TOUNAMENT MANAGEMENT SYSTEM



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PROJECT DESCRIPTION

My project is Tournament Management System. It can be used to manage a tournament. It can be used by both admin and user. TO run the program as admin, password is required. As an admin data of different teams can be added and managed in proper way. Data can be stored. Any unknown user can see that data and upcoming tournaments.

USERS OF APPLICATION

There are two types of users of this management system application which are as follows:

- Admin
- User

FUNCTIONAL REQUIREMENTS

Admin:

- Add Teams
- View All Teams
- Manage Teams
- Schedule Matches
- View Schedule
- Edit Point Table
- View Point Table
- Add Tournaments
- View Tournaments
- Change password
- Change profile

Customers:

- View All Teams
- View Schedule
- View Point Table
- View Tournaments
- Change profile

WIRE FRAMES OF APPLICATION

Login Page:

Wrong Password:

Correct Password:

1.Admin Menu:

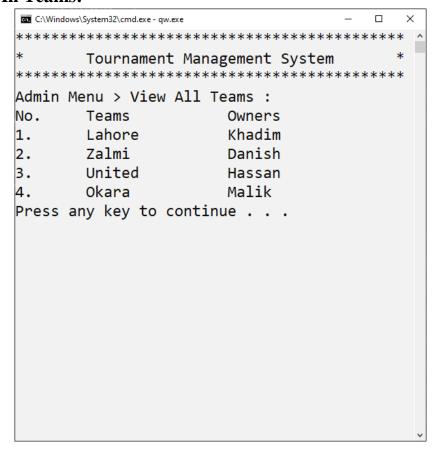
```
×
C:\Windows\System32\cmd.exe - qw.exe
***************
       Tournament Management System
**************
----- Admin Menu -----
Choose An Option :

    Add Teams.

2. View All Teams.
Manage Teams.
4.Schedule Matches.
5. View Schedule.
Edit Point Table.
7.View Point Table.
8.Add Tournaments.
9. View Tournaments.
S.Search Team.
P.Change Password.
C.Change Profile.
E.Exit.
Your Option :
```

1.1-Add Teams:

1.2-View All Teams:



1.3-Manage Teams:

Edit Team:

```
C:\Windows\System32\cmd.exe - gw.exe
                                        Tournament Management System *
Admin Menu > Manage Teams :
Choose one Option :
1.Edit Team.
Remove Team.
Your Option : 1
Admin Menu > Manage Team > Edit Team :
No. Teams Owners

Lahore Khadim

Lahore Khadim

Lahore Hassan

Malik
       Okara
                       Malik
Choose Team You Want To Edit i.e 1 : 1
Update Team Informations :
Enter Team Name : Kings
Enter Name of Owner : Ali
Enter Players :
Enter Name of 1st Player :Asad
Enter His Age :13
Enter Name of 2nd Player :Amir
Enter His Age :16
Press any key to continue . . .
```

Remove Teams:

```
C:\Windows\System32\cmd.exe - gw.exe
                                   - п ×
************
* Tournament Management System
Admin Menu > Manage Teams :
Choose one Option :
1.Edit Team.
2.Remove Team.
Your Option : 2
Admin Menu > Manage Team > Remove Team :
No. Teams Owners

1. Kings Ali
   Kings
Zalmi
                    Ali
Danish
1.
2.
    United Hassan
Okara Malik
3.
Choose Team You Want To Remove i.e 1 : 1
Team Was Removed.
Press any key to continue . . .
```

1.4-Schedule Match:

```
C:\Windows\System32\cmd.exe - qw.exe
************
       Tournament Management System
***************
Main Menu > Schedule Matches :
       Teams
                     Owners
1.
       Zalmi
                     Danish
2.
      United
                     Hassan
3.
       Okara
                     Malik
Enter Name of First Team : Okara
Enter Name of 2nd Team : United
Enter Date (1-31) : 12
Enter Month (1-12) : 04
Match is Added in Schedule.
Press any key to continue . . .
```

1.5-View Schedule:

1.6-Edit Point Table:

```
C:\Windows\System32\cmd.exe - qw.exe
************
      Tournament Management System
***************
Admin Menu > Edit Point Table :
No.
      Teams
                     Owners
1.
      Zalmi
                     Danish
     United Hassan
Okara Malik
2.
3.
     Okara
                    Malik
Choose Team You Want To Edit i.e 1 : 1
No. of Total Played Matches : 6
Won Matches :3
Point Table updated Successfully.
Press any key to continue . . .
```

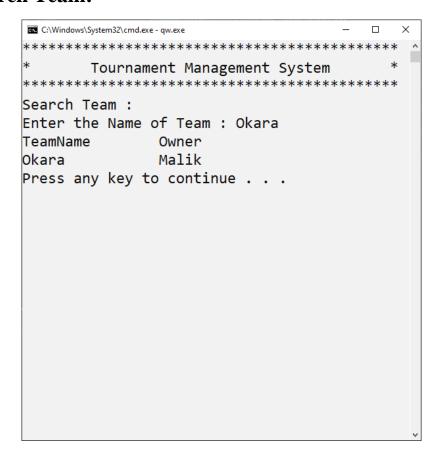
1.7-View Point Table:

```
C:\Windows\System32\cmd.exe - qw.exe
*************
     Tournament Management System
**************
Point Table :
          Total Won Lost Points
TeamName
                 10
           12
Lahore
                       2
                             20
Zalmi
           6
                 3
                       3
                             6
United
           10
                 2
                       8
                             4
Press any key to continue . . .
```

1.8-Add Tournament:

1.9-View Tournaments:

1.10-Search Team:



1.11-Change Password:

1.12-Change Profile:

```
C:\Windows\System32\cmd.exe - qw.exe
Tournament Management System
**************
----- Admin Menu -----
Choose An Option :

    Add Teams.

2.View All Teams.
Manage Teams.

    Schedule Matches.

5.View Schedule.
6.Edit Point Table.
7. View Point Table.
8.Add Tournaments.
9. View Tournaments.
S.Search Team.
P.Change Password.
C.Change Profile.
E.Exit.
Your Option : C
Press any key to continue . . .
```

1.13-Exit:

```
C:\Windows\System32\cmd.exe - qw.exe
************
      Tournament Management System
----- Admin Menu -----
Choose An Option :
1.Add Teams.
2.View All Teams.
3.Manage Teams.
4.Schedule Matches.
5.View Schedule.
6.Edit Point Table.
7.View Point Table.
8.Add Tournaments.
9.View Tournaments.
S.Search Team.
P.Change Password.
C.Change Profile.
E.Exit.
Your Option : E
Thanks For Using...
Press Any Key To Exit ....
```

2.User Menu:

2.1-View All Teams:

```
C:\Windows\System32\cmd.exe - qw.exe
*************
      Tournament Management System
**************
Admin Menu > View All Teams :
No.
             Owners
    Teams
1.
      Lahore
                   Khadim
2.
      Zalmi
                   Danish
     United
                  Hassan
4.
      Okara
                   Malik
Press any key to continue . . .
```

2.2-View Schedule:

```
| William | Will
```

2.3-View Point Table:

```
🐼 C:\Windows\System32\cmd.exe - qw.exe
*************
     Tournament Management System
**************
Point Table :
TeamName Total Won Lost Points
                      2
Lahore
          12 10
                             20
Zalmi
                      3
          6
                3
                             6
           10
                 2
                       8
United
                             4
Press any key to continue . . .
```

2.4-View Tournament:

2.5-Search Team:

2.6-Exit:

3.Exit:

DATA STRUCTURES

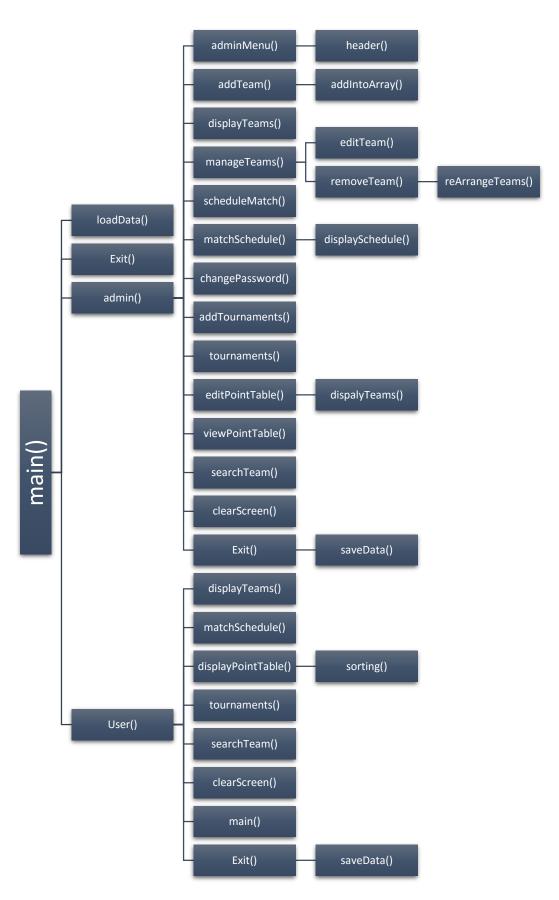
ARRAYS:

```
const int MAX_RECORD = 20;
string team_name[MAX_RECORD], owner_name[MAX_RECORD];
string team_player1_name[MAX_RECORD], team_player2_name[MAX_RECORD];
int team_player1_age[MAX_RECORD], team_player2_age[MAX_RECORD];
int team_played_matches[MAX_RECORD], team_won_matches[MAX_RECORD],
  team_lost_matches[MAX_RECORD];
int team_points[MAX_RECORD];
string team_name_point[MAX_RECORD];
string sorted_team_name[MAX_RECORD], sorted_owner_name[MAX_RECORD];
string sorted_team_player1_name[MAX_RECORD],
  sorted_team_player2_name[MAX_RECORD];
int sorted_team_player1_age[MAX_RECORD], sorted_team_player2_age[MAX_RECORD];
int sorted_team_played_matches[MAX_RECORD], sorted_team_won_matches[MAX_RECORD],
  sorted_team_lost_matches[MAX_RECORD];
int sorted_team_points[MAX_RECORD];
string tounamentName[MAX_RECORD];
int tournamentStratDate[MAX_RECORD], tournamentStartMonth[MAX_RECORD];
string smteam1name[MAX_RECORD], smteam2name[MAX_RECORD];
int smdate[MAX_RECORD], smmonth[MAX_RECORD], smtime[MAX_RECORD];
                        FUNCTIONS PROTOTYPES
void clearScreen();
void header();
char adminMenu();
char logIn();
char userMenu();
void admin();
void addTeam();
void addIntoArray(string teamName, string ownerName, string player1_name,
         int player1_age, string player2_name, int player2_age);
void displayTeams();
void removeTeam();
void editTeam();
void manageTeams();
void scheduleMatches();
void matchSchedule();
void displaySchedule();
```

void editPointTable();

```
void displayPointTable();
void sorting();
void user();
void reArrangeTeams();
void storeTeamsInFile();
void loadTeamsFromFile();
void storePointsInFile();
void loadPointsFromFile();
void storeScheduleInFile();
void loadScheduleFromFile();
void storeData();
void loadData();
void scheduleInArray(string team1name, string team2name, int date, int month,
            int time);
void Exit();
void storePassword();
void loadPassword();
void changePassword();
void teamMatch(int edit);
void tournaments();
void addTournaments();
void addTournamentsIntoArrays(string name, int date, int month);
void storeTournamentInFile();
void loadTournamentFromFile();
void searchTeam();
bool athentication();
void recomendation();
```

FUNCTIONS WORKING FLOW



COMPLETE CODE

```
#include <conio.h>
#include <fstream>
#include <iostream>
#include <stdlib.h>
#include <windows.h>
using namespace std;
// Function ProtoTypes
void clearScreen();
void header();
char adminMenu();
char logIn();
char userMenu();
void admin();
void addTeam();
void addIntoArray(string teamName, string ownerName, string player1_name,
          int player1_age, string player2_name, int player2_age);
void displayTeams();
void removeTeam();
void editTeam();
void manageTeams();
void scheduleMatches();
void matchSchedule();
void displaySchedule();
void editPointTable();
void displayPointTable();
void sorting();
void user();
void reArrangeTeams();
void storeTeamsInFile();
void loadTeamsFromFile();
void storePointsInFile();
void loadPointsFromFile();
```

```
void storeScheduleInFile();
void loadScheduleFromFile();
void storeData();
void loadData();
void scheduleInArray(string team1name, string team2name, int date, int month,
           int time);
void Exit();
void storePassword();
void loadPassword();
void changePassword();
void teamMatch(int edit);
void tournaments();
void addTournaments();
void addTournamentsIntoArrays(string name, int date, int month);
void storeTournamentInFile();
void loadTournamentFromFile();
void searchTeam();
bool athentication();
string parsing(string line, int field);
// Data Structures
const int MAX_RECORD = 20;
string team_name[MAX_RECORD], owner_name[MAX_RECORD];
string team_player1_name[MAX_RECORD], team_player2_name[MAX_RECORD];
int team_player1_age[MAX_RECORD], team_player2_age[MAX_RECORD];
int\ team\_played\_matches[MAX\_RECORD],\ team\_won\_matches[MAX\_RECORD],
  team_lost_matches[MAX_RECORD];
int team_points[MAX_RECORD];
string team_name_point[MAX_RECORD];
string sorted_team_name[MAX_RECORD], sorted_owner_name[MAX_RECORD];
string sorted_team_player1_name[MAX_RECORD],
  sorted_team_player2_name[MAX_RECORD];
int sorted_team_player1_age[MAX_RECORD], sorted_team_player2_age[MAX_RECORD];
int\ sorted\_team\_played\_matches[MAX\_RECORD],\ sorted\_team\_won\_matches[MAX\_RECORD],
  sorted_team_lost_matches[MAX_RECORD];
```

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```
int sorted_team_points[MAX_RECORD];
int team_count = 0;
string tounamentName[MAX_RECORD];
int tournamentCount = 0;
int\ tournamentStartDate[MAX\_RECORD],\ tournamentStartMonth[MAX\_RECORD];
string smteam1name[MAX_RECORD], smteam2name[MAX_RECORD];
int smdate[MAX_RECORD], smmonth[MAX_RECORD], smtime[MAX_RECORD];
int smcount = 0;
bool loading = true;
string userName ="Pakistan", password = "92";
// Functions
int main() {
 if (loading) {
  loadData();
  loading = false;
 system("cls");
 char login = logIn();
 if (login == '1') {
  if (athentication()) {
   clearScreen();
   admin();
  } else {
   cout << "Invalid Username or Password.\nTry Again.\n";</pre>
   clearScreen();
   main();
 } else if (login == '2') {
  clearScreen();
  user();
 } else if (login == 'E') {
  Exit();
 } else {
  cout << "Invalid Option.\nTry Again.\n";</pre>
```

```
clearScreen();
  main();
}
void clearScreen() {
//___clear screen___
system("pause");
system("CLS");
void header() {
// Header
HANDLE l = GetStdHandle(STD_OUTPUT_HANDLE);
SetConsoleTextAttribute(1, 2);
cout << "*********** << endl;
           Tournament Management System
 cout << "*********** << endl;
HANDLE s = GetStdHandle(STD_OUTPUT_HANDLE);
SetConsoleTextAttribute(s, 7);
}
char adminMenu() {
// Admin Menu
header();
cout << "----- Admin Menu -----" << endl;
cout << "Choose An Option : " << endl;</pre>
cout << "1.Add Teams." << endl;
cout << "2.View All Teams." << endl;
cout << "3.Manage Teams." << endl;
 cout << "4.Schedule Matches." << endl;
cout << "5.View Schedule." << endl;</pre>
cout << "6.Edit Point Table." << endl;
cout << "7. View Point Table." << endl;
cout << "8.Add Tournaments." << endl;</pre>
cout << "9.View Tournaments." << endl;</pre>
cout << "S.Search Team." << endl;</pre>
cout << "P.Change Password." << endl;</pre>
cout << "C.Change Profile." << endl;</pre>
```

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```
cout << "E.Exit." << endl;
 char option;
 cout << "Your Option : ";</pre>
 cin >> option;
 return option;
char logIn() {
 // Login Page
 char login_option;
 header();
 cout << "-----" << endl;
 cout << "Are you Admin or User: " << endl;
 cout << "1.Admin" << endl;
 cout << "2.User" << endl;
 cout << "E.Exit" << endl;
 cout << "Your Option : ";</pre>
 cin >> login_option;
 return login_option;
char userMenu() {
 // User Menu
 header();
 cout << "-----" << endl;
 cout << "Choose An option : " << endl;
 cout << "1.View All Teams." << endl;</pre>
 cout << "2.View Schedule." << endl;</pre>
 cout << "3.View Point Table." << endl;
 cout << "4.View Tournaments." << endl;</pre>
 cout << "S.Search Team." << endl;
 cout << "C.Change Profile." << endl;</pre>
 cout << "E.Exit." << endl;
 cout << "Your Option : ";</pre>
 char option;
 cin >> option;
 return option;
```

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```
}
void admin() {
 // Admin Portion
 system("cls");
 while (true) {
  char option = adminMenu();
  if (option == 'E') {
   Exit();
  clearScreen();
  header();
  if (option == '1') {
   // Add Team
   addTeam();
  } else if (option == '2') {
   // Display Teams
   if (team_count >= 1) {
     cout << "Admin Menu > View All Teams :" << endl;
     displayTeams();
    } else {
     cout << "You should add at least 1 team to view it." << endl;
    }
  }
  else if (option == '3') {
   // Manage Teams
   manageTeams();
  } else if (option == '4') {
   // Schedule Matches
   scheduleMatches();
  } else if (option == '5') {
   // View Match Schedule
   if (smcount >= 1) {
     matchSchedule();
    } else {
```

```
cout << "Currently No Schedule is Available." << endl;
   }
  } else if (option == '6') {
   // Edit Point Table
   editPointTable();
  } else if (option == '7') {
   // Display Point Table
   if (team_count >= 2) {
    displayPointTable();
   } else {
    cout << "You Should Add At Least 2 Teams to view point Table." << endl;
   }
  } else if (option == 'C') {
   // Login Page
   system("cls");
   main();
  } else if (option == 'P') {
   changePassword();
  } else if (option == '8') {
   addTournaments();
  } else if (option == '9') {
   tournaments();
  } else if (option == 'S') {
   searchTeam();
  } else {
   cout << "You Choosed Invalid Option ." << endl;
  clearScreen();
void addTeam() {
// Add Team Information
string teamName = "\0", ownerName;
string player1_name, player2_name;
int player1_age, player2_age;
```

}

```
cout << "Admin Menu > Add Teams :" << endl;</pre>
 cout << "Enter Team Name : ";</pre>
 cin >> teamName;
 cout << "Enter Name of Owner : ";</pre>
 cin >> ownerName;
 cout << "Enter Players : " << endl;</pre>
 cout << "Enter Name of 1st Player :";</pre>
 cin >> player1_name;
 cout << "Enter His Age:";
 cin >> player1_age;
 cout << "Enter Name of 2nd Player :";</pre>
 cin >> player2_name;
 cout << "Enter His Age:";
 cin >> player2_age;
// Add Team Information into Array
 addIntoArray(teamName, ownerName, player1_name, player1_age, player2_name,
         player2_age);
}
void addIntoArray(string teamName, string ownerName, string player1_name,
          int player1_age, string player2_name, int player2_age) {
// Add Team Information into Array
team_name[team_count] = teamName;
team_name_point[team_count] = teamName;
 owner_name[team_count] = ownerName;
team_player1_name[team_count] = player1_name;
 team_player1_age[team_count] = player1_age;
team_player2_name[team_count] = player2_name;
 team_player2_age[team_count] = player2_age;
team_count++;
}
void displayTeams() {
// Display Teams
 cout << "No.\tTeams\t\tOwners" << endl;</pre>
 for (int i = 0; i < team\_count; i++) {
  cout \ll i + 1 \ll ".\t" \ll team\_name[i] \ll "\t\t" \ll owner\_name[i] \ll endl;
 }
```

```
}
void removeTeam() {
// Remove Team
cout << "Admin Menu > Manage Team > Remove Team : " << endl;</pre>
 displayTeams();
 cout << "Choose Team You Want To Remove i.e 1 : ";</pre>
int edit;
cin >> edit;
 int idx=-1;
 if (edit <= team_count) {
   for(int i=0;i<team_count;i++){</pre>
   if(team_name[edit-1]==team_name_point[i]){
    idx=i;
   }
  }
  team_name_point[idx] = "\0";
  sorted_team_played_matches[idx]=0;
  sorted_team_won_matches[idx]=0;
  sorted_team_lost_matches[idx]=0;
  sorted_team_points[idx]=0;
  team_name[edit - 1] = "\0";
  owner_name[edit - 1] = "0";
  team_player1_name[edit - 1] = "\0";
  team_player1_age[edit - 1] = 0;
  team_player2_name[edit - 1] = "\0";
  team_player2_age[edit - 1] = 0;
  cout << "Team Was Removed." << endl;
  reArrangeTeams();
 } else {
  cout << "Invalid Team." << endl;</pre>
 }
}
void editTeam() {
// Edit Team
cout << "Admin Menu > Manage Team > Edit Team : " << endl;</pre>
```

```
displayTeams();
cout << "Choose Team You Want To Edit i.e 1 : ";</pre>
int edit;
cin >> edit;
 if (edit <= team_count) {
  cout << "Update Team Informations : " << endl;</pre>
  cout << "Enter Team Name : ";</pre>
  cin >> team_name[edit - 1];
  team_name_point[edit - 1] = team_name[edit - 1];
  cout << "Enter Name of Owner : ";</pre>
  cin >> owner_name[edit - 1];
  cout << "Enter Players : " << endl;</pre>
  cout << "Enter Name of 1st Player :";</pre>
  cin >> team_player1_name[edit - 1];
  cout << "Enter His Age :";</pre>
  cin >> team_player1_age[edit - 1];
  cout << "Enter Name of 2nd Player :";</pre>
  cin >> team_player2_name[edit - 1];
  cout << "Enter His Age :";</pre>
  cin >> team_player2_age[edit - 1];
 } else {
  cout << "Invalid Team." << endl;
}
void manageTeams() {
// Manage Teams
if (team_count >= 1) {
  cout << "Admin Menu > Manage Teams :" << endl;</pre>
  cout << "Choose one Option : " << endl;
  cout << "1.Edit Team." << endl;
  cout << "2.Remove Team." << endl;
  char op;
  cout << "Your Option : ";</pre>
  cin >> op;
```

```
if (op == '2') {
   removeTeam();
  } // End of op==2 ie Remove Team
  else if (op == '1') {
   editTeam();
  } // End of op==1 ie Edit Team
  else {
   cout << "Invalid Option" << endl;</pre>
 }
else {
  cout << "You Should Add At Least 1 Team To Manage it." << endl;
}
void scheduleMatches() {
// Schedule Matches
string team1name, team2name;
int date, month, time;
bool check = false;
 cout << "Main Menu > Schedule Matches : " << endl;</pre>
 if (team\_count >= 2) {
  displayTeams();
  cout << "Enter Name of First Team : ";</pre>
  cin >> team1name;
  cout << "Enter Name of 2nd Team : ";</pre>
  cin >> team2name;
  if (team1name != team2name) {
   for (int i = 0; i < team\_count; i++) {
     if (team1name == team_name[i]) {
      for (int j = 0; j < team\_count; j++) {
       if (team2name == team_name[j]) {
        while (true) {
```

```
cout << "Enter Date (1-31): ";
      cin >> date;
      if (date < 1 || date > 31) {
       cout << "Invalid Date.\nTry Again." << endl;</pre>
       continue;
      }
      break;
     }
     while (true) {
      cout << "Enter Month (1-12): ";
      cin >> month;
      if (month < 1 \parallel month > 12) {
       cout << "Invalid Month.\nTry Again." << endl;
       continue;
      }
      break;
     }
     time = date + (month * 30);
     cout<<"Match is Added in Schedule."<<endl;
     scheduleInArray(team1name, team2name, date, month, time);
     check = true;
     break;
    }
if (!check) {
 cout << "Team\ Names\ Not\ Found\ in\ added\ Teams. \verb|\nTry\ Again."| << endl;
 cout << "Press Any Key to Try Again and 'e' to go to Admin Menu...";
 char ch;
 ch = getch();
 if (ch == 'e')
  admin();
 system("cls");
 header();
 scheduleMatches();
```

```
}
  } else {
   cout << "A Team Cannot Play With Itself." << endl;
   cout << "Press Any Key to Try Again and 'e' to go to Admin Menu...";
   char ch;
   ch = getch();
   if (ch == 'e')
    admin();
   system("cls");
   header();
   scheduleMatches();
  }
 } else {
  cout << "Please Enter At Least 2 Teams To Schedule Matches." << endl;
 }
}
void matchSchedule() {
// Sort Matches with respect to Date
 for (int i = 0; i < smcount; i++) {
  for (int j = i + 1; j < smcount; j++) {
   if (smtime[i] > smtime[j]) {
    swap(smtime[i], smtime[j]);
    swap(smdate[i], smdate[j]);
    swap(smmonth[i], smmonth[j]);
    swap(smteam1name[i], smteam1name[j]);
    swap(smteam2name[i], smteam2name[j]);
   }
  }
 displaySchedule();
}
void displaySchedule() {
// Display Schedule
cout << "Match Schedule : " << endl;</pre>
 for (int i = 0; i < smcount; i++) {
  cout << "Match No." << i+1 << ":" << smteam1name[i] << "\tvs\t"
```

```
<< smteam2name[i] << " \ \ t \ on " << smdate[i] << "/" << smmonth[i]
     << "/2022" << endl;
 }
}
void editPointTable() {
// Edit Point Table
cout << "Admin Menu > Edit Point Table : " << endl;</pre>
if (team\_count >= 2) {
  displayTeams();
  cout << "Choose Team You Want To Edit i.e 1 : ";</pre>
  int edit;
  cin >> edit;
  if (edit <= team_count) {</pre>
   teamMatch(edit);
  } else {
   cout << "Invalid Team." << endl;</pre>
  }
 } else {
  cout << "You Should Add Two Teams To Edit Point Table." << endl;
 }
void displayPointTable() {
// Display Point Table (Sorted)
cout << "Point Table : " << endl;</pre>
cout << "TeamName \tTotal \tWon \tLost \tPoints" << endl;
 sorting();
 for (int i = 0; i < team\_count; i++) {
  cout << team\_name\_point[i] << "\t" << sorted\_team\_played\_matches[i]
     << "\t" << sorted\_team\_won\_matches[i] << "\t"
     << sorted_team_lost_matches[i] << "\t" << sorted_team_points[i]
     << endl;
 }
}
void sorting() {
// Sort Point Table
for (int i = 0; i < team\_count; i++) {
```

```
for (int j = i + 1; j < \text{team\_count}; j++) {
   if (sorted_team_points[i] < sorted_team_points[j]) {</pre>
     swap(sorted_team_points[i], sorted_team_points[j]);
     swap(sorted_team_played_matches[i], sorted_team_played_matches[j]);
     swap(sorted_team_won_matches[i], sorted_team_won_matches[j]);
     swap(sorted_team_lost_matches[i], sorted_team_lost_matches[j]);
     swap(team_name_point[i], team_name_point[j]);
   }
  }
void user() {
// User Portion
 while (true) {
  system("cls");
  char option1 = userMenu();
  if (option1 == 'E') {
   Exit();
  }
  clearScreen();
  header();
  if (option1 == '1') {
   // View All Teams
   if (team_count >= 1) {
    cout << "User Menu > View All Teams :" << endl;</pre>
    displayTeams();
   } else {
     cout << "Not Enough Data To Show." << endl;
   }
  } else if (option1 == '2') {
   // View Match Schedule
   if (smcount >= 1) {
    matchSchedule();
   } else {
     cout << "Currently No Schedule is Available." << endl;</pre>
   }
```

```
} else if (option1 == '3') {
   // Display Point Table
   if (team_count < 2) {
    cout << "Not Enough Data To Show." << endl;
   } else {
    displayPointTable();
  } else if (option1 == 'C') {
   // Change Profile
   system("cls");
   main();
  } else if (option1 == '4') {
   tournaments();
  } else if (option1 == 'S') {
   searchTeam();
  } else {
   cout << "Invalid Option." << endl;</pre>
  clearScreen();
void reArrangeTeams() {
// ReArrange Teams After team is removed
 for (int i = 0; i < team\_count; i++) {
  for (int j = i + 1; j < \text{team\_count}; j++) {
   if (team\_name[i] == "\0") {
     swap(team_name[i], team_name[j]);
     swap(team_name_point[i], team_name_point[j]);
     swap(owner_name[i], owner_name[j]);
     swap(team_player1_name[i], team_player1_name[j]);
     swap(team_player1_age[i], team_player1_age[j]);
     swap(team_player2_name[i], team_player2_name[j]);
     swap(team_player2_age[i], team_player2_age[j]);
   }
  }
```

```
for (int i = 0; i < team\_count; i++) {
  for (int j = i + 1; j < \text{team\_count}; j++) {
   if (team\_name\_point[i] == "\0") {
     swap(team_name_point[i], team_name_point[j]);
     swap(sorted_team_played_matches[i], sorted_team_played_matches[j]);
     swap(sorted_team_won_matches[i], sorted_team_won_matches[j]);
     swap(sorted_team_lost_matches[i], sorted_team_lost_matches[j]);
     swap(sorted_team_points[i], sorted_team_points[j]);
   }
  }
team_count--;
void storeTeamsInFile() {
// Store Teams Data in txt File
 fstream file;
 file.open("TeamInformation.txt", ios::out);
 for (int i = 0; i < team\_count; i++) {
  file << team_name[i] << "," << owner_name[i] << "," << team_player1_name[i]
     << "," << team_player1_age[i] << "," << team_player2_name[i] << ","</pre>
     << team_player2_age[i] << endl;
 file.close();
void loadTeamsFromFile() {
// Load Teams Data in txt File
 fstream file;
string teamName = "\0", ownerName, name;
 string player1_name, player2_name;
 int player1_age, player2_age;
 int count = 0;
 file.open("TeamInformation.txt", ios::in);
 while (!file.eof()) {
  getline(file, name);
  count++;
```

```
}
file.close();
 string line;
 file.open("TeamInformation.txt", ios::in);
 for (int i = 0; i < count - 1; i++) {
  getline(file,line);
  teamName=parsing(line,1);
  ownerName=parsing(line,2);
  player1_name=parsing(line,3);
  player1_age=stoi(parsing(line,4));
  player2_name=parsing(line,5);
  player2_age=stoi(parsing(line,6));
  addIntoArray(teamName, ownerName, player1_name, player1_age, player2_name,
          player2_age);
 }
file.close();
void storePointsInFile() {
// Store Teams Points Data in txt File
 fstream file;
 file.open("TeamPoints.txt", ios::out);
 for (int i = 0; i < team\_count; i++) {
  file << team_name_point[i] << "," << sorted_team_played_matches[i] << ","
     << sorted_team_won_matches[i] << "," << sorted_team_lost_matches[i]
     << "," << sorted_team_points[i] << endl;
 }
 file.close();
void loadPointsFromFile() {
// Load Teams Points Data in txt File
fstream file;
int count = 0;
string name;
```

```
file.open("TeamPoints.txt", ios::in);
 while (!file.eof()) {
  getline(file, name);
  count++;
 file.close();
 string line;
 file.open("TeamPoints.txt", ios::in);
 for (int i = 0; i < count - 1; i++) {
   getline(file,line);
  team_name_point[i]=parsing(line,1);
  sorted_team_played_matches[i]=stoi(parsing(line,2));
  sorted_team_won_matches[i]=stoi(parsing(line,3));
  sorted_team_lost_matches[i]=stoi(parsing(line,4));
  sorted_team_points[i]=stoi(parsing(line,5));
file.close();
void scheduleInArray(string team1name, string team2name, int date, int month,
            int time) {
// Add Schedule in Array
 smteam1name[smcount] = team1name;
smteam2name[smcount] = team2name;
 smdate[smcount] = date;
 smmonth[smcount] = month;
 smtime[smcount] = time;
smcount++;
void storeScheduleInFile() {
// Store Teams Schedule Data in txt File
 fstream file;
 file.open("TeamSchedule.txt", ios::out);
 for (int i = 0; i < smcount; i++) {
  file << smteam1name[i] << "," << smteam2name[i] << "," << smdate[i] << ","
```

```
<< smmonth[i] << "," << smtime[i] << endl; \\
 }
 file.close();
}
void loadScheduleFromFile() {
 // Load Teams Schedule Data in txt File
 fstream file;
 string team1name, team2name, name;
 int date, month, time;
 int count = 0;
 file.open("TeamSchedule.txt", ios::in);
 while (!file.eof()) {
  getline(file, name);
  count++;
 file.close();
 string line;
 file.open("TeamSchedule.txt", ios::in);
 for (int i = 0; i < count - 1; i++) {
  getline(file,line);
  team1name=parsing(line,1);
  team2name=parsing(line,2);
  date=stoi(parsing(line,3));
  month=stoi(parsing(line,4));
  time=stoi(parsing(line,5));
  scheduleInArray(team1name, team2name, date, month, time);
 file.close();
}
void storeData() {
 // Store All Data in txt files
 storePassword();
```

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```
storeScheduleInFile();
storePointsInFile();
storeTeamsInFile();
storeTournamentInFile();
void loadData() {
// Load All Data from txt files
loadTeamsFromFile();
loadPassword();
loadScheduleFromFile();
loadPointsFromFile();
loadTournamentFromFile();
}
void Exit() {
// Exit Program
cout << "Thanks For Using... \n";</pre>
storeData();
 cout << "Press Any Key To Exit ....";</pre>
 getch();
system("cls");
exit(1);
void changePassword() {
bool find = false;
cout << "Change Password : " << endl;</pre>
string username, pasword;
 cout << "Enter your Old username: ";</pre>
 cin >> username;
 cout << "Enter your Old password: ";</pre>
 cin >> pasword;
 if (username == userName && pasword == password) {
  cout << "Enter your New username: ";</pre>
  cin >> username;
  cout << "Enter your New password: ";</pre>
  cin >> pasword;
   for(int i=0;pasword[i]!='\0';i++){
```

```
if(pasword[i]==',')
      find = true;
    }
    } for(int i=0;username[i]!='\0';i++){
    if(username[i]==',')
      find = true;
    }
    }
  if(find){
   cout<<"You Cannot Add Comma in Your Username or Password."<<endl;
  }else{
    userName =username ; password =pasword;
  cout << "Password Changed Successfully.\n";</pre>
  }
 } else {
  cout << "Invalid Username or Password.\n";</pre>
void loadPassword() {
 fstream file;
string user, pass;
string line;
 file.open("Password.txt", ios::in);
  getline(file,line);
  user=parsing(line,1);
  pass=parsing(line,2);
 file.close();
if (user != "\0") {
  userName = user;
  password = pass;
```

```
}
void storePassword() {
 fstream file;
 file.open("Password.txt", ios::out);
file << userName << "," << password << endl;
file.close();
}
void teamMatch(int edit) {
int total, won;
cout << "No. of Total Played Matches: ";
cin >> total;
 cout << "Won Matches:";</pre>
 cin >> won;
 if (won <= total) {
  team_won_matches[edit - 1] = won;
  team_played_matches[edit - 1] = total;
  team_lost_matches[edit - 1] =
    team_played_matches[edit - 1] - team_won_matches[edit - 1];
  team_points[edit - 1] = 2 * team_won_matches[edit - 1];
  int idx = 0;
  for (int i = 0; i < team\_count; i++) {
   if (team_name[edit - 1] == team_name_point[i]) {
    idx = i;
   }
  }
  sorted_team_won_matches[idx] = team_won_matches[edit - 1];
  sorted_team_played_matches[idx] = team_played_matches[edit - 1];
  sorted_team_lost_matches[idx] = team_lost_matches[edit - 1];
  sorted_team_points[idx] = team_points[edit - 1];
  cout<<"Point Table updated Successfully."<<endl;
 } else {
  cout << "Won Matches Cannot exceed Total Matches.\n";</pre>
```

```
cout << "Enter Carrect Information.\n";</pre>
  teamMatch(edit);
}
void tournaments() {
 cout << "Tournaments : " << endl;</pre>
 if (tournamentCount == 0) {
  cout << "Due To Covid-19 Tounaments are Postponed." << endl;
  cout << "For New Updates Keep Visiting." << endl;</pre>
 } else {
  for (int i = 0; i < tournamentCount; i++) {
   cout << "-->The " << tounamentName[i] << " is Starting From "
       << tournamentStartDate[i] << "/" << tournamentStartMonth[i]
       << "/2022" << endl;
  }
 }
void addTournaments() {
 cout << "Add Tournaments : " << endl;</pre>
 string name;
 int date, month;
 cout << "Enter Name Of Tournament : ";</pre>
 cin >> name;
 while (true) {
  cout << "Enter Date (1-31): ";
  cin >> date;
  if (date < 1 || date > 31) {
   cout << "Invalid Date.\nTry Again." << endl;
   continue;
  break;
 while (true) {
  cout << "Enter Month (1-12): ";
  cin >> month;
  if (month < 1 \parallel month > 12) {
```

```
cout << "Invalid Month.\nTry Again." << endl;</pre>
   continue;
  break;
cout<<"Tournament is Added Successfully."<<endl;
addTournamentsIntoArrays(name, date, month);
}
void addTournamentsIntoArrays(string name, int date, int month) {
tounamentName[tournamentCount] = name;
tournamentStartDate[tournamentCount] = date;
tournamentStartMonth[tournamentCount] = month;
tournamentCount++;
void storeTournamentInFile() {
 fstream file;
 file.open("Tournament.txt", ios::out);
 for (int i = 0; i < tournamentCount; i++) {
  file << tournament Name[i] << "," << tournament Start Date[i] << ","
     << tournamentStartMonth[i] << endl;
 file.close();
void loadTournamentFromFile() {
 fstream file;
int count = 0;
string name;
int date, month;
 file.open("Tournament.txt", ios::in);
 while (!file.eof()) {
  getline(file, name);
  count++;
 file.close();
string line;
```

```
file.open("Tournament.txt", ios::in);
 for (int i = 0; i < count - 1; i++) {
  getline(file,line);
  name=parsing(line,1);
  date=stoi(parsing(line,2));
  month=stoi(parsing(line,3));
  addTournamentsIntoArrays(name, date, month);
 }
file.close();
}
void searchTeam() {
string name;
bool b = true;
 cout << "Search Team : " << endl;</pre>
 cout << "Enter the Name of Team : ";</pre>
 cin >> name;
 for (int i = 0; i < team\_count; i++) {
  if (team\_name[i] == name) \{\\
   cout << "TeamName\tOwner\n";</pre>
   cout << team\_name[i] << "\t\t" << owner\_name[i] << endl;
   b = false;
  }
if (b) {
  cout << "No Team found With This Name. " << endl;
 }
}
bool athentication() {
string username, password1;
cout << "Enter username : ";</pre>
cin >> username;
cout << "Enter Password : ";</pre>
 cin>>password1;
```

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```
if (userName == username && password == password1) {
  cout<<"Congratulations! Login Successful."<<endl;
  return true;
 return false;
string parsing(string line, int field)
  int comma = 1;
  string item;
  for (int i = 0; i < line.length(); i++)
     if (line[i] == ',')
       comma++;
     else if (field == comma)
       item = item + line[i];
  return item;
}
```

Test Cases for Project

Login Page:

Wrong Password:

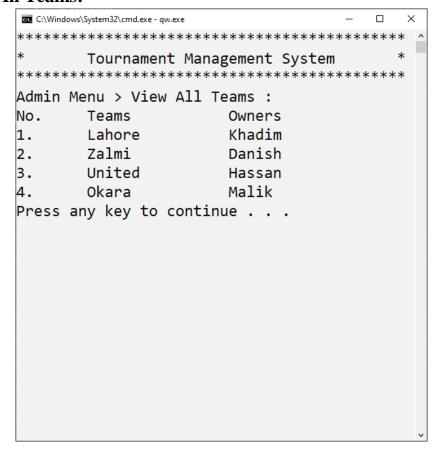
Correct Password:

1.Admin Menu:

```
C:\Windows\System32\cmd.exe - qw.exe
                                      ×
*****************
       Tournament Management System
**************
----- Admin Menu -----
Choose An Option :
1.Add Teams.
2. View All Teams.
Manage Teams.
4.Schedule Matches.
5.View Schedule.
6.Edit Point Table.
7.View Point Table.
8.Add Tournaments.
9. View Tournaments.
S.Search Team.
P.Change Password.
C.Change Profile.
E.Exit.
Your Option :
```

1.1-Add Teams:

1.2-View All Teams:



1.3-Manage Teams:

Edit Team:

```
C:\Windows\System32\cmd.exe - gw.exe
                                        Tournament Management System *
Admin Menu > Manage Teams :
Choose one Option :
1.Edit Team.
Remove Team.
Your Option : 1
Admin Menu > Manage Team > Edit Team :
No. Teams Owners

Lahore Khadim

Lahore Khadim

Lahore Hassan

Malik
       Okara
                       Malik
Choose Team You Want To Edit i.e 1 : 1
Update Team Informations :
Enter Team Name : Kings
Enter Name of Owner : Ali
Enter Players :
Enter Name of 1st Player :Asad
Enter His Age :13
Enter Name of 2nd Player :Amir
Enter His Age :16
Press any key to continue . . .
```

Remove Teams:

```
C:\Windows\System32\cmd.exe - gw.exe
                                   - п ×
************
* Tournament Management System
Admin Menu > Manage Teams :
Choose one Option :
1.Edit Team.
2.Remove Team.
Your Option : 2
Admin Menu > Manage Team > Remove Team :
No. Teams Owners

1. Kings Ali
   Kings
Zalmi
                    Ali
Danish
1.
2.
    United Hassan
Okara Malik
3.
Choose Team You Want To Remove i.e 1 : 1
Team Was Removed.
Press any key to continue . . .
```

1.4-Schedule Match:

```
C:\Windows\System32\cmd.exe - qw.exe
************
       Tournament Management System
***************
Main Menu > Schedule Matches :
       Teams
                     Owners
1.
       Zalmi
                     Danish
2.
      United
                     Hassan
3.
       Okara
                     Malik
Enter Name of First Team : Okara
Enter Name of 2nd Team : United
Enter Date (1-31) : 12
Enter Month (1-12) : 04
Match is Added in Schedule.
Press any key to continue . . .
```

1.5-View Schedule:

1.6-Edit Point Table:

```
C:\Windows\System32\cmd.exe - qw.exe
************
      Tournament Management System
***************
Admin Menu > Edit Point Table :
No.
      Teams
                     Owners
1.
      Zalmi
                     Danish
     United Hassan
Okara Malik
2.
3.
     Okara
                    Malik
Choose Team You Want To Edit i.e 1 : 1
No. of Total Played Matches : 6
Won Matches :3
Point Table updated Successfully.
Press any key to continue . . .
```

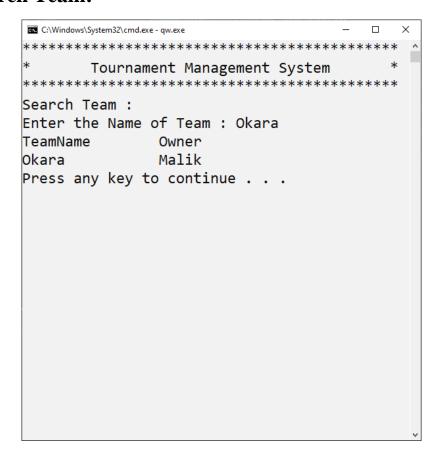
1.7-View Point Table:

```
C:\Windows\System32\cmd.exe - qw.exe
**************
     Tournament Management System
**************
Point Table :
          Total Won Lost Points
TeamName
                 10
           12
Lahore
                       2
                             20
Zalmi
           6
                 3
                       3
                             6
United
           10
                 2
                       8
                             4
Press any key to continue . . .
```

1.8-Add Tournament:

1.9-View Tournaments:

1.10-Search Team:



1.11-Change Password:

1.12-Change Profile:

```
C:\Windows\System32\cmd.exe - qw.exe
Tournament Management System
**************
----- Admin Menu -----
Choose An Option :

    Add Teams.

2.View All Teams.
Manage Teams.

    Schedule Matches.

5.View Schedule.
6.Edit Point Table.
7. View Point Table.
8.Add Tournaments.
9. View Tournaments.
S.Search Team.
P.Change Password.
C.Change Profile.
E.Exit.
Your Option : C
Press any key to continue . . .
```

1.13-Exit:

```
C:\Windows\System32\cmd.exe - qw.exe
************
      Tournament Management System
----- Admin Menu -----
Choose An Option :
1.Add Teams.
2.View All Teams.
3.Manage Teams.
4.Schedule Matches.
5.View Schedule.
6.Edit Point Table.
7.View Point Table.
8.Add Tournaments.
9.View Tournaments.
S.Search Team.
P.Change Password.
C.Change Profile.
E.Exit.
Your Option : E
Thanks For Using...
Press Any Key To Exit ....
```

2.User Menu:

2.1-View All Teams:

```
C:\Windows\System32\cmd.exe - qw.exe
*************
      Tournament Management System
**************
Admin Menu > View All Teams :
No.
             Owners
    Teams
1.
      Lahore
                   Khadim
2.
      Zalmi
                   Danish
     United
                  Hassan
4.
      Okara
                   Malik
Press any key to continue . . .
```

2.2-View Schedule:

2.3-View Point Table:

2.4-View Tournament:

2.5-Search Team:

2.6-Exit:

3.Exit:

The End