Name: Harshal Jaywant Chavan

Class: FYMCA

Division: A

Subject: Data Structures

Assignment: Add remove method in Scoreboard class and implement it. Submit the program with output.

Code:

```
//Program: - Add remove method in Scoreboard class and implement it. Submit the program with output.

//Author: - Harshal Chavan

//Date: - 07/02/2021

#include<iostream>

using namespace std;

class PlayerList {

	private:

		string name;

		int score;

	public:

		PlayerList(string n=" ",int s=0);

		string getName();

		int getScore();

};

PlayerList::PlayerList(string n,int s) {

	name = n;

	score = s;

}

string PlayerList :: getName(){

	return name;

}

int PlayerList::getScore(){

	return score;

}

class ScoreBoard{

	private:
```

```
		int maxEntries;//maximum number of entries=5//used to create memory space
		int numEntries;//actual entries//actual use of memory space
		PlayerList* entries;//array of player scores
	public:
		ScoreBoard(int maxEnt);
		~ScoreBoard();
	void add(PlayerList& e);//retrive the scores from PlayerList
	void display();
	void search();
	void remove() {
		int score;
		int i;
		int found=0;
		cout<<"\n\n\nPlease provide the score which you would like to remove: ";
		cin>>score;
		for(i=0;i<5;i++){
			if(score==entries[i].getScore()) {
				found++;
				cout<<"Removing Player named: "<<entries[i].getName()<<"\n";
				for(int j=i;j<maxEntries-1;j++) {
					entries[j]=entries[j+1];
				}
				maxEntries--;
			}
		}
		if(found==0) {
			cout<<"Player with provided score is not available \n";
		}
	}
};
ScoreBoard::ScoreBoard(int maxEnt){
	maxEntries=maxEnt;
	entries = new PlayerList[maxEntries];//size of array is 5
```

```
	numEntries=0;
}
ScoreBoard::~ScoreBoard(){
	delete[] entries;
}
void ScoreBoard::add(PlayerList& e) {
	int newScore = e.getScore();//60
	if(numEntries==maxEntries)//checking for array space
	//maxEntry = 5
	//numEntry =5
	{
		if(newScore <= entries[maxEntries-1].getScore())//5-1=4
		//60<=10
		return;
	}
	else numEntries++;
	int i = numEntries - 2;//3
	while(i>=0 && newScore>entries[i].getScore())//finding the place for new score
	{
		entries[i+1]=entries[i];
		i--;
	}
	entries[i+1]=e;
}
void ScoreBoard::display()
{
	cout<<"Score Board size is "<<maxEntries<<"\n";
	for(int i=0;i<maxEntries;i++)
	cout<<entries[i].getName()<<" "<<entries[i].getScore()<<endl;
}
void ScoreBoard::search()
{
	int key;
```

```
        cout<<"Enter Score to Perform search operation: ";
        cin>>key;
        int i;
        for(i=0;i<5;i++)
        {
                if(key==entries[i].getScore())
                break;
        }
        cout<<"Player with given score is "<<entries[i].getName();}
int main()
{
        PlayerList harshal("Harshal",100);
        PlayerList sourabh("Sourabh",60);
        PlayerList vinayak("Vinayak",55);
        PlayerList nikita("Nikita",50);
        PlayerList rajan("Rajan",40);
        PlayerList lekha("Lekha",30);
        ScoreBoard s(5);
        s.add(sourabh);
        s.add(nikita);
        s.add(harshal);
        s.add(vinayak);
        s.add(lekha);
        s.add(rajan);
        cout<<"Top 5 Scores are \n";
        s.display();
        s.search();
        s.remove();
        cout<<"Updated Score Board :\n";
        s.display();
        return 0;
}
```

Output:

Scenario 1: Player found with given score and removed from scoreboard.

```
Top 5 Scores are
Score Board size is 5
Harshal 100
Sourabh 60
Vinayak 55
Nikita 50
Rajan 40
Enter Score to Perform search operation: 55
Player with given score is Vinayak

Please provide the score which you would like to remove: 55
Removing Player named: Vinayak
Updated Score Board :
Score Board size is 4
Harshal 100
Sourabh 60
Nikita 50
Rajan 40

--------------------------------
Process exited after 5.623 seconds with return value 0
Press any key to continue . . .
```

Scenario 2: Player not found with provided score.

```
Top 5 Scores are
Score Board size is 5
Harshal 100
Sourabh 60
Vinayak 55
Nikita 50
Rajan 40
Enter Score to Perform search operation: 55
Player with given score is Vinayak

Please provide the score which you would like to remove: 567
Player with provided score is not available
Updated Score Board :
Score Board size is 5
Harshal 100
Sourabh 60
Vinayak 55
Nikita 50
Rajan 40

--------------------------------
Process exited after 5.786 seconds with return value 0
Press any key to continue . . .
```