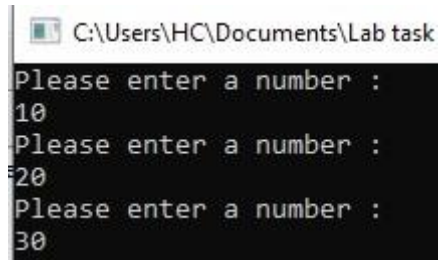# Fundamentals of Programming

Lab task no. 5

TASK 1

```cpp
int main() {
    int x=1;
    do {
        cout<<"Please enter a number : " << endl;  cin>>x;
    }
    while (x>0);
    return 0;
}
```

C:\Users\HC\Documents\Lab task

```
Please enter a number :
10
Please enter a number :
20
Please enter a number :
30
```

TASK 2

```cpp
int main() {
 int num1, num2 , Ans=0 ,i;
 char oper;
 do {
    cout<<"Enter first number: "<<endl; cin>>num1;
    cout<<"Enter second number: "<<endl;  cin>>num2;
    cout<<"Enter an operation from the given choices (+, -, *, /, %, ^ ): "<<endl;
    cin>>oper;
    switch (oper) {
      case '+':
      Ans=num1+num2;
      break;
      case '-':
      Ans=num1-num2;
      break;
       case '*':
      Ans=num1*num2;
      break;
       case '/':
       if (num1==0) {
          cout<<"Invalid first number."<<endl;
       }
      Ans=num1/num2;
      break;
        case '%':
       if (num2==0) {
          cout<<"Invalid second number."<<endl;
```
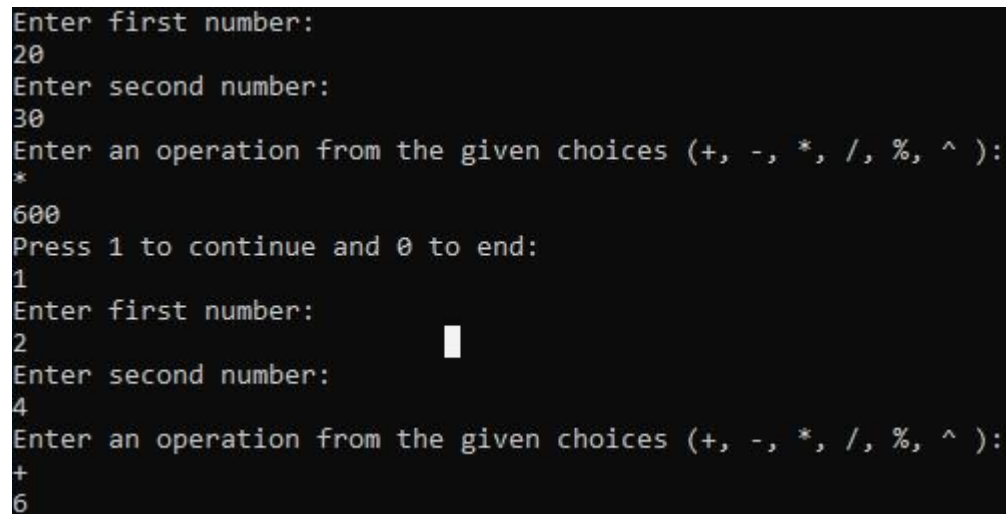
```cpp
        }
        Ans=num1%num2;
        break;
        case '^':
        Ans=pow(num1,num2);
        break;
        default:
        cout<<"Invalid operation, please try again"<<endl;
    }
            cout<<Ans <<endl;
        cout<<"Press 1 to continue and 0 to end: "<<endl;  cin>>i;
    }
    while (i==1);
    return 0;
}
```

```
Enter first number:
20
Enter second number:
30
Enter an operation from the given choices (+, -, *, /, %, ^ ):
*
600
Press 1 to continue and 0 to end:
1
Enter first number:
2
Enter second number:
4
Enter an operation from the given choices (+, -, *, /, %, ^ ):
+
6
```

TASK 3a

```cpp
int main() {
int num=2;
int Sum=0;
while (num<=100) {
  if (num%2==0) {
    Sum =Sum+num;
  }
  num++;


}
cout<<"The sum of all even numbers between 2 and 100 is: "<<Sum<<endl;
 return 0;
}
```

```
The sum of all even numbers between 2 and 100 is: 2550

----------------------------------
```

TASK 3b

```cpp
int main() {
int y=1,total=0;
while (y<=100) {
  total=total + y*y;
  y++;
}
cout<<"The sum of all the squares between 1 and 100 is: "<<total<<endl;
 return 0;
}
```

```
The sum of all the squares between 1 and 100 is: 338350

----------------------------------
```

TASK 4a

```
int main() {
int var=0;
while (var<=20) {
  cout<<pow(2,var)<<endl;
   var++;
}
 return 0;
}
```

```
1
2
4
8
16
32
64
128
256
512
1024
2048
4096
8192
16384
32768
65536
131072
262144
524288
1.04858e+006
```

TASK 4b

```
int main() {
int a1,b1;
int Total=0;
cout<<"Enter first number: "<<endl;
cin>>a1;
cout<<"Enter second number: "<<endl;
cin>>b1;
while (a1<=b1) {
  if (a1%2==1 ) {
    Total=Total+a1;
  }
  a1++;
}
cout<<"Sum of all the numbers between a and b is: "<<Total<<endl;
}
```

```
Enter a smaller number:
10
Enter a larger  number:
50
Sum of all the numbers between a and b is: 600

---------------------------------
```

```
Enter a smaller number:
10
Enter a larger  number:
9
Invalid input, First number must be smaller.

---------------------------------
```