PF Lab Assessment

Q1:

Main Function:

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

bool is_same_num(int, int,int);
void largest_digit(int , int, int);
int main() {
    int num1,num2,num3;
    cin>> num1 >> num2 >> num3;
    if (is_same_num(num1,num2,num3)) cout<<"All numbers are same"<<endl;
    else largest_digit(num1,num2,num3);
    return 0;
}
```

Function to check same number:

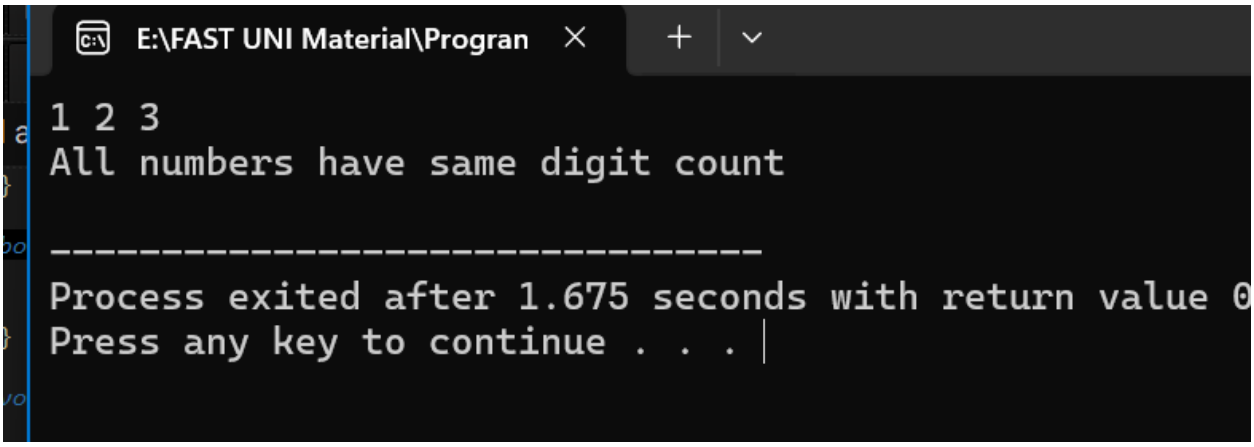
```cpp
    if (is_same_num(num1,num2,num3)) cout<<"All numbe
    else largest_digit(num1,num2,num3);
    return 0;
}

bool is_same_num(int a, int b,int c) {
    if(a == b && a == c) return true;
    else return 0;
}
```

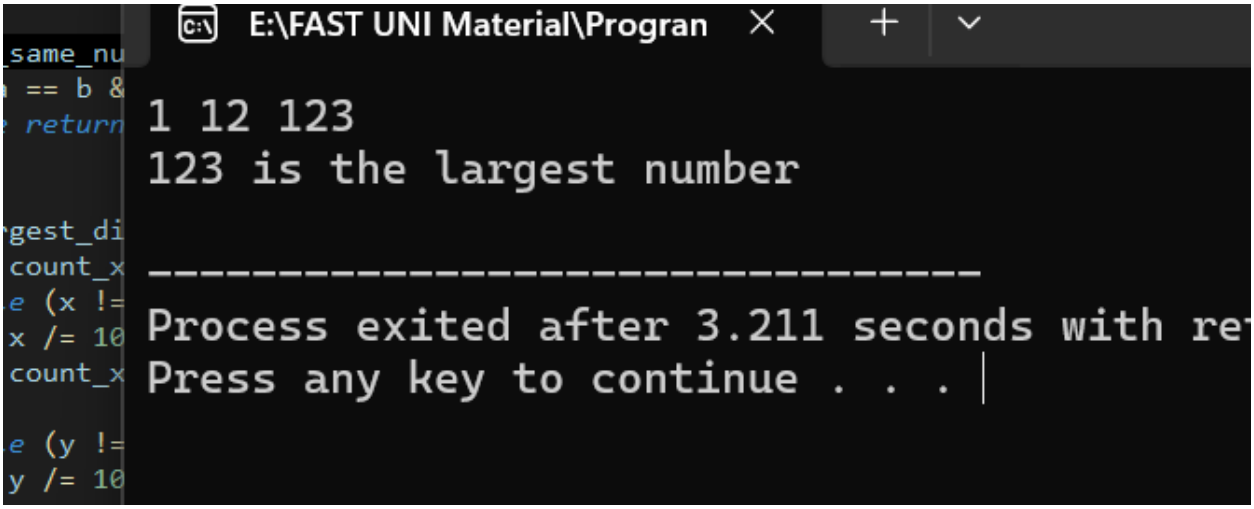
Function to check largest digit:

```cpp
void largest_digit(int x, int y, int z) {
    int count_x = 0,count_y = 0, count_z = 0, a = x , b =y ,c =z;
    while (x != 0) {
        x /= 10;
        count_x++;
    }
    while (y != 0) {
        y /= 10;
        count_y++;
    }
    while (z != 0) {
        z /= 10;
        count_z++;
    }
    if (x = 0) count_x = 1;
    if (y = 0) count_y = 1;
    if (z = 0) count_z = 1;

    if (count_x > count_y && count_x > count_z) cout<<a<<" is the largest number"<<endl;
    if (count_y > count_z && count_y > count_x) cout<<b<<" is the largest number"<<endl;
    if (count_z > count_x && count_z > count_y) cout<<c<<" is the largest number"<<endl;

    else cout<<"All numbers have same digit count"<<endl;
}
```

Output:

```
1 1 1
All numbers are same

--------------------------------
Process exited after 3.725 seconds with return value 0
Press any key to continue . . .
```





Q2:

Main function:

```
int main () {
    int choice;
    cout<<"*****Room Booking Management System*****"<<endl;
    cout<<"1. Display Rooms"<<endl<<"2. Book Rooms"<<endl<<"3. Exit"<<endl;

    cout<<"Enter your choice:"<<endl;
    cin>>choice;

    if(choice == 1) display_room();
    else if (choice == 2) book_room();
    else if(choice == 3) cout<<"Thanks for booking our hotel rooms"<<endl;

    return 0;
}
```

Function to display rooms:

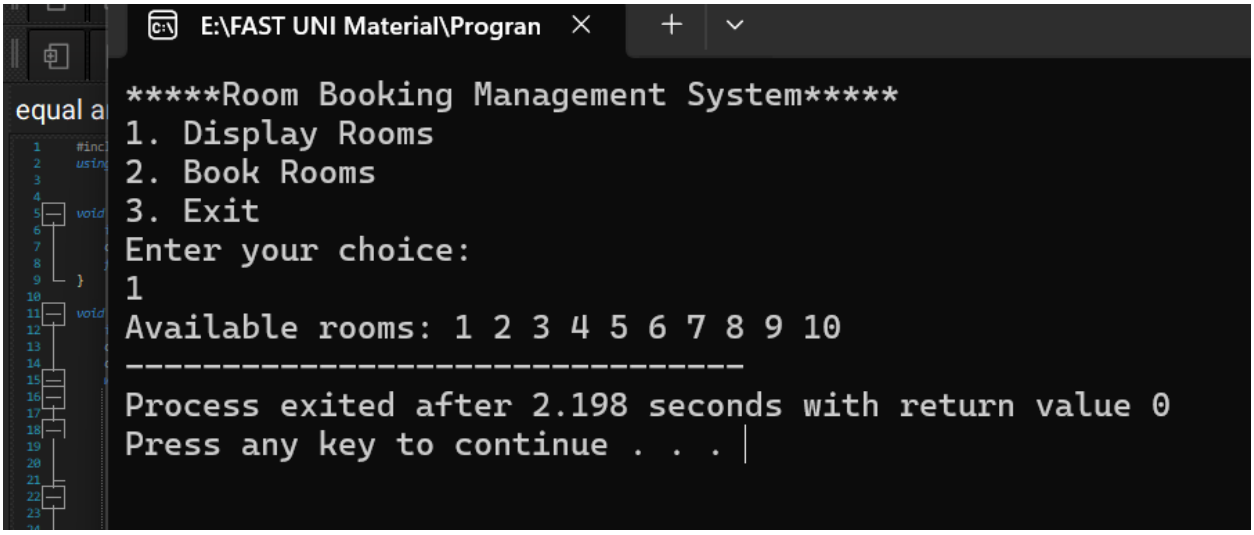
```
3
4
5  void display_room() {
6      int rooms[10] = {1,2,3,4,5,6,7,8,9,10};
7      cout<<"Available rooms: ";
8      for(int i = 0; i <10; i++) cout<<rooms[i]<<" ";
9  }
10
```

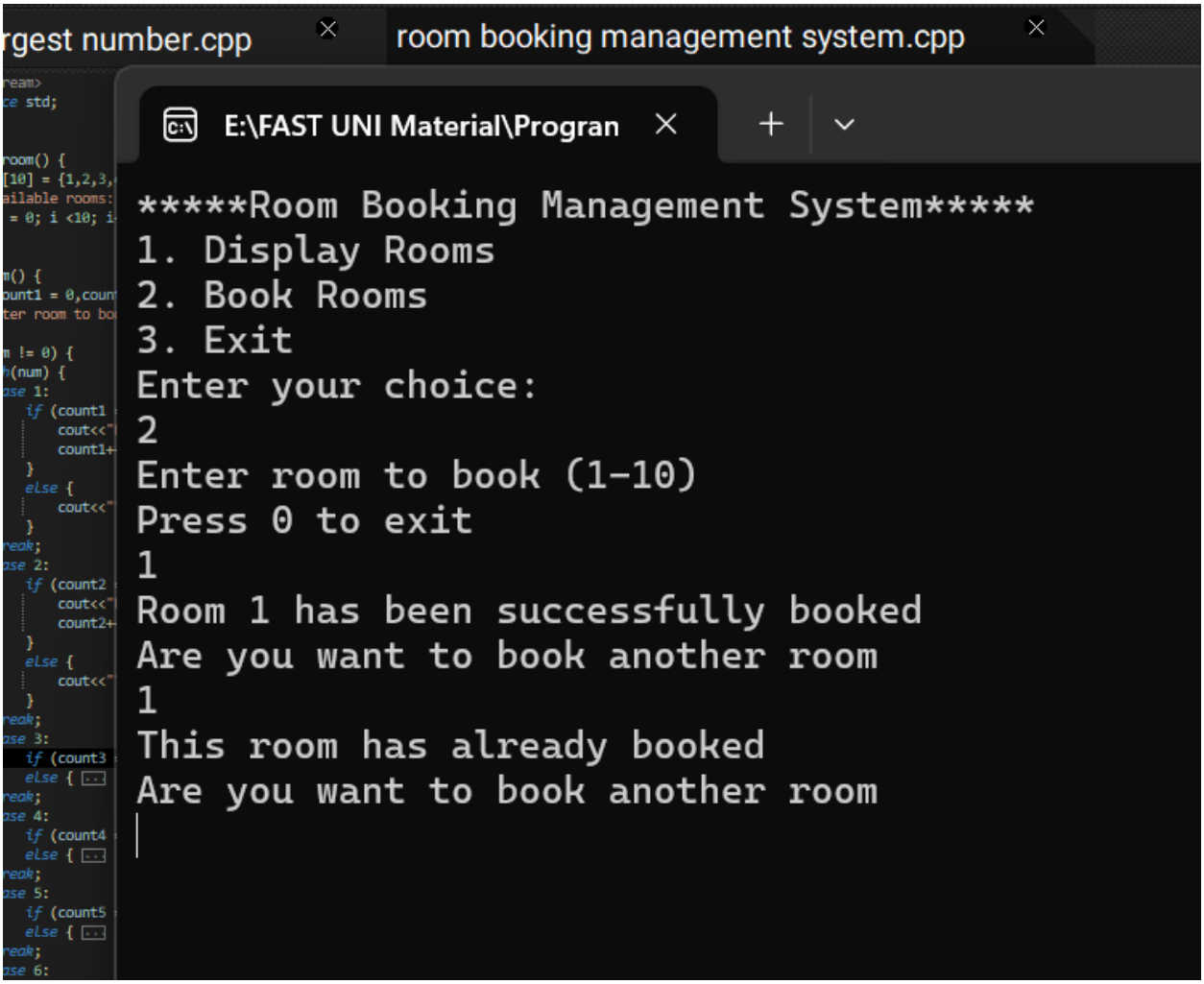
Function to book rooms:

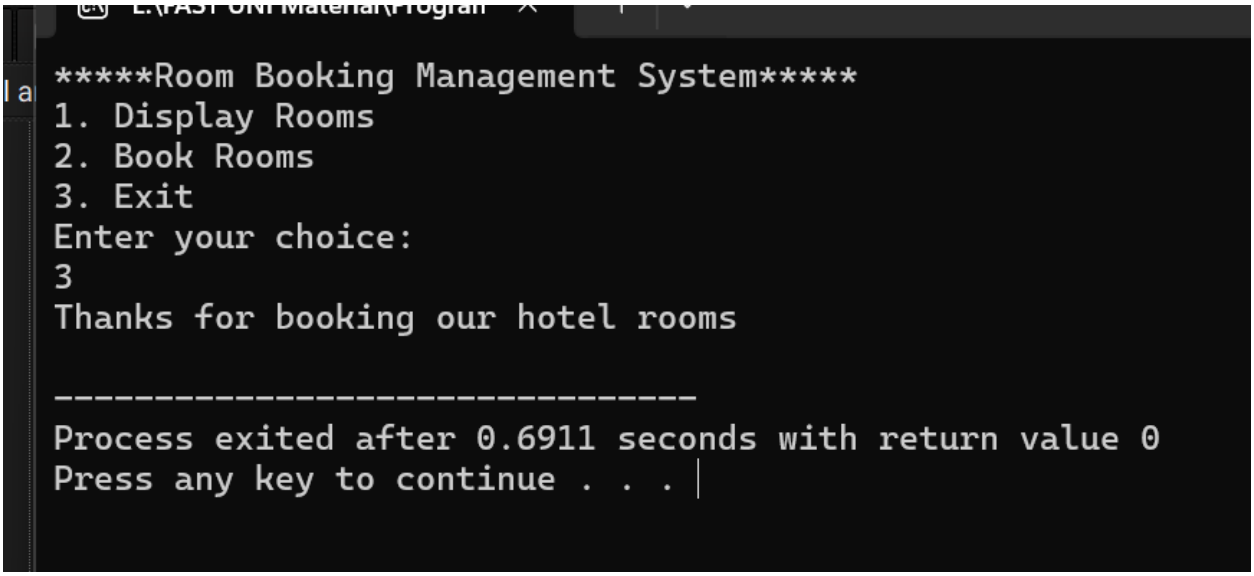
```
void book_room() {
    int num,count1 = 0,count2 = 0,count3 = 0,count4 = 0,count5 = 0,count6 = 0,count7 = 0,count8 = 0,count9 = 0,count10 = 0;
    cout<<"Enter room to book (1-10)"<<endl<<"Press 0 to exit"<<endl;
    cin>>num;
    while (num != 0) {
        switch(num) {
            case 1:
                if (count1 == 0) {
                    cout<<"Room 1 has been successfully booked"<<endl;
                    count1++;
                }
                else {
                    cout<<"This room has already booked"<<endl;
                }
            break;
            case 2:
                if (count2 == 0) {
                    cout<<"Room 2 has been successfully booked"<<endl;
                    count2++;
                }
                else {
                    cout<<"This room has already booked"<<endl;
                }
            break;
            case 3:
                if (count3 == 0) { ...
                else { ...
            break;
            case 4:
                if (count4 == 0) { ...
                else { ...
            break;
            case 5:
                if (count5 == 0) { ...
                else { ...
            break;
            case 6:
                if (count6 == 0) { ...
                else { ...
            break;
            case 7:
                if (count7 == 0) { ...
                else { ...
            break;
            case 8:
```

```
            case 6:
                if (count6 == 0) { ...
                else { ...
            break;
            case 7:
                if (count7 == 0) { ...
                else { ...
            break;
            case 8:
                if (count8 == 0) { ...
                else { ...
            break;
            case 9:
                if (count9 == 0) { ...
                else { ...
            break;
            case 10:
                if (count10 == 0) { ...
                else { ...
            break;
            default:
                cout<<"Enter invalid Input"<<endl;
            break;
        }
        cout<<"Are you want to book another room"<<endl;
        cin>>num;
    }

}
```

Output:




rgest number.cpp
room booking management system.cpp
E:\FAST UNI Material\Progran
*****Room Booking Management System*****
1. Display Rooms
2. Book Rooms
3. Exit
Enter your choice:
2
Enter room to book (1-10)
Press 0 to exit
1
Room 1 has been successfully booked
Are you want to book another room
1
This room has already booked
Are you want to book another room


*****Room Booking Management System*****
1. Display Rooms
2. Book Rooms
3. Exit
Enter your choice:
3
Thanks for booking our hotel rooms

Process exited after 0.6911 seconds with return value 0
Press any key to continue . . .