**Python**

class **Final**

**Description:**

This class was created as part of the tournament system and it is a final stage of the football tournament and matryoshka pattern.

Namespace**: FootballObj.**

**Properties:**

| **\_\_init\_\_**(self, match) | This function assigns the value of the match argument to the matches attribute of the class |
| --- | --- |
| **proceed**(self, data) | Reads data and returns the current object |
| **readData**(self, data) | Reads data and saves it to current matches |
| self**.matches** | List of current matches in object  “matches” preferred value type is **list(Match)** |

class **FirstTour**

**Description:**

First class in matryoshka pattern. Contains list of groups for selection of the best teams. It’s orientated on single use to get to the next stage of football match **Round16.**

Namespace**: FootballObj.**

**Properties:**

| **proceed**(self, data) | This function reads income data and returns Round16 object with data based on parsed data |
| --- | --- |
| **readIncomeData**(self, data) | Parses current data into list of groups |
| self**.\_\_groups** | Contains data for use in proceed function. “\_\_groups” preferred value type is **list(Group)** |

class **Group**

**Description:**

It was created for comfortable data containment. Contains an array of teams for further selection. Used in **FirstTour** for data parse and simplifying code.

Namespace**: FootballObj.**

**Properties:**

| **\_\_init\_\_**(self, data) | Constructor which parses data to teams with their scores. |
| --- | --- |
| **getTwoBestTeams**(self) | This method returns the top two teams from the group based on the number of goals scored. |
| **\_\_str\_\_**(self) | Returns string formatted as f"\nGroup: {[str(i) for i in self.teams]}" |
| self**.teams** | Preferred value type is **list(Team)** |

class **Match**

**Description:**

Contains two teams which will compete with each other. Was created for comfortable data containment.

Namespace**: FootballObj.**

**Properties:**

| **\_\_init\_\_**(self, teams) | Saves current teams and sets their scores to 0. |
| --- | --- |
| **getWinner**(self) | This method returns the team that wins the match based on the number of goals scored.  It compares the number of goals scored by both teams and returns the team with more goals. |
| **\_\_str\_\_**(self) | Returns string formatted as f"\nGroup: {[str(i) for i in self.teams]}"  f"match: {self.teams[0].country} vs {self.teams[1].country}" |
| **convertToSendableData**(self) | Function converts instance to simple data for further use. |
| self**.teams** | Array of two teams type is **list(Team).** |

class **Program**

**Description:**

This class was created to hide and make correct program initialization.

**Properties:**

| self.**currentState** | Current state of the program, which contains the stage of the football tournament. |
| --- | --- |
| **\_\_init\_\_**(self) | On init program creates gui instance and first football stage, **FirstTour,** and makes connection for data receive event |
| **start**(self, file) | Starts html with the name of the file. “file” preferred type is **string** |
| self.**gui** | Contains gui instance |
| **proceed**(self, data) | Changes the current state of football matches. |
| self.**currentState** | Represents current football state |
| self.**gui** | Graphical user interface of the program, which is an instance of a GUI class |
| **convertToSendableData**(self) | Converts current match state into simple data |

class **QFinal**

**Description:**

This class was created as part of the tournament system and **matryoshka pattern**. It is used between states **Round16** and **SFinal.**

Namespace**: FootballObj.**

**Properties:**

| **\_\_init\_\_**(self, matches) | Initializing and saving matches |
| --- | --- |
| **proceed**(self) | Reads goals data and returns SFinal instance with sorted best teams. |
| self.**matches** | Created in constructor by assigning passed property “matches” preferred value type is **Match** |
| **readData**(self, data) | Reads team’s goals from data |

class **Round16**

**Description:**

This class was created as part of the tournament system and **matryoshka pattern**. It is used between states **QuarterFinal** and **FirstTour.**

Namespace**: FootballObj.**

**Properties:**

| **\_\_init\_\_**(self, matches) | Initializing and saving round 16 |
| --- | --- |
| **proceed**(self) | Creates an instance of the **QuarterFinal** class with a selection of the best teams from the current matches |
| self.**matches** | Created in constructor by assigning passed property “matches” preferred value type is **Match** |
| **readData**(self, data) | Reads team’s goals from data |

class **SemiFinal**

**Description:**

This class was created as part of the tournament system and **matryoshka pattern**. It is used between states **Final** and **QuarterFinal.** Namespace**: FootballObj.**

**Properties:**

| **\_\_init\_\_**(self, matches) | Initializing and saving semi final properties. |
| --- | --- |
| **proceed**(self) | Returns an instance of the **Final** class with a selection of the best teams from the current matches |
| self.**matches** | Created in constructor by assigning passed property “matches” preferred value type is **Match** |
| **readData**(self, data) | Reads team’s goals from data |

class **Team**

**Description:**

This class was created to contain general information about the football team.

Namespace**: FootballObj.**

**Properties:**

| **\_\_init\_\_**(self, country, goals) | Initializing and saving general team properties. Default value of goals is 0. |
| --- | --- |
| self.**country** | Created in constructor by assigning passed property “country” preferred value type is **string** |
| self.**goals** | Creates in constructor by assigning passed property “goals” preferred value type is **int** |
| **\_\_str\_\_**(self) | Returns string formatted as f"{self.country}, {self.goals}" |

class **PyEvent**

**Description:**

Custom event with simple use interface

**Properties:**

| **invoke**(self, \*args) | Invokes event with any number of parameters. |
| --- | --- |
| **add**(self, func) | Adds function to the list of invokeable functions |
| **remove**(self, func) | Removes instant’s function from the list of invokeable functions |
| self**.\_\_functions** | All functions that have to be invoked on invoke() |

class **HTMLGUI**

**Description:**

Interface that simplify the use of eel library.

**Properties:**

| **\_\_init\_\_**(self, folder = “web”) | initialize eel library with a folder with web files. |
| --- | --- |
| **start**(self, file) | Starts localhost site with main index with “file” name. |

**other**

**onDataReceived** - global event for eel library

**readDataFromFrontEnd**(data) - invokes onDataReceived with data result

**readAllCountryImages**() - reads all images from image folder, and makes an data array of [image name, it’s source]

**readGameStateData**() - used for sending data about stages from **Round16** to **Final**