Main source file

```
#include<bits/stdc++.h>

#include "game.h"

using namespace std;

int main(){


          Game game;

          game.welcome();


  cout<<"\n\t press Enter key to see the list of the players...."<<endl;

        getchar();

         game.showAllPlayers();


          cout<<"\n\t press Enter key to select players of each team...."<<endl;

   getchar();

   game.selectplayers();


   cout<<"\n\t press Enter key to see the selected players ...."<<endl;

   getchar();

   game.showTeamPlayers();


        cin.ignore(numeric_limits<streamsize>::max(),'\n');    //for clearing the input buffer memory .we can use wherever we want.


  cin.ignore(numeric_limits<streamsize>::max(),'\n');

         cout<<"\n\t press Enter key for tossing of coin...."<<endl;

   getchar();

   game.toss();
```

```
            cin.ignore(numeric_limits<streamsize>::max(),'\n');    //for clearing the input buffer memory .we can use wherever we want.

    cout<<"\n\t press Enter key to start first innings...."<<endl;

    getchar();

             game.startFirstInnings();


             cout<<"\n\t press Enter key to start second innings...."<<endl;

    getchar();

    game.startSecondInnings();


   cin.ignore(numeric_limits<streamsize>::max(),'\n');

             cout<<"\n\t\t\t press Enter key for match summary...."<<endl;

    getchar();

    game.showMatchSummary();



             system("PAUSE");

  return 0;

}
```

Player.h file

```
#include<string>


class Player{

            public:

                        Player();

                        std::string name;

                        int id;

                        int runsScored;

                        int ballsPlayed;
```

```
                int ballsBowled;
                int runsGiven;
                int wicketsTaken;
};
```

Player.cpp file

```
#include"player.h"          //<string>
Player :: Player(){
        runsScored=0;
        ballsPlayed=0;
        ballsBowled=0;
        runsGiven=0;
        wicketsTaken=0;
}
```

Team.h file

```
#include<vector>
#include<string>
#include "player.h"      //<string>

class Team{
        public:
        Team();
        std::string name;
        int totalRunsScored;
        int wicketsLost;
        int totalBallsBowled;
        std::vector<Player>players;
};
```

Team.cpp file

```
#include"team.h"          //<string>,"player.h",<vector>



Team :: Team(){
            totalRunsScored=0;
            wicketsLost=0;
            totalBallsBowled=0;
}
```

Game.h file

```
#include<iostream>
#include<cstdlib>
#include<ctime>
#include<unistd.h>
#include<limits>

#include "team.h"                 //<string>,"player.h",<vector>

class Game{
            public:

                        Game();
                        int playersPerTeam;
                        int maxBalls;
                        int totalPlayers;
                        std :: string players [11];
                        bool isFirstInnings;
```

```
                Team teamA,teamB;

                Team *battingTeam,*bowlingTeam;

                Player *batsman,*bowler;

                void welcome();

                void showAllPlayers();

                int takeIntegerInput();

                void selectplayers();

          bool validateSelectedPlayer(int);

          void showTeamPlayers();

          void toss();

                void tossChoice(Team);

                void startFirstInnings();

                void initializePlayers();

                void playInnings();

                void bat();

                bool validateInningsScore();

                void showGameScorecard();

                void startSecondInnings();

                void showMatchSummary();


};
```

Game.cpp file

```
#include"game.h"

using namespace std;


 Game :: Game(){


        playersPerTeam=4;
```

```
            maxBalls=6;

            totalPlayers=11;

            players[0]="DHAWAN";

            players[1]="ROHIT";

            players[2]="VIRAT";

            players[3]="S.K YADAV";

            players[4]="SHREYAS";

            players[5]="PANT";

            players[6]="HARDHIK";

            players[7]="BUMRAH";

            players[8]="B.KUMAR";

            players[9]="Y.CHAHAL";

            players[10]="U.MALIK";

            isFirstInnings=false;

            teamA.name="Team-A";

            teamB.name="Team-B";

}

 void Game::welcome() {

                        cout<<"\t\t\t\t |------------------------|"<<endl<<"\t\t\t\t
|========================|"<<endl;

                        cout<<"\t\t\t\t |*********WELCOME*********|"<<endl<<"\t\t\t\t |*********CRIC-
IN*********|"<<endl<<"\t\t\t\t |========================|"<<endl;

                        cout<<"\t\t\t\t |------------------------|\n\n"<<endl;

                        cout<<"  |--------------------------------------------------------------------------------|"<<endl;

                        cout<<"  |----------------------------INSTRUCTION OF CRIC-IN--------------------------------
|"<<endl;

                        cout<<"  |--------------------------------------------------------------------------------|\n"<<endl;

                        cout<<"  | 1.Select 4 players in each team by using number of the player.
|"<<endl;

                        cout<<"  | 2.Each innings have 6 balls.                                            |"<<endl;
```

```
                cout<<"  | 3.selection of batting or bowling done toss winning team.
|"<<endl;
                cout<<"  | 4.batsman and bowler comes in sequencial order your selection.
|"<<endl;
                cout<<"  | 5.which team scored most runs then that team will be declared as winnner.
|\n\n"<<endl;
                cout<<"  |--------------------------------------------------------------------------------------|"<<endl;
                cout<<"  |               *************LETS START THE GAME**************
|"<<endl;
                cout<<"  |--------------------------------------------------------------------------------------|\n\n"<<endl;
}
void Game::showAllPlayers(){
        cout<<"\n\t\t|------------------------------|"<<endl;
        cout<<"\t\t|=========LIST OF PLAYERS======|"<<endl;
        cout<<"\t\t|------------------------------|\n\n"<<endl;
        for(int i=0;i<totalPlayers;i++){
        cout<<"\t\t ["<<i<<"]"<<players[i]<<endl;
        }
}

 int Game::takeIntegerInput(){
        int n;
        while(!(cin>>n)){
                cin.clear();
                cin.ignore(numeric_limits<streamsize>::max(),'\n');
                cout<<"Invalid input ! Enter the valid interger input:"<<endl;
         }
         return n;
 }
 bool Game::validateSelectedPlayer(int index){
        int n;

        vector<Player>players;

        players=teamA.players;

        n=players.size();

        for(int i=0;i<n;i++){

                if(players[i].id==index){

                 return false;

                }

         }

        players=teamB.players;

        n=players.size();

        for(int i=0;i<n;i++){

                if(players[i].id==index){

                 return false;

                }

         }

        return true;

}


void Game::selectplayers(){

  cout<<"\n\t\t|-------------------------------|"<<endl;

        cout<<"\t\t|========SELECT THE PLAYERS=====|"<<endl;

        cout<<"\t\t|-------------------------------|\n"<<endl;


        for(int i=0;i<playersPerTeam;i++){

                //add team a players

                teamAselection:

                cout<<"\t select the players("<<i+1<<") of the teamA-";

                int playerIndexTeamA=takeIntegerInput();
                if(playerIndexTeamA<0||playerIndexTeamA>10){
                        cout<<endl<<"please select from the given players"<<endl;
                        goto teamAselection;
                        }else if(!validateSelectedPlayer(playerIndexTeamA)){
                                cout<<"You are already selected that player, please select any other
player."<<endl;
                                goto teamAselection;
        }else{
                                Player teamAplayer;
                                teamAplayer.id=playerIndexTeamA;
                                teamAplayer.name=players[playerIndexTeamA];
                                teamA.players.push_back(teamAplayer);
        }

                //add team a players
                 teamBselection:
                cout<<"\t select the players("<<i+1<<") of the teamB-";
                int playerIndexTeamB=takeIntegerInput();
                        if(playerIndexTeamB<0||playerIndexTeamB>10){
                        cout<<endl<<"please select from the given players"<<endl;
                        goto teamBselection;
                        }else if(!validateSelectedPlayer(playerIndexTeamB)){
                                cout<<"You are already selected that player, please select any other
player."<<endl;
                                goto teamBselection;
                        }else{
                                Player teamBplayer;
                                teamBplayer.id=playerIndexTeamB;
                                teamBplayer.name=players[playerIndexTeamB];
```

```
                                        teamB.players.push_back(teamBplayer);
        }
        }


 }
 void Game::showTeamPlayers(){
        vector< Player>teamAplayers= teamA.players;
        vector<Player>teamBplayers= teamB.players;
        cout<<"\n|---------------------------------|\t\t|---------------------------------|"<<endl;
        cout<<"|=============TEAM-A==============|\t\t|=============TEAM-
B===============|"<<endl;
        cout<<"|---------------------------------|\t\t|---------------------------------|"<<endl;
        for(int i=0;i<playersPerTeam;i++){

        cout<<"\t"<<"["<<i<<"]"<<teamAplayers[i].name<<"\t"<<"\t\t"<<"\t\t"<<"["<<i<<"]"<<teamBpla
yers[i].name<<"\t"<<endl;
 }
}
void Game::toss(){
        cout<<"\n\t\t\t\t|------------------------------|"<<endl;
        cout<<"\t\t\t|============LET'S TOSS=========|"<<endl;
        cout<<"\t\t\t|------------------------------|"<<endl;
        int randomvalue;
        srand(time(NULL));
        randomvalue=(rand()%2);
        cout<<"\n\t\t\t\t Tossing the coin....."<<endl;
        usleep(2000000);
        switch (randomvalue){
                case 0:
                cout<<"\n\t Team-A won the toss."<<endl;
        tossChoice(teamA);                  //toss winning team declaration
        break;
        case 1:
        cout<<"\n\t Team-B won the toss."<<endl;
        tossChoice(teamB);                  //toss winning team declaration
        break;
        }
}
    void Game::tossChoice(Team tossWinnerTeam){
        cout<<" \n\t Enter 1 to bat or 2 to bowl first."<<endl<<"\t\t\t 1.Bat"<<endl<<"\t\t\t 2.Bowl"<<endl;
        int tossInput=takeIntegerInput();
        switch(tossInput){
            case 1:
                cout<<endl<<"\t"<<tossWinnerTeam.name<<"won the toss and elected to BAT first."<<endl<<endl;
                if(tossWinnerTeam.name.compare("Team-A")==0){
                    battingTeam= &teamA;
                    bowlingTeam= &teamB;
                }else{
                    bowlingTeam= &teamA;
                    battingTeam= &teamB;
                }
               break;
            case 2:
                cout<<endl<<"\t"<<tossWinnerTeam.name<<"won the toss and elected to BOWL first."<<endl<<endl;
                if(tossWinnerTeam.name.compare("Team-B")==0){
                    battingTeam= &teamB;
                    bowlingTeam= &teamA;
                }else{
                    bowlingTeam= &teamB;
                    battingTeam= &teamA;
                }
             break;
            default:
                cout<<endl<<"\t\t Invalid input,please try again:"<<endl;
                tossChoice(tossWinnerTeam);
                break;
        }


    }
     void Game :: startFirstInnings(){
    cout<<"\n\t\t\t|------------------------------|"<<endl;
    cout<<"\n\t\t\t   ||| FIRST INNINGS STARTS|||"<<endl<<endl;
    cout<<"\t\t\t|------------------------------|"<<endl;
    isFirstInnings=true;
    initializePlayers();
    cout<<"\n\t"<<battingTeam->name<<"-"<<batsman->name<<"is batting"<<endl;
    cout<<"\t"<<bowlingTeam->name<<"-"<<bowler->name<<"is bowling \n"<<endl;
    playInnings();
}
void Game :: initializePlayers(){
    batsman=&battingTeam->players[0];
    bowler=&bowlingTeam->players[0];
 }
void Game :: playInnings(){
    for (int i=0;i<maxBalls;i++){    //balls from 1 to 6.
        cout<<"\n press Enter to bowl..."<<endl;
        getchar();
        usleep(2000000);
        cout<<" Bowlling..."<<endl;
        bat();
        if (!validateInningsScore()){
            break;
         }
     }
 }
 void Game :: bat(){
    srand(time(NULL));
    int runsScored=rand()%7;

    //updating batting team scorecard and batsman score.
    batsman->runsScored=batsman->runsScored+ runsScored;
    battingTeam->totalRunsScored=battingTeam->totalRunsScored+ runsScored;
    batsman->ballsPlayed=batsman->ballsPlayed+ 1;

    //updating bowling team scorecard and batsman score.
    bowler->ballsBowled=bowler->ballsBowled+ 1;
    bowlingTeam->totalBallsBowled=bowlingTeam->totalBallsBowled+ 1;
    bowler->runsGiven=bowler->runsGiven+ runsScored;

    if (runsScored !=0){
        cout<<endl<<"\t\t"<<bowler->name<<" to "<<batsman->name<<" "<<runsScored<<" runs!"<<endl<<endl;

        showGameScorecard();
    }else{
        cout<<endl<<"\t\t"<<bowler->name<<" to "<<batsman->name<<" OUT!"<<endl<<endl;
        battingTeam->wicketsLost=battingTeam->wicketsLost+ 1;
        bowler->wicketsTaken=bowler->wicketsTaken +1;

        showGameScorecard();

        int nextPlayerIndex=battingTeam->wicketsLost;
        batsman=&battingTeam->players[nextPlayerIndex];

    }
 }
 bool Game :: validateInningsScore(){
    if (isFirstInnings){
        if(battingTeam->wicketsLost==playersPerTeam||bowlingTeam-
>totalBallsBowled==maxBalls){
            cout<<"\n\t\t\t ||FIRST INNINGS END||"<<endl<<endl;
            cin.ignore(numeric_limits<streamsize>::max(),'\n');
            usleep(2000000);
            cout<<"\t\t\t\t"<<battingTeam->name<<" "<<battingTeam-
>totalRunsScored<<"-"<<battingTeam->wicketsLost<<"("<<
             bowlingTeam->totalBallsBowled<<")"<<endl;
            cout<<"\t\t\t"<<bowlingTeam->name<<"needs"<<battingTeam-
>totalRunsScored +1<<"runs to win the match"<<endl<<endl;
            return false;
        }
}else{
    if(battingTeam->totalRunsScored > bowlingTeam->totalRunsScored){            //else second
innings start.
            cout<<"\t\t "<<battingTeam->name<<"win the match"<<endl;
```

```
   return false;

        }else if(bowlingTeam->totalBallsBowled==maxBalls||battingTeam-
>wicketsLost==playersPerTeam){

            if(bowlingTeam->totalRunsScored > battingTeam->totalRunsScored){

                cout<<"\t\t "<<bowlingTeam->name<<"win the match"<<endl;


        }else if(battingTeam->totalRunsScored==bowlingTeam->totalRunsScored){

                    cout<<"\t\t\t"<<" MATCH TIE"<<endl;

        }

        return false;

 }

}

    return true;

}

    void Game :: showGameScorecard(){

        cout<<"\n|------------------------------------------------------------------|"<<endl;

        cout<<"\t"<<battingTeam->name<<"\t"<<battingTeam->totalRunsScored<<"-
"<<battingTeam->wicketsLost<<"("<<

          " "<<bowlingTeam->totalBallsBowled<<")"<<batsman->name<<" "<<batsman-
>runsScored<<"("<<batsman->ballsPlayed<<")\t"<<

             bowler->name<<" "<<bowler->ballsBowled<<"-"<<bowler->runsGiven<<"-
"<<bowler->wicketsTaken<<"\t"<<endl;

        cout<<"\n|------------------------------------------------------------------|"<<endl;

    }

void Game :: startSecondInnings(){


    cout<<"\t\t\t |||  SECOND INNINGS STARTS |||"<<endl<<endl;

    isFirstInnings=false;

    initializePlayers();

    bowler=&battingTeam->players[0];
```

```
            batsman=&bowlingTeam->players[0];

            swap(battingTeam,bowlingTeam);

            cout<<"\t\t"<<battingTeam->name<<"-"<<batsman->name<<" is batting"<<endl;

            cout<<"\t\t"<<bowlingTeam->name<<"-"<<bowler->name<<" is bowling"<<endl;

            playInnings();


}

 void Game :: showMatchSummary(){

            cout<<"\t\t\t MATCH SUMMARY"<<endl;

            vector< Player>teamAplayers= teamA.players;

            vector<Player>teamBplayers= teamB.players;

            cout<<"\n\t\t\t|----------------------------------|"<<endl;

            cout<<"\t\t\t|==============TEAM-A==============|"<<endl;

            cout<<"\t\t\t|----------------------------------|\n"<<endl;

            for(int i=0;i<playersPerTeam;i++){

            cout<<"\t\t\t"<<"["<<i<<"]"<<teamAplayers[i].name<<"\t"<<teamAplayers[i].runsScored<<"-
("<<teamAplayers[i].ballsPlayed<<

              ")\t"<<teamAplayers[i].runsGiven<<"-"<<teamAplayers[i].wicketsTaken<<"-
"<<teamAplayers[i].ballsBowled<<"\n"<<endl;


  }

            cout<<"\n\t\t\t|----------------------------------|"<<endl;

            cout<<"\t\t\t|==============TEAM-B==============|"<<endl;

            cout<<"\t\t\t|----------------------------------|\n"<<endl;

            for(int i=0;i<playersPerTeam;i++){

            cout<<"\t\t\t"<<"["<<i<<"]"<<teamBplayers[i].name<<"\t"<<teamBplayers[i].runsScored<<"-
("<<teamBplayers[i].ballsPlayed<<

            ")\t"<<teamBplayers[i].runsGiven<<"-"<<teamBplayers[i].wicketsTaken<<"-
"<<teamBplayers[i].ballsBowled<<"\n"<<endl;
```

```
 }
  cout<<endl<<endl<<"\t\t\t\t MATCH END\n\n\n";
}
```