IM/2019/109-Numaya Pradeepani

Homework 7

Q1

a) t [2][5] in this array there 2 rows and 5 columns. t is a 2D array of integer type. It has 10 separate memory locations and can store only integer literals.

b) 2

c) 5

d) 10

e) t[1][0]
t[1][1]
t[1][2]
t[1][3]
t[1][4]

f) t[0][3]
t[1][3]

g) t[1][2]=0

h)
```
for(int i=0; i<2; i++)
    for(int j=0; j<5; j++)
        t[i][j]=0;
```

i)
```
int t[2][5];
for(int i=0; i<2; i++){
    for(int j=0; j<5; j++){
        cout<<"Input integer value for row"<<i+1<<"/column"<<j+1<<":";
        cin>> t[i][j];
    }
```

```
}
```

j)
```
Int min=0;
min=t[0][0];
for(int i=0; i<2; i++)
   for(int j=0; j<5; j++)
    if(min>t[i][j])
      min=num[i][j];
cout<<"Smallest number:"<<min<<endl;
```

k)
```
for(int i=0; i<2; i++)
  for(int j=0; j<5; j++)
  cout<<t[0][j];
```

l)
```
Int Tot;
     For(int i=0; i<2; i++){
           Tot=Tot+t[i][3];
      }
Cout<<"total:"<<Tot<<endl;
```

m)
```
#include<iostream>
using namespace std;
int main (){
     int t[2][5];
   for(int i=0; i<2; i++){
     for(int j=0; j<5; j++){
```

```
            cout<<"Input integer value for row"<<i+1<<"/column"<<j+1<<":";
            cin>> t[i][j];
        }
}
    cout<<"\n Two Dimensional Array is : \n";
        for(int i=0; i<2; i++){
                for(int j=0; j<5; j++){
                        cout<<" "<<t[i][j]<<" ";
                        }
             cout<<"\n";
                }
                return 0;

}
```

Q2

```
#include<iostream>
using namespace std;
int main(){
	int s[10]; //define the array
	int CI=0; //customer choice
	int firstclass=0, economic=5;
//assign value of each seat is 0
	for(int i=0;i<10;i++){
		s[10]=0;
	}
	while(firstclass<5 || economic<10){
		cout<<"Welcome to XYZ Airlines"<<endl;
		cout<<"..................................."<<endl;

		cout<<"Please type 1 for first class or Please type 2 for economy: ";
	   cin>>CI;
	   while(!(CI==1 || CI==2)){
		cout<<"Invalid Input Please enter again"<<endl;
		cout<<"Please type 1 for first class or Please type 2 for economy: ";
		cin.clear();
		cin.ignore();
			cin>>CI;
		}
		if(CI==1){
			if(firstclass<5){
				cout<<"Boarding Pass" <<endl;
				cout<<"................"<<endl;
				cout<<"Seat number:"<<(firstclass+1)<<endl;
```

```
                cout<<"Section: Firstclass"<<endl;
                s[firstclass]=1;
                firstclass++;
        }
        else if (economic<10){
                char CI1='\0';
                while(!(CI1=='Y'|| CI1=='y'|| CI1=='N' || CI1=='n')){
                        cout<<"Firstclass is filled. Do you like to book a seat in
economic section?:"<<endl;
                        cout<<"If yes type 'Y', If no type 'N' :";
                        cin>>CI1;

                        if(!(CI1=='Y'|| CI1=='y'|| CI1=='N' || CI1=='n')){
                                cout<<"Invalid input please enter again:"<<endl;
                                cout<<"If yes type 'Y', If no type 'N' :";
                                cin.clear();
                                cin.ignore();
                                cin>>CI1;
                        }
                        if(CI1=='Y' || CI1=='y'){
                                cout<<"Boarding Pass" <<endl;
                cout<<"............."<<endl;
                cout<<"Seat number:"<<(economic+1)<<endl;
                cout<<"Section: Economic section "<<endl;
                s[economic]=1;
                economic++;
                        }
                        else if(CI1=='N'|| CI1=='n'){
                                cout<<"Next flight leaves in 3 hours"<<endl;
```

```
                                        }
                                }
                        }
                }
                if(Cl==2){
                        if(economic<10){
                                cout<<"Boarding Pass" <<endl;
                                cout<<"..............."<<endl;
                                cout<<"Seat number:"<<(economic+1)<<endl;
                                cout<<"Section: Economic section"<<endl;
                                s[economic]=1;
                                economic++;

                        }
                        else if (economic=10){
                                cout<<"Economic section is filled. Next flight leaves in 3
hours"<<endl;
                        }
                }
        }
}
```

Q3

```
#include<iostream>
#include<string.h>
using namespace std;
int main(){
    char s[100];
    char word;
    cout<<"Enter a word:";
    cin.getline(s,100);
    cout<<endl<<endl;

    int len=strlen(s);
    for(int i=0; i<len; i++){
        if(s[i]>=97 && s[i]<=122){
            s[i]=s[i]-32;
        }
    }
    cout<<"Text in uppercase:"<< s<< endl<<endl;

    len=strlen(s);
    for(int i=0; i<len; i++){
        if(s[i]>=65 && s[i]<=90){
            s[i]=s[i]+32;
        }
    }
    cout<<"Text in lowercase:"<< s << endl<<endl;

}
```

Q4

```
#include<iostream>
#include<string.h>
using namespace std;

int main(){
	char str1[100], str2[100];

	cout<<"Input word1:";
	cin.getline(str1,100);

	cout<<"Input word2:";
	cin.getline(str2,100);

	int compare=strcmp(str1,str2);

	if(compare==0){
		cout<<" Words are equal"<<endl;
	}
	else if (compare==1){
		cout<<"word1 is greater than word2"<<endl;
	}
	else if (compare==-1){
		cout<<"word1 is less than word2"<<endl;
	}
	return 0;
}
```

Q5

```
#include <iostream>
#include <cstring>
using namespace std;

int main() {
  char string[100], *token;
  int count = 0;

  cout << "Enter a string:";
  cin.getline(string, 100);
  token = strtok(string, " ");

  while(NULL != token) {
        count++;
   token = strtok(NULL, " ");
  }
  cout << "Word Count : "<<count<<endl;
  return 0;
}
```

Q6

```
#include<iostream>
#include<string.h>
using namespace std;
int main(){
	int distance[4][4]={0,30,212,300,30,0,195,225,212,195,0,200,300,225,200,0};
	int total=0;
	int i,j;
	cout<<"Welcome to the trip advicer !!!!"<<endl;
	cout<<"....."<<endl;
	cout<<"Enter1-Negombo"<<endl;
	cout<<"Enter2-Colombo"<<endl;
	cout<<"Enter3-Kandy"<<endl;
	cout<<"Enter4-Matara"<<endl;

	int CL; //current location
	cout<<"Please enter your current location:";
	cin>>CL;
	cout<<endl<<endl;
	if(!(CL==1 || CL==2 || CL==3 || CL==4)){
		cout<<"Invalid input please again enter current location:";
		cin.clear();
		cin.ignore();
		cin>>CL;
```

```
}


int dest;//destination
cout<<"Please enter your destination:";
cin>>dest;
cout<<endl<<endl;
if(!(dest==1|| dest==2 || dest==3 || dest==4)){
        cout<<"Invalid input please again enter detination";
        cin.clear();
        cin.ignore();
        cin>>dest;
}
char more='\0';
while(!(more=='Y'|| more=='y'|| more=='N' || more=='n')){
        cout<<"Do you wish to travel further( if yes 'y', if no 'n'):";
   cout<<more;


   if(!(more=='Y'|| more=='y'|| more=='N' || more=='n')){
        cout<<"Invalid input please enter again:"<<endl;
                cout<<"If yes type 'Y', If no type 'N' :";
                cin.clear();
                cin.ignore();
                cin>>more;
```

```
                }
                int finaldest;
                if(more=='Y' || more=='y'){
                        cout<<"please enter your final distance:";
                        cin>>finaldest;
                        cout<<endl;
                        for(i=0; i<4; i++){
                                for(j=0;j<4;j++){
                                        total=distance[CL-1][dest-1]+distance[dest-1][finaldest-1];
                                }
                        }
                        cout<<"Total distance :"<<total<<"km"<<endl;
                }
                else {
                        for(i=0; i<4; i++){
                                for(j=0;j<4;j++){
                                        total=distance[CL-1][dest-1];
                                }
                        }
                        cout<<"Total distance :"<<total<<"km"<<endl;
                }
        }
}
```