Assignment 2 – GUI and Database Programming

Total Points: 5

General Instructions: You must use the Python template files, located within `Assign` subfolder of the `06_DB_Program` folder, and then follow the general instructions shown below and the problem specific notes provided in the comments of the files themselves. The conversion problem significantly deviates from the original textbook problem, so just following the textbook will not produce the desired result.

You must follow the additional instructions provided in the notes for each of the problems. The assignment will be graded primarily on whether the program runs and produces the correct result. If the script does not run, this will result in a 1-point deduction for that program. Partial credit will be awarded based on the degree of problem completion and will depend heavily on how accurately you followed the instructions provided in the notes for the problem.

As you work through this assignment, execute each program carefully, and verify you got the correct results using the provided test cases. For any errors you encounter, you are expected to try to resolve them yourself first. If, after repeated attempts, the script does not work, message me or the TA and consider coming to office hours.

Problem 4: Temperature Conversion

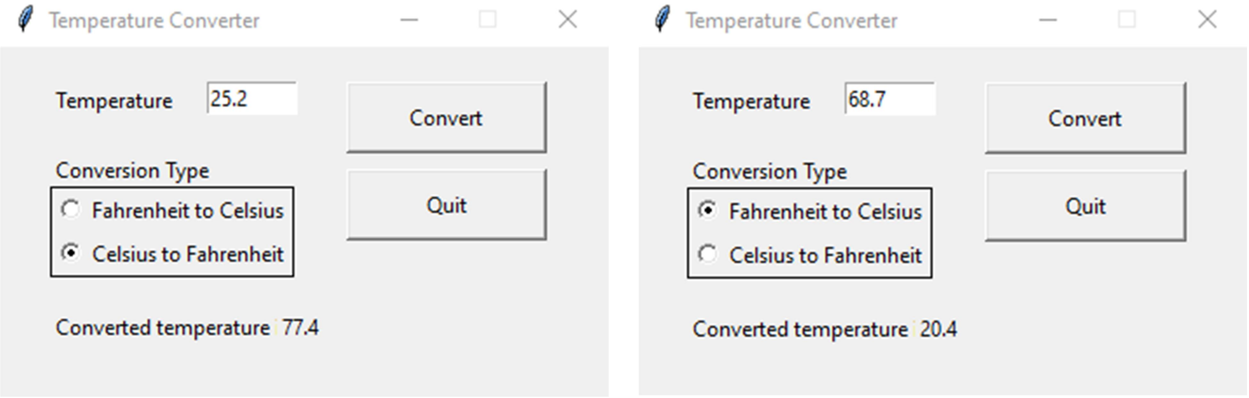
Chapter 13, page 714, **(2.5 points)**

File name: **`Assign2_04_C-F_Convert.py`**

The following table has the details on widget types, names, text, positions, and other parameters. Also, use the screenshots below to guide your design.

Type	Name	Text	Position	Other
Window	main_window	Temperature Converter		
Label	label_temp	Temperature	(30, 20)	
Label	label_convert_type	Conversion Type	(30, 60)	
Label	label_result	Converted temperature	(30, 150)	
Entry	entry_temp		(120, 20)	width: 8
Frame	frame_convert_type		(30, 80)	
IntVar	convert_type			set to: 1
Radiobutton	rb_FC	Fahrenheit to Celsius	pack it	variable: convert_type value: 1
Radiobutton	rb_CF	Celsius to Fahrenheit	pack it	value: 2
Button	button_convert	Convert	(200, 20)	height: 2; width: 15 command: convert_temp
Button	button_quit	Quit	(200, 70)	
StringVar	convert_temp			
Label	label_convert_temp		(160, 150)	textvariable: convert_temp

Your output should look like this:



Temperature 25.2
Conversion Type
○ Fahrenheit to Celsius
● Celsius to Fahrenheit
Converted temperature 77.4

Temperature 68.7
Conversion Type
● Fahrenheit to Celsius
○ Celsius to Fahrenheit
Converted temperature 20.4

MLB Teams and Players

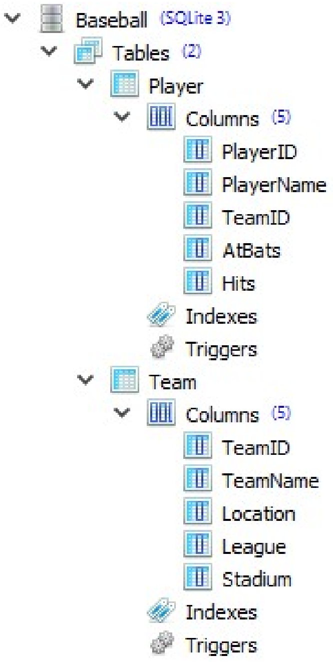
Chapter 14, **(2.5 points)**

File name: **Assign2_Teams_Players.py**

The following table has the details on listbox and table widgets you need to complete the design. Also, use the screenshot below to guide your design.

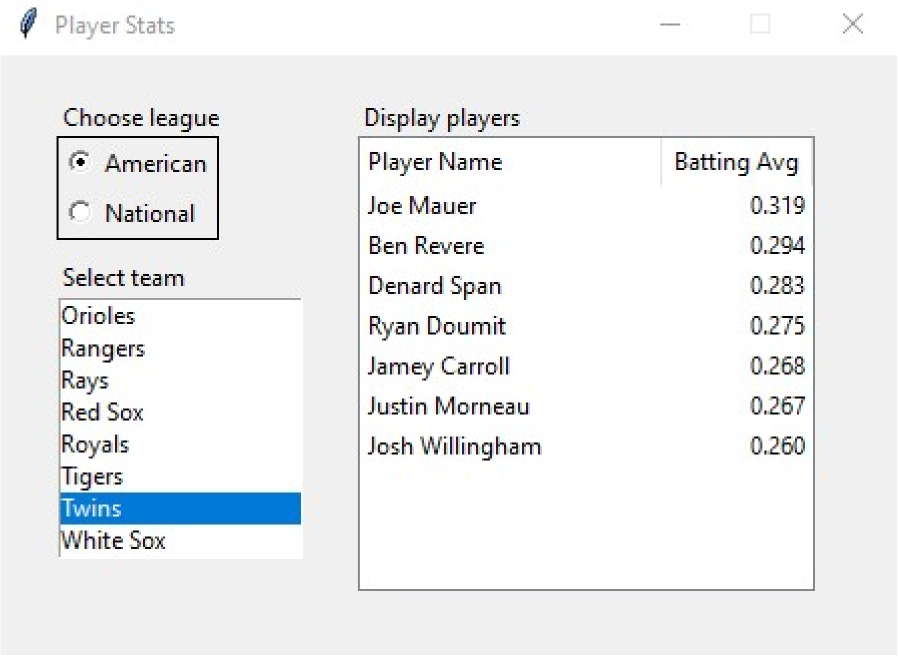
Type	Name	Parameters	Position	Other
Listbox	listbox_teams	SINGLE select mode	(30, 120)	height: 8, width: 20
Treeview table	table_players	column_ids:('player', 'bat_avg')	(180, 40)	height: 10

Baseball.db



- Baseball (SQLite 3)
  - Tables (2)
    - Player
      - Columns (5)
        - PlayerID
        - PlayerName
        - TeamID
        - AtBats
        - Hits
      - Indexes
      - Triggers
    - Team
      - Columns (5)
        - TeamID
        - TeamName
        - Location
        - League
        - Stadium
      - Indexes
      - Triggers

Your output should look like this:



Player Stats

Choose league

● American

○ National

Select team

Orioles
Rangers
Rays
Red Sox
Royals
Tigers
Twins
White Sox

Display players

Player Name	Batting Avg
Joe Mauer	0.319
Ben Revere	0.294
Denard Span	0.283
Ryan Doumit	0.275
Jamey Carroll	0.268
Justin Morneau	0.267
Josh Willingham	0.260

Baseball.sql

SQL code for getting American league teams into the listbox:

```
SELECT TeamName
FROM Team
WHERE League='American'
```

SQL code for getting Twin's player names and batting averages into the Treeview table:

```
SELECT PlayerName, Hits/AtBats AS BatAvg
FROM Team INNER JOIN Player
  ON Team.TeamID = Player.TeamID
WHERE TeamName='Twins'
ORDER BY BatAvg DESC
```

Submission: You must submit both Python and the single database file, so three (3) files altogether, zipped up into a single folder on Canvas by the designated due date. Failing to include the database file will result in 0.5 point deduction off the top.