Data Structures used:

1- Hash table
2- Vectors
3- Arrays
4- Lists
5- String list

Big (O) discussion:

QSqlQueryModel *Controller::**getstadiumQueryModelsortedbyteam**()

Big O(1) Constant time, function is responsible to query the modem , it gets all the stadiums from the table and return it as an QSql query model sorted by team.

void Controller::**loadteam**()

Big O(n) Linear time, Function acts as a bridge between the sql database the local memory. It access the sql database and reads the info from the table and stores it locally in the form of objects stored in Qlist in QT.

void Controller :: **createSouvenir**(QString teamname ,QString item, QString price)

Big O(1) constant time, this function takes the souvenir info name,item and price creates the object and stores it locally and in the sql database.

QVector<int> graph::**dijkstra**(stadiums start)

Big O(n^2), polynomial time, this function takes the start node and calculates the shortest distances from the start node to all the nodes stored in the vector using dijkstra's.

void graph::**addEdges**()

Big O(n^2) polynomial time, this function initializes the adjacency matrix in the graph which is then used to calculate the distances and figure out if there is a path between the nodes or no.