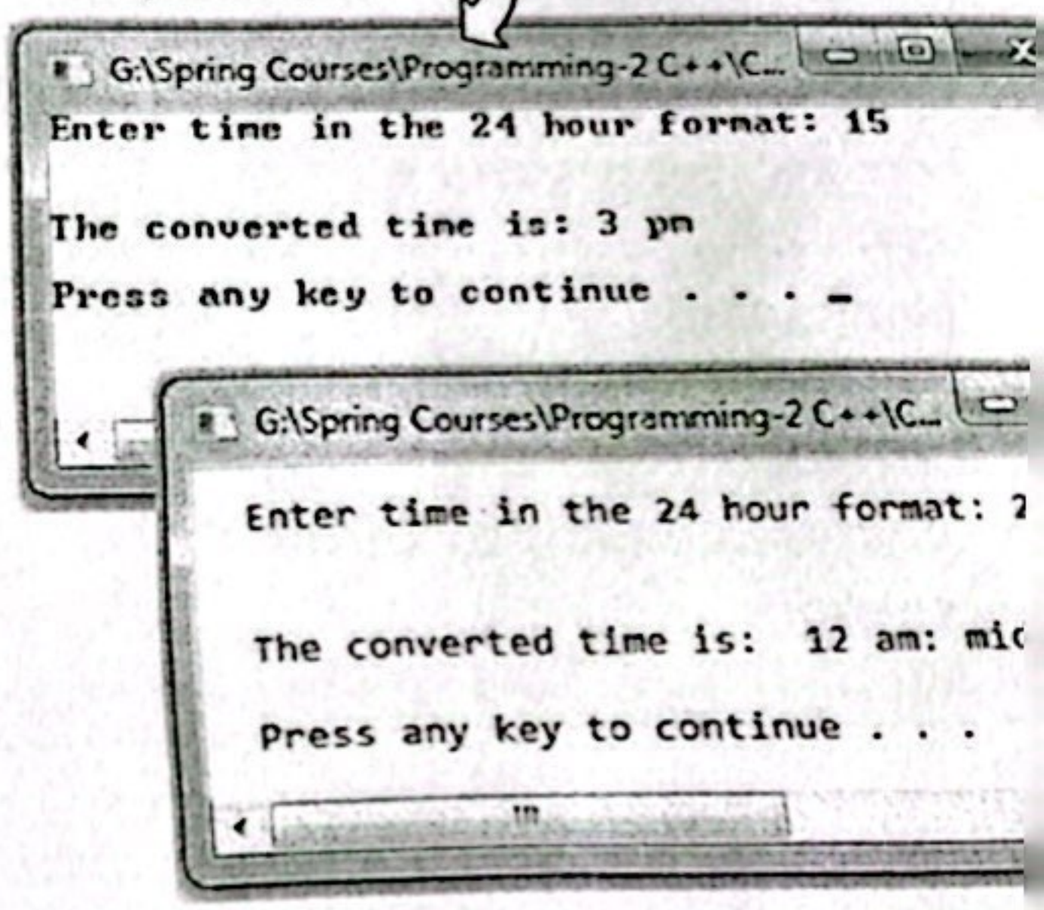
Taif University
College of Computers and
Information Technology

Q 3.(CLO4) *(4Marks)*

Complete the following C++ program that converts time from 24-hours format into 12-hours format. For example, the program should display the converted time on the screen with the message: "*the converted time is*" and whether it is "am" or "pm". (Note: consider all possible cases, and follow the sample outputs)

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

nt main()

 int hrs;

 cout << "Enter time in the 24 hour format: ";
 cin >> hrs;

 out<<endl;
```

Sample Outputs:




```
#include <iostream>
using namespace std;
int main(){
int time;

cout<<"Enter time in the 24 hour format : ";
cin>>time;

if(time >0  && time < 12){

    cout<<"the converted time is : "<<time<<" am";
}

else if(time >= 12  && time <= 24){
        if(time == 12){
            cout<<"the converted time is : "<<time<<" pm";
        }

        else if(time == 24){
            time = time - 12;
            cout<<"the converted time is : "<<time<<" am : mid night";
        }
        else
        {
            time = time - 12;
            cout<<"the converted time is : "<<time<<" pm";
        }

}

return 0;}
```

i. **Suppose that the user input is $x=0$ and $y=12$. What is the screen output after the following C++ program executes?**

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

int main()
{
  int x=0,y=0;

  cout<<"Enter X and Y: ";
  cin>>x>>y;
  cout<<endl;

  if (x==0)
    cout<<"X equals to Zero"
    <<endl;

  if (x>5);
    cout<<"X is greater than 5"<<endl;
  if (y==10)
    cout<<"Y equals to 10"<<endl;
  if (y>10)
    cout<<"Y is greater than 10"<<endl;

  return 0;
}
```

```
Enter X and Y: 0 12
X is equal to Zero
X is grater than 5
Y is grater than 10
```

. **Suppose that we want to compare two integers X and Y, entered by the user as shown, use Switch only, not IF, to write a program segment to accomplish this task.**

```
switch (                    )
 {

  switch(x >= y){

      case true:cout<<"X is greater than or equal Y";
      break;

      case false:cout<<"Y is greater than or equal X";
      break;
  }

 } //End-Switch
```

```
Enter X and Y: 5 3
X is greater than or equals to y

Press any key to continue . . .
```

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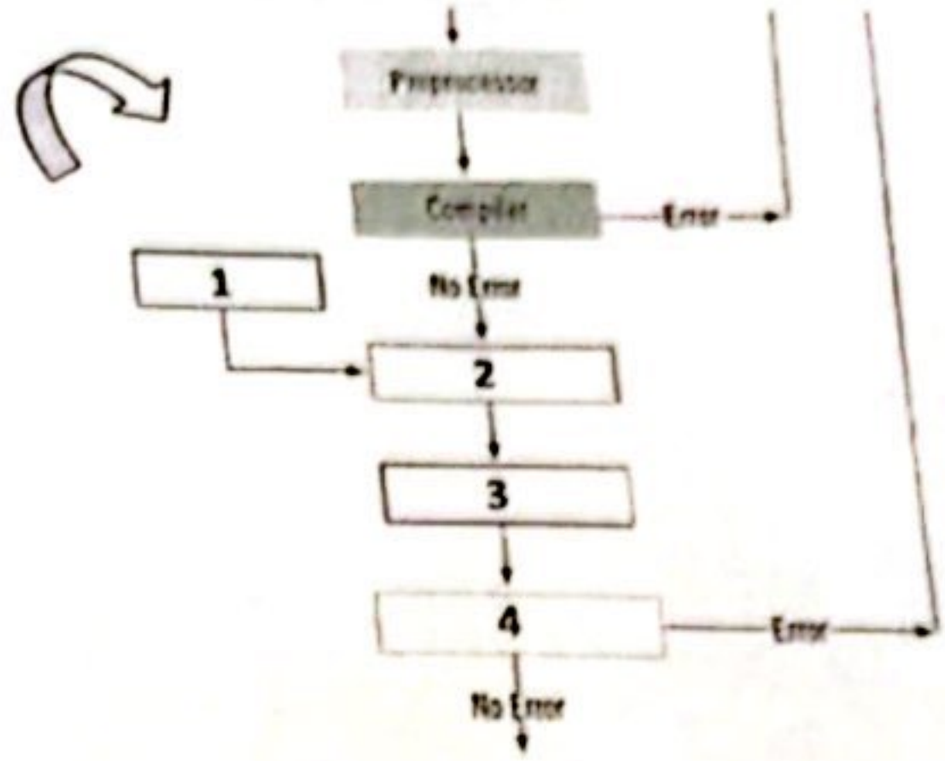
Q1. *(CLO1)* **(10Marks)**

I. **Given the following diagram for part of the Problem Analysis–Coding–Execution cycle, complete the following lines to show the details of the machine-role in that cycle:**



1. Library .....
2. linker .....
3. loader .....
4. Execution .....

ii. **Given the following definitions in column-1, write the entity that best descibes each definition in column-2:**

Choice Words:

{ flowchart, assembly, variable, linker, application-program, computer-program, constant, syntax, programming, programming-language, system-program, algorithm, compiler, loader, semantics, assembler }

Column-1	Column-2
1. A memory location whose content can't change during execution	constant
2. A set of rules, symbols, and special words	programming language
3. A graphical representation of an algorithm	flowchart
4. A program that takes control of the computer, such as an operating system	system program
5. The process of using planning to solve the problem, and then creating a program	programming
6. Rules that specify which statements are legal	syntax