

# Programming with C

## Assignment 7

**Due: Next Section.**

**Notes:** This assignment is individual assignment, every student should complete it by himself.

**1. (5 points) Create a C++ project and copy the following code to it, compile and run the program then answer the questions: (This part to understand the pointers)**

```
1. #include <iostream>
2. using namespace std;
3.
4. int main(){
5.
6.     int x=8, y= 13;
7.     cout<<"line 7:  x="<<x<<endl;
8.     cout<<"line 8:  y="<<y<<endl;
9.
10.    int *p;
11.    p=&x;
12.    cout<<"\nline 12: p="<<p<<endl;
13.    cout<<"line 13:*p="<<*p<<endl;
14.
15.    *p=5;
16.    cout<<"\nline 16:*p="<<*p<<endl;
17.    cout<<"line 17:  x="<<x<<endl;
18.
19.    p=&y;
20.    *p=25;
21.    cout<<"\nline 21:*p="<<*p<<endl;
22.    cout<<"line 22:  x="<<x<<endl;
23.    cout<<"line 23:  y="<<y<<endl;
24. }
```

- What is the output of line 7 and 8?**
- What is the output of line 12? Why?**
- What is the output of line 13? Why?**
- What is the output of line 16?**
- What is the output of line 17? Why?**
- What is the output of line 21, 22?**
- What is the output of line 23? Why?**
- Replace lines 10,11 with `int *p=&x;` , compile and run the program. Is there any differences?**
- Add `p=53;` to line 18, compile and run the program then report the error and explain the reason.**

**2. (5 points) Write a complete C program with a function to compute the following output, then input  $n$  from the user and print the output.**

$$output = \begin{cases} n * 22/7 & \text{if } n < 10 \\ n + 22/7 & \text{if } n \geq 10 \end{cases}$$