

Project 2

NBA ALL-STARS

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CSC 5- C++

Introduction

Instead of coding one of my favorite games that has already been made, I have created my own original game centered around my favorite sport. The title of my game is NBA All-Stars and the premise of the game is to allow the player to play in a one on one pickup up game against their choice of four of the best basketball players in the world. The first player to score three points wins. Along with the choice of the opponent, the user also get to choose the arena where the game will take place. The game consists of a maximum of five possessions in which either the user or the opponent will score a point. Each possession is like its own mini game, the player is given a set of instructions on how to score and if the player fails, then the opponent scores. I attempted to make each possession different in order to keep the user engaged throughout the entire game. The results of the game including the player's name, the opponent, the location, and whether they won or loss will be output to a file in the project folder.

Here is a quick breakdown of how each possession goes.

First - Player chooses left or right in order to force the opponent a specific way

Second - A timed possession where the user has 5 seconds to input a character

Third - Another guess by the user, this time the correct answer is generated randomly

Fourth - User must select a location on a simulated basketball court

Fifth - Trivia question involving all of the possible opponents

Variables

Variable Name	Data Type	Purpose
player	string	The users name
opponent	string	The opponents name
crtName	string	The name of the court
selOp	unsigned short	Users number input for opponent selection
court	unsigned short	Users number input for opponent selection
guesTyp	unsigned short	Users choice of shot type
ranTyp	unsigned short	Random shot ype
selFor	unsigned character	Users choice of shot type
ready	unsigned character	Getting the user ready for next possession
shoot	unsigned character	User input to shoot
plyAgn	unsigned character	User input to play again or not
force	boolean	Dtermines ifuser chose left or right
ppts	unsigned short	Players total points
oppts	unsigned short	Opponents total points
begTime	unsigned integer	Beginning time for timed possession

endTime	unsigned integer	Ending time for timed possession
totTime	unsigned integer	Total time for timed possession
reDsply	boolean	Determines whether to replay game
SIZE	constant integer	Sets the size of the location array
crt[]	integer array	Holds the choices for the shot locations
loc	short	User's location selection (fourth poss)
row	integer	Sets number of rows for the name array
col	integer	Sets number of columns for the name array
names[]	string array	Holds the names of the opponents (fifth)
name	string	Users inputs to fill in names array
players	string array	Used to store all of the players that have played
scores	integer array	Used to store the scores of the players

Constructs & Concepts

Construct/Concept	Purpose	Location
switch	Getting the name of the court	Line 103
while	Used for quick spacing	Line 201
do-while	Used to redisplay the entire game	Line 67
if-else	Get opponents name	Line 74
ternary operator	Used to output a win or lose statement	Line 158
for loop	Mostly used for quick spacing	Line 160
writing to a file	Writes the game results to a file	Line 401
function with no return	Used to fill and print the court	Line 423
function with return	Use a bool to return a true or false	Line 454
one dimensional array	Stores the possible shot locations	Line 326
two dimensional array	Stores the players names	Line 358
pass by value	Pass integers into a void function	Line 445
pass by reference	Pass players names that are inputted	Line 491
pass array between function	Pass the court between void functions	Line 423
sort	Sort Players high scores	Line 500

Pseudocode

Display Header

Declare Variables

Open File to store game results

Welcome user

Ask to enter the users name

read in as string

Ask to select opponent

read in as short

Set name of opponent equal to string using if else

if number inputted equals 1 set opponent equal to LeBron James

else if number inputted equals 2 set opponent equal to LeBron James

else if number inputted equals 3 set opponent equal to Kobe Bryant

else if number inputted equals 4 set opponent equal to James Harden

Do this while the user does not enter a valid input

Ask to select arena

Use switch to set court equal to a string

Case 1 is staples center

Case 2 is Madison Square Garden

Case 3 is Pauley Pavilion

Case 4 is Rucker Park

Start game

First Possession

Instruct user to force player left or right

If user chose steph curry the player loses and opponent score

else if user chose kobe bryant or lebron james

*Use ternary operator to display the user won if the user chose left and add a point
or display a loss if the user chose right and add a point to opponent*

else if user chose James Harden

*Use ternary operator to display the user won if the user chose right and add a point
or display a loss if the user chose left and add a point to opponent*

Second Possession

Give player instructions for this possession

Ask to input character when ready

Ask to quickly press 's' to shoot

begin timer before input and end after input

*if the total time it took is longer than 5 seconds display loss message and add point to
opponent*

else display win message and add point to player

Third Possession

Display final possession instructions

Ask user to input what type of shot they predict opponent to take

read in as int

generate a random number using rand%3

do this while the random number equals a 1

if random number and player guess are equal display win message and add point to user

else add point to opponent and display loose message

Fourth Possession

if neither player has 3 points then go on

Give instructions for the possession

Call function to fill the court array

Call function to print the court array

Ask for users guess of the location

if the guess matches the location set for the opponent they chose then display win message and add point to player score

else display lose message and add point to opponents score

Fifth Possession

if the score is tied then continue

Display instructions for the possession

fill the first column of the names array

ask user to input the names in the correct order

fill the second column of the names array with users inputs

check to see if the columns match

if yes then display win message and add point to player

else then display lose message and add point to opponent

if the player has 3 points then tell them they won the game

else if the opponent has 3 points they lost the game

add to the scores and players array counter

input the score and name of the player into an array for this game

close the file

ask to play again

if yes, restart the game

else continue in main

sort the players scores from highest to lowest

display all of the players that have played so far in order from highest to lowest

end the program

Sample Input/Output

```
*****
**                      NBA ALL STARS                      **
**                      Created By:  Ryan DeLeon           **
*****
```

WELCOME TO NBA ALLSTARS

Please enter the name of your player. (First name only please)

Ryan

Cool, so you're Ryan.

Which NBA ALL-STAR would you like to go up against?

Enter the number of the opponent you choose.

1. Lebron James
2. Kobe Bryant
3. Steph curry
4. James Harden

2

They dont call Kobe the Black Mamba for nothing, Good Luck!

One last thing, pick the arena you would like to play in.

1. Staples Center
2. Madison Square Garden
3. Pauley Pavilion
4. Rucker Park

Enter the number next to the court you want.

3

Welcome to Pauley Pavilion. Home of the UCLA Bruins.

Ok now lets start the game. First player to score 2 points wins.

Each possession will have a different set of instructions and you
may need to react quickly so pay attention. BEGIN!

First Possession.

You check the ball to Kobe. Now since you're on defense
you have to force him to his off hand.

Enter 'L' to force Kobe left. Or 'R' to force him right

1

Nice move, forcing him left caused a turnover and an easy lay up for you. Your ball
The score is 1 - 0

Second Possession.

Ok now its your turn to show what you got. This possession requires some quick reflexes so enter any character when ready.

s

You were able to create space against the much older Bryant, quick, press 'S' to shoot.

s

You were to slow and the shot got blocked, causing an easy bucket for Kobe.

The score is 1 - 1

Third Possession.

For this possession you have to guess what type of shot you think Kobe is going to take.

Enter 2 if you think he will take a two pointer.

Enter 3 if you think he will take a three pointer.

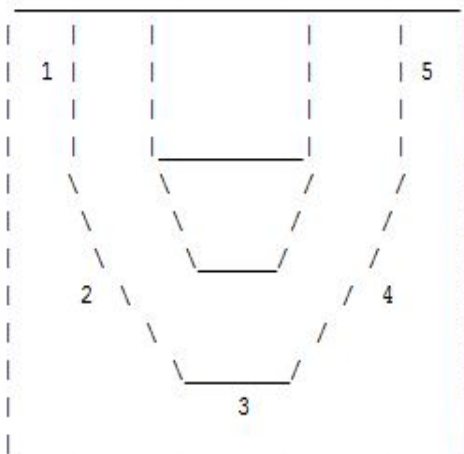
2

You guessed right and blocked the shot! Then scored a Basket!

The score is 2 - 1

Fourth possession.

For this possession you have to choose which spot you think Kobe will shoot from on the court. Good Luck!



Where do you think Kobe will shoot from?

5

Sorry you ran to the wrong spot...

The score is 2 - 2

Final Possession. Next Score wins.

This last round is a little different so read carefully.

To score this last point you must list the playable opponents in order of youngest to oldest.

Be sure to press enter once you've finished typing each person.

Also, make sure to capitalize the first letter of each name...Proper english.

Enter the players name in order of youngest to oldest.

Steph

James

Lebron

Kobe

Correct Order	Your order
---------------	------------

Steph	Steph
-------	-------

James	James
-------	-------

Lebron	Lebron
--------	--------

Kobe	Kobe
------	------

You know your basketball.

Congratulations Ryan you beat Kobe in a 1v1
pickup game!! The game summary will be output to a file. Thank you
Would you like to play again? 'Y' or 'N'?
No will display the top players so far.
n

Here are the top players so far.

Top Players	Score
Ryan	3

Thank you for playing NBA ALLSTARS!

RUN SUCCESSFUL (total time: 1m 3s)

Source Code

```
//User Libraries
#include <cstdlib>
#include <iostream>
#include <string>
#include <ctime>
#include <fstream>
#include <iomanip>
using namespace std;

//System Libraries
//Global Constants
const int COL=2;
const int ROW=4;
//Function Prototypes
void fillCrt(int [], int);
void prntCrt(int [], int);
bool assgnLoc (int [], short, short);
void fillNames(string [ROW][COL],int ,int ,string &);
void sortScores(string[],int[],int);
//Execution Begins Here

int main(){

    //Variables for the scores and players array
    const int size=5;
    string players[size];
    int scores[size];
    int counter;

    //Open a file for game summary
    ofstream out;
    out.open("Game Summary.dat",ios::app);

    //Redisplay
    bool reDsply=true;
    do{

        //Declare Variables
        string player, oponent, crtNam;
        unsigned int selOp, court, guesTyp, ranTyp;
```

```

unsigned char selFor, ready, shoot, plyAgn;
bool force=true;
unsigned short ppts=0, opts=0; //Players and opponents points
unsigned int begTime, endTime, totTime=5, n=0;
const int SIZE=6;
int crt[SIZE];
short loc;
string names[ROW][COL];
string name;

```

```
//Header
```

```

cout<<endl;
cout<<"*****"<<endl;
cout<<"**          NBA ALL STARS          **"<<endl;
cout<<"**          Created By: Ryan DeLeon          **"<<endl;
cout<<"*****"<<endl;

```

```
//Set random seed
```

```
srand(static_cast<unsigned int>(time(0)));
```

```
//Player input
```

```

cout<<"WELCOME TO NBA ALLSTARS"<<endl;
cout<<"Please enter the name of your player. (First name only please)"<<endl;
cin>>player;

```

```
//Picking opponent
```

```

cout<<endl<<"Cool, so you're "<<player<<". "<<endl;
cout<<"Which NBA ALL-STAR would you like to go up against?"<<endl;
do{
cout<<"Enter the number of the opponent you choose."<<endl;
cout<<"1. LeBron James"<<endl;
cout<<"2. Kobe Bryant"<<endl;
cout<<"3. Steph curry"<<endl;
cout<<"4. James Harden"<<endl<<endl;
cin>>selOp;
if(selOp==1){
    cout<<endl<<"You chose to face the King, Good Luck."<<endl<<endl;
    oponent="Lebron";
}
else if(selOp==2){

```



```

        cout<<endl<<"They dont call Kobe the Black Mamba for nothing, Good
Luck!"<<endl<<endl;
        oponent="Kobe";
    }
    else if(selOp==3){
        cout<<endl<<"Dont let the babyface fool you, Steph is an assassin, Good
Luck!."<<endl<<endl;
        oponent="Steph";
    }
    else if(selOp==4){
        cout<<endl<<"Fear the beard, Good Luck!"<<endl<<endl;
        oponent="James";
    }
    else if(selOp<1 || selOp>4){
        cout<<"Sorry, I know you're scared but you gotta pick one"<<endl<<endl;
    }
}while (selOp<1 || selOp>4);

//Selecting arena
cout<<"One last thing, pick the arena you would like to play in."<<endl;
cout<<"1. Staples Center"<<endl;
cout<<"2. Madison Square Garden"<<endl;
cout<<"3. Pauley Pavilion"<<endl;
cout<<"4. Rucker Park"<<endl;
cout<<"Enter the number next to the court you want."<<endl<<endl;
cin>>court;
switch(court){
    case 1:{
        cout<<endl<<"Welcome to Staples Center. Home of the LA Lakers."<<endl;
        crtNam="Staples Center";
        break;
    }
    case 2:{
        cout<<endl<<"Welcome to Madison Square Garden. Home of the NY Knicks."<<endl;
        crtNam="Madison Square Garden";
        break;
    }
    case 3:{
        cout<<endl<<"Welcome to Pauley Pavilion. Home of the UCLA Bruins."<<endl;
        crtNam="Pauley Pavilion";
        break;
    }
    case 4:{

```

```

        cout<<endl<<"Welcome to Rucker Park. Streetball Central."<<endl;
        crtNam="Rucker Park";
        break;
    }
    default:{
        cout<<"Please select a court."<<endl;
        break;
    }
}
cout<<endl<<endl;
cout<<"Ok now lets start the game. First player to score 2 points wins."<<endl;
cout<<"Each possession will have a different set of instructions and you"<<endl
    <<"may need to react quickly so pay attention. BEGIN!"<<endl<<endl;

//First posession
cout<<"First Possession."<<endl<<endl;
cout<<"You check the ball to "<<oponent<<". Now since you're on defense"<<endl
    <<"you have to force him to his off hand."<<endl;
cout<<"Enter 'L' to force "<<oponent<<" left. Or 'R' to force him right"<<endl;
cin>>selFor;
selFor=toupper(selFor);

//Using ternary operator / And "For loop" for quick spacing
if (selFor=='L')
    force=false;
if (oponent=="Steph"){
    cout<<endl<<"Sorry, unfortunately you chose to play the best ball handler"<<endl
        <<"in the world so he has no off hand. You got crossed up and scored on. Your
ball"<<endl;
    opts++;
    cout<<"The score is "<<ppts<<" - "<<opts<<endl;
    for(unsigned short i=0;i<=5;i++){
        cout<<endl;
    }
}else if (oponent=="Kobe"){
    if (selFor=='R')
        opts++;
    else ppts++;
    cout<<(force?"Wrong move, Kobe is right handed and you get dunked on. Your ball":
        "Nice move, forcing him left caused a turnover and an easy lay up for you. Your
ball")<<endl;
    cout<<"The score is "<<ppts<<" - "<<opts<<endl;
    for(unsigned short i=0;i<=5;i++){

```

```

        cout<<endl;
    }
} else if (oponent=="Lebron"){
    if (selFor=='R')
        opts++;
    else ppts++;
    cout<<(force?"Wrong move, Lebron is right handed and you get dunked on. Your ball":
        "Nice move, forcing him left caused a turnover and an easy lay up for you. Your
ball")<<endl;
    cout<<"The score is "<<ppts<<" - "<<opts<<endl;
    for(unsigned short i=0;i<=5;i++){
        cout<<endl;
    }
} else if (oponent=="James"){
    if (selFor=='L')
        opts++;
    else ppts++;
    cout<<(force?"Wrong move, James is left handed and you get dunked on":
        "Nice move, forcing him right caused a turnover and an easy lay up for you. Your
ball")<<endl;
    cout<<"The score is "<<ppts<<" - "<<opts<<endl;
    for(unsigned short i=0;i<=5;i++){
        cout<<endl;
    }
}
}

```

//Second Possession, use while loop for quick spacing this time

```

cout<<"Second Possession."<<endl<<endl;
cout<<"Ok now its your turn to show what you got. This possession requires"<<endl
    <<"some quick reflexes so enter any character when ready."<<endl<<endl;
cin>>ready;
if (oponent=="Steph"){
    begTime=static_cast<unsigned int>(time(0));
    cout<<endl<<"You were able to back down the smaller Curry, "<<endl
        <<"quick, press 'S' to shoot."<<endl;
    cin>>shoot;
    endTime=static_cast<unsigned int>(time(0));
    if (totTime<=endTime-begTime){
        opts++;
        cout<<endl<<"You were to slow and the shot got blocked, causing an easy"<<endl
            <<"bucket for "<<oponent<<". "<<endl;
        cout<<"The score is "<<ppts<<" - "<<opts<<endl;
        while(n<5){

```

```

        cout<<endl;
        n++;
    }
}
else if (totTime>endTime-begTime) {
    ppts++;
    cout<<endl<<"Awesome! Your quick reactions paid off. Swish!"<<endl;
    cout<<"The score is "<<ppts<<" - "<<opts<<endl;
    while(n<5){
        cout<<endl;
        n++;
    }
}
}
else if (oponent=="Kobe"){
    begTime=static_cast<unsigned int>(time(0));
    cout<<endl<<"You were able to create space against the much older Bryant, "<<endl
        <<"quick, press 'S' to shoot."<<endl;
    cin>>shoot;
    endTime=static_cast<unsigned int>(time(0));
    if (totTime<=endTime-begTime){
        opts++;
        cout<<endl<<"You were to slow and the shot got blocked, causing an easy"<<endl
            <<"bucket for "<<oponent<<". "<<endl;
        cout<<"The score is "<<ppts<<" - "<<opts<<endl;
        while(n<5){
            cout<<endl;
            n++;
        }
    }
    else if (totTime>endTime-begTime) {
        ppts++;
        cout<<endl<<"Awesome! Your quick reactions paid off. Swish!"<<endl;
        cout<<"The score is "<<ppts<<" - "<<opts<<endl;
        while(n<5){
            cout<<endl;
            n++;
        }
    }
}
}
else if (oponent=="Lebron"){
    begTime=static_cast<unsigned int>(time(0));
    cout<<endl<<"You were able to run away form the slow giant Lebron, "<<endl
        <<"quick, press 'S' to shoot."<<endl;
    cin>>shoot;
    endTime=static_cast<unsigned int>(time(0));
    if (totTime<=endTime-begTime){

```

```

    opts++;
    cout<<endl<<"You were to slow and the shot got blocked, causing an easy"<<endl
        <<"bucket for "<<oponent<<". "<<endl;
    cout<<"The score is "<<ppts<<" - "<<opts<<endl;
    while(n<5){
        cout<<endl;
        n++;
    }
}
else if(totTime>endTime-begTime) {
    ppts++;
    cout<<endl<<"Awesome! Your quick reactions paid off. Swish!"<<endl;
    cout<<"The score is "<<ppts<<" - "<<opts<<endl;
    while(n<5){
        cout<<endl;
        n++;
    }
}
}
else if (oponent=="James"){
    begTime=static_cast<unsigned int>(time(0));
    cout<<"You were able to grab James' Beard and distract him., "<<endl
        <<"quick, press 'S' to shoot."<<endl;
    cin>>shoot;
    endTime=static_cast<unsigned int>(time(0));
    if (totTime<=endTime-begTime){
        opts++;
        cout<<endl<<"You were to slow and the shot got blocked, causing an easy"<<endl
            <<"bucket for "<<oponent<<". "<<endl;
        cout<<"The score is "<<ppts<<" - "<<opts<<endl;
        while(n<5){
            cout<<endl;
            n++;
        }
    }
    else if(totTime>endTime-begTime) {
        ppts++;
        cout<<endl<<"Awesome! Your quick reactions paid off. Swish!"<<endl;
        cout<<"The score is "<<ppts<<" - "<<opts<<endl;
        while(n<5){
            cout<<endl;
            n++;
        }
    }
}
}
//Third Possession

```

```

cout<<"Third Possession."<<endl<<endl;
cout<<"For this possession you have to guess what type of shot"<<endl
    <<"you think "<<oponent<<" is going to take."<<endl;
cout<<"Enter 2 if you think he will take a two pointer."<<endl;
cout<<"Enter 3 if you think he will take a three pointer."<<endl;
cin>>guesTyp;
//Randomly generate a 2 or 3
do{
    ranTyp=rand()%3+1;
}while(ranTyp==1);
if (guesTyp==ranTyp){
    ppts++;
    cout<<endl<<"You guessed right and blocked the shot! Then scored a Basket!"<<endl;
    cout<<"The score is "<<ppts<<" - "<<opts<<endl;
}else if (guesTyp==2 && ranTyp==3){
    opts++;
    cout<<endl<<"Oh No! You guessed wrong and started backing up expecting a
drive"<<endl;
    cout<<"but "<<oponent<<" shot it from outside and scored."<<endl<<endl;
    cout<<"The score is "<<ppts<<" - "<<opts<<endl;
}else if (guesTyp==3 && ranTyp==2){
    opts++;
    cout<<endl<<"Oh No! You guessed wrong and jumped expecting a shot"<<endl;
    cout<<"but "<<oponent<<" pump faked and scored an easy layup."<<endl<<endl;
    cout<<"The score is "<<ppts<<" - "<<opts<<endl;
}

//Fourth possession
for(unsigned short i=0;i<=5;i++){
    cout<<endl;
}
if (ppts==2 || opts==2){
    cout<<"Fourth possession."<<endl;
    cout<<"For this posession you have to choose which spot you think "
        <<oponent<<" will shoot from on the court. Good Luck!"<<endl;
    cout<<endl;

    //fill array
    fillCrt(crt,SIZE);
    //print the court
    prntCrt(crt,SIZE);
}

```

```

//Get players guess
cout<<"Where do you think "<<oponent<<" will shoot from?"<<endl;
cin>>loc;

if (assgnLoc(crt, selOp, loc)){
    cout<<endl<<"You chose correctly and beat him to the spot! You scored!"<<endl;
    ppts++;
}
else {
    cout<<endl<<"Sorry you ran to the wrong spot..."<<endl;
    opts++;
}
cout<<"The score is "<<ppts<<" - "<<opts<<endl;
}

//Fifth possession
for(unsigned short i=0;i<=5;i++){
    cout<<endl;
}
if(ppts==opts){
    cout<<"Final Posession. Next Score wins."<<endl;
    cout<<"This last round is a little different so read carefully."<<endl;
    cout<<"To score this last point you must list the playable opponents "
        <<"in order of youngest to oldest."<<endl;
    cout<<"Be sure to press enter once you've finished typing each person."<<endl;
    cout<<"Also, make sure to capitalize the first letter of each name...Proper english."<<endl;

//Call names function
fillNames(names,ROW,COL,name);

//label columns
cout<<"Correct Order    Your order"<<endl;
for(int i=0; i<ROW; i++)
    cout<<names[i][0]<<setw(20)<<names[i][1]<<endl;

//check the columns
if(names[0][0]==names[0][1] && names[1][0]==names[1][1] &&
    names[2][0]==names[2][1] && names[3][0]==names[3][1]) {
    cout<<endl<<"You know your basketball."<<endl;
    ppts++;
}
else {

```

```

    cout<<endl<<"Looks like you dont know your basketball."<<endl;
    opts++;
}
}

```

//Outputting to a file

```

out<<endl<<"Your player name was "<<player<<". "<<endl;
out<<"You played against "<<oponent<<". "<<endl;
out<<"The game took place at "<<crName<<". "<<endl;

```

```

if (ppts==3){

```

```

    cout<<endl<<"Congratulations "<<player<< " you beat "<<oponent<< " in a 1v1"<<endl
    <<"pickup game!! The game summary will be output to a file. Thank you"<<endl;
    out<<"You won the game."<<endl;
    out<<"The score was "<<ppts<< " - "<<opts<<endl;

```

```

}else if (opts==3){

```

```

    cout<<endl<<"Im sorry "<<player<< " you lost to "<<oponent<< " in a 1v1"<<endl
    <<"pickup game!! The game summary will be output to a file."<<endl;
    out<<"You lost the game."<<endl;
    out<<"The score was "<<ppts<< " - "<<opts<<endl;

```

```

}

```

//Ask to play again

```

cout<<"Would you like to play again? 'Y' or 'N'? "<<endl;
cout<<"No will display the top players so far."<<endl;
cin>>plyAgn;
plyAgn=toupper(plyAgn);
if(plyAgn!='Y') reDsply=false;

```

//top scores

```

counter++;
players[counter]=player;
scores[counter]=ppts;

```

```

}while(reDsply);

```

```

//Sort top Scores, on;y sorts the players score not the opponents
sortScores(players,scores,size);

```

//Display The top scores


```
cout<<endl<<"Here are the top players so far."<<endl;
cout<<"Top Players"<<"    "<<"Score"<<endl;
for(int i=0;i<counter;i++)
cout<<players[i]<<setw(15)<<scores[i]<<endl;

//Close file
out.close();

//Say goodbye
cout<<endl<<"Thank you for playing NBA ALLSTARS!"<<endl;
return (0);
}

//00000000111111111122222222223333333333344444444445555555555666666666677777777
778
//345678901234567890123456789012345678901234567890123456789012345678901234567
890
//                                Print Court
//*****
void prntCrt(int crt[],int n){
    cout<<endl;
    cout<<"_____ "<<endl;
    cout<<"|   |   |   |   |   | "<<endl;
    cout<<"| "<<crt[1]<<"|   |   |   | "<<crt[5]<<"| "<<endl;
    cout<<"|   |   |   |   |   | "<<endl;
    cout<<"|   |_____|   |   | "<<endl;
    cout<<"|   ||   /   /   | "<<endl;
    cout<<"|   ||   /   /   | "<<endl;
    cout<<"|   ||___/   /   | "<<endl;
    cout<<"|   "<<crt[2]<<"||   /   "<<crt[4]<<"| "<<endl;
    cout<<"|   ||   /   | "<<endl;
    cout<<"|   ||___/   | "<<endl;
    cout<<"|   "<<crt[3]<<"| "<<endl;
    cout<<"|_____|"<<endl;
    cout<<endl;
}

//00000000111111111122222222223333333333344444444445555555555666666666677777777
778
//345678901234567890123456789012345678901234567890123456789012345678901234567
890
//                                Fill Array
//*****
```

```

void fillCrt(int crt[],int n){
    for(int i=1;i<n;i++){
        crt[i]=i;
    }
}

//000000011111111112222222223333333333444444444455555555556666666666777777777
778
//345678901234567890123456789012345678901234567890123456789012345678901234567
890
//          Assign opponent a different location
//*****

bool assgnLoc(int c[], short s, short l){
    if (s==1 && l==1) return true;
    else if (s==2 && l==2) return true;
    else if (s==3 && l==4) return true;
    else if (s==4 && l==5) return true;
    else return false;
}

void fillNames(string n[ROW][COL],int row, int col, string &nam){
    //Filling first column
    n[0][0]="Steph";
    n[1][0]="James";
    n[2][0]="Lebron";
    n[3][0]="Kobe";
    cout<<endl<<"Enter the players name in order of youngest to oldest."<<endl<<endl;
    //Filling second column
    for(int i=0; i<row; i++){
        cin>>nam;//Loop for the rows
        n[i][1] = nam; //Fills second column
    }
}

//000000011111111112222222223333333333444444444455555555556666666666777777777
778
//345678901234567890123456789012345678901234567890123456789012345678901234567
890
//          Sort the players scores
//*****

void sortScores(string p[],int s[], int size)
{
    int scan, smlstPl, smallest, temp;

```

```
for (scan=size-1;scan>0;scan--){
    smlstPI=0;
    smallest=s[0];
    for (int i=1;i<=scan;i++){
        if (s[i]<s[smlstPI]){
            smlstPI=i;
        }
    }
    std::swap(s[smlstPI], s[scan]);
    std::swap(p[smlstPI], p[scan]);
}
}
```