1 point for hitting a boundary (four) and 2 points for over boundary (six)

Bowling

- 10 points for each wicket
- Additional 5 points for three wickets per innings
- Additional 10 points for 5 wickets or more in innings
- 4 points for economy rate (runs given per over) between 3.5 and 4.5
- 7 points for economy rate between 2 and 3.5
- 10 points for economy rate less than 2

Fielding

- 10 points each for catch/stumping/run out

Database Design

For the database, you are required to use three tables – match, stats and teams.

match

Player	Scored	Faced	Fours	Sixes	Bowled	Maids	Given	Wkts	Catches	Stumpings	RO*

*Run Out

teams

name	players	value

stats

player	matches	runs	100s	50s	value	ctg

Note: The teams table will be populated after score calculation. The data to enter in the remaining two tables is given below:

player	scored	faced	fours	sixes	bowled	maiden	given	wkts	catches	stumping	ro	value	matches	runs	100s	50s	ctg
Kohli	102	98	8	2	0	0	0	0	0	0	1	120	189	8257	28	43	BAT
Yuvraj	12	20	1	0	48	0	36	1	0	0	0	100	86	3589	10	21	BAT
Rahane	49	75	3	0	0	0	0	0	1	0	0	100	158	5435	11	31	BAT
Dhawan	32	35	4	0	0	0	0	0	0	0	0	85	25	565	2	1	AR
Dhoni	56	45	3	1	0	0	0	0	3	2	0	75	78	2573	3	19	BAT
Axar	8	4	2	0	48	2	35	1	0	0	0	100	67	208	0	0	BWL
Pandya	42	36	3	3	30	0	25	0	1	0	0	75	70	77	0	0	BWL
Jadeja	18	10	1	1	60	3	50	2	1	0	1	85	16	1	0	0	BWL
Kedar	65	60	7	0	24	0	24	0	0	0	0	90	111	675	0	1	BWL
Ashwin	23	42	3	0	60	2	45	6	0	0	0	100	136	1914	0	10	AR
Umesh	0	0	0	0	54	0	50	4	1	0	0	110	296	9496	10	64	WK
Bumrah	0	0	0	0	60	2	49	1	0	0	0	60	73	1365	0	8	WK
Bhuvaneshwar	15	12	2	0	60	1	46	2	0	0	0	75	17	289	0	2	AR
Rohit	46	65	5	1	0	0	0	0	1	0	0	85	304	8701	14	52	BAT
Kartick	29	42	3	0	0	0	0	0	2	0	1	75	11	111	0	0	AR

Hint: If you are wondering where to start and how to plan your work, here are some suggestions.

- First, create the database of players. Plan the required tables and add data to your database.
- Next, create the GUI. Generate the required Python code for the UI.
- Finally, populate the Python code generated in step ii with more attributes and method definitions (action listeners).

Assignment Submission

Your submission should have fully functional code with the required modules, packages and database files. These should be submitted as an archive file. The key elements that should be present in your submission are:

- The main application code
- A Database of cricket players and their relevant stats
- The application .ui file

Project Evaluation Criteria

The following criteria will be used to evaluate your project submission.

Elements	Categories	Criteria
Application		

	Flow	Populate left list widget from database as per category radio button clicked
		Add players from players list to selected players list
		Remove players from selected players list to players list
		Show error if selection criterion is violated
		Calculate team score
	UI	Widgets should be placed symmetrically
Code		
	Naming Convention	Meaningful variable names
		Meaningful function names
	Modularity	A single function should be used for a single task/No code repetition (make generalized functions)
	Error Handling	Implement error handling wherever required
Database Design		
	Tables	Number of tables
		Column names
		Data types
		Data