



NATIONAL UNIVERSITY OF SCIENCE & TECNOLOGY

SCHOOL OF MECHANICAL AND MANUFACTURING ENGINEERING

[FUNDAMENTALS OF PROGRAMMING(LAB)]

LAB TASK # 4

SEMESTER # 01

CLASS: - ME-15 [SEC A]

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TASK # 1

```
#include <iostream>
using namespace std;
int main()
{
//using do while loop...
int x = 1;

do
{
//input the number from user.
cout << "enter a number: ";

cin >> x;}
//x approaches to infinity here.
while (x > 0);

return 0;
}
```

 D:\Task-1 (Lab Manual #5).exe

```
enter a number: 4
enter a number: 6
enter a number: 5
enter a number: 65
enter a number: 64
enter a number: 481
enter a number: 215
enter a number: 115
enter a number: 4
enter a number:
```

TASK # 2

```
#include <iostream>
using namespace std;
int main()
{
    //input the values from user..
    int n=1;
    int a;
    int b;
    int addition;
    int subtraction;
    int multiplication;
    int division;
    double mod;
    char again,opr;

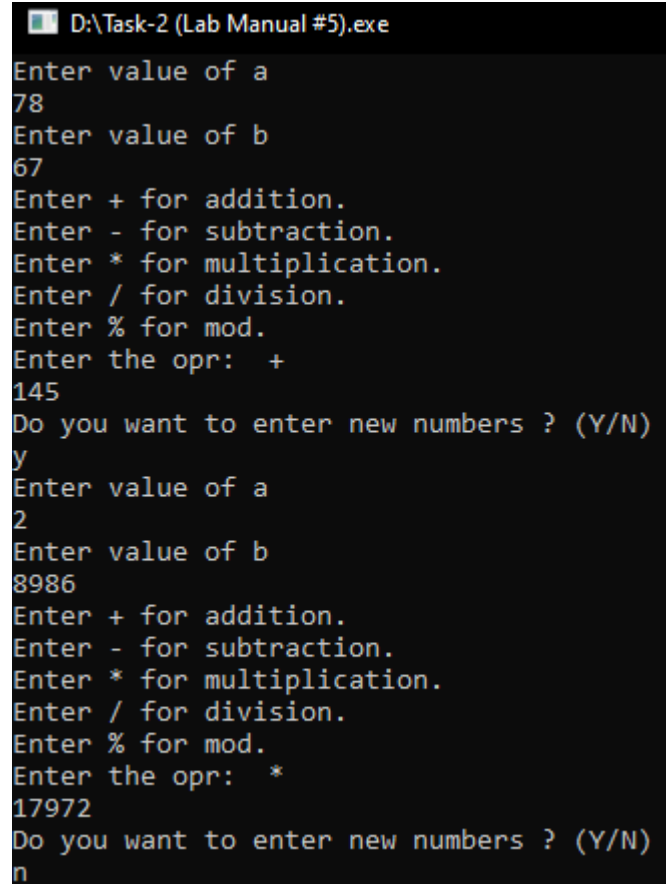
    do
    {
        cout<<"Enter value of a"<<endl;
        cin>>a;
        cout<<"Enter value of b"<<endl;
        cin>>b;

        //input operation from user.
        cout<<"Enter + for addition."<<endl;
        cout<<"Enter - for subtraction."<<endl;
        cout<<"Enter * for multiplication."<<endl;
        cout<<"Enter / for division."<<endl;
        cout<<"Enter % for mod."<<endl;

        cout<<"Enter the opr: ";
        cin>>opr;

        //using case for diff operations
        switch(opr){

            //for addition...
            case '+':
```



```
D:\Task-2 (Lab Manual #5).exe
Enter value of a
78
Enter value of b
67
Enter + for addition.
Enter - for subtraction.
Enter * for multiplication.
Enter / for division.
Enter % for mod.
Enter the opr: +
145
Do you want to enter new numbers ? (Y/N)
y
Enter value of a
2
Enter value of b
8986
Enter + for addition.
Enter - for subtraction.
Enter * for multiplication.
Enter / for division.
Enter % for mod.
Enter the opr: *
17972
Do you want to enter new numbers ? (Y/N)
n
```

```

addition=a+b;
cout<<addition<<endl;
    break;

//for subtraction...
case '-':
    subtraction = a - b;
    cout<<subtraction<<endl;
    break;

//for multiplication...
case '*':
    multiplication = a * b;
    cout<<multiplication<<endl;
    break;

//for division...
case '/':
    division = a/b;
    cout<<division<<endl;
    break;

//for mod...
case '%':
    mod = a%b;
    cout<<mod<<endl;
    break;

default:
    cout<<"Invalid operation inserted."<<endl;
    break;
}

cout<<"Do you want to enter new numbers ? (Y/N)"<<endl;
cin>>again;}

while(again=='Y' || again=='y');

return 0;

}

```

```

D:\Task-2 (Lab Manual #5).exe
Enter value of a
67
Enter value of b
24
Enter + for addition.
91
Enter - for subtraction.
43
Enter * for multiplication.
1608
Enter / for division.
2.83333
Enter % for mod.
19
Do you want to enter new numbers ? (Y/N)
n

```

TASK # 3 (a)

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

```
//program for sum of all even in numbers including 2 and 100.
int n=1;
int sum=0;
```

```
//largest even number included is 100 .
while(n<=100)
```

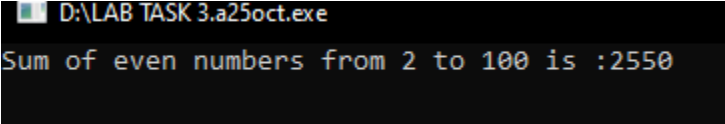
```
{
if(n%2==0)
```

```
sum=sum+n;
n++;
```

```
}
//output is....
cout<<"Sum of even numbers from 2 to 100 is :";
cout<< sum <<endl;
```

```
return 0;
```

```
}
```



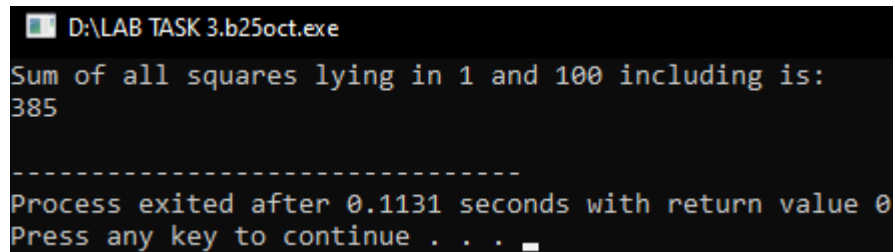
```
D:\LAB TASK 3.a25oct.exe
Sum of even numbers from 2 to 100 is :2550
```

TASK # 3 (b)

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

```
//writting program for sum off squares btw 1-100.
int i=1, m;
int sum = 0;
```

```
//there are 10 perfect squares from 1 to 100.
while(i<=10)
{
    if(m=i*i)
sum=(sum+m);
i++;
}
```



```
D:\LAB TASK 3.b25oct.exe
Sum of all squares lying in 1 and 100 including is:
385
-----
Process exited after 0.1131 seconds with return value 0
Press any key to continue . . .
```

```
//the answer is__
cout<<"Sum of all squares lying in 1 and 100 including is:"<<endl;
cout<<sum<<endl;

return 0;

}
```

TASK # 4 (a)

```
#include<iostream>
```

```
//Here using another library due to involvement of pow function.
```

```
#include<cmath>
```

```
using namespace std;
```

```
int main(){
```

```
int i=0, a;
```

```
while(i<=20)
```

```
{
```

```
//Here i represents numbers from 0 to 20.
```

```
a=pow(2, i);
```

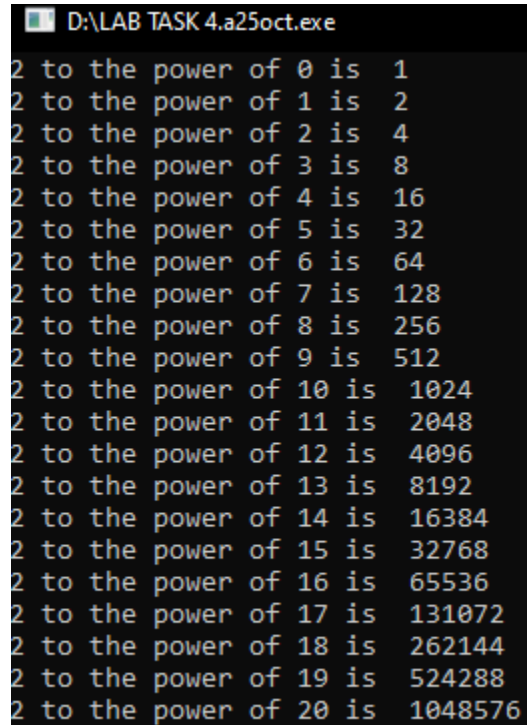
```
cout<<"2 to the power of "<<i<<" is "<<a<<endl;
```

```
//count is increasing.
```

```
i++;
```

```
}
```

```
return 0;}
```



```
D:\LAB TASK 4.a25oct.exe
2 to the power of 0 is 1
2 to the power of 1 is 2
2 to the power of 2 is 4
2 to the power of 3 is 8
2 to the power of 4 is 16
2 to the power of 5 is 32
2 to the power of 6 is 64
2 to the power of 7 is 128
2 to the power of 8 is 256
2 to the power of 9 is 512
2 to the power of 10 is 1024
2 to the power of 11 is 2048
2 to the power of 12 is 4096
2 to the power of 13 is 8192
2 to the power of 14 is 16384
2 to the power of 15 is 32768
2 to the power of 16 is 65536
2 to the power of 17 is 131072
2 to the power of 18 is 262144
2 to the power of 19 is 524288
2 to the power of 20 is 1048576
```

TASK # 4 (b)

```
#include <iostream>
using namespace std;
int main()
{
// Input the numbers from user.
int a, b, i, sum=0;
cout<<"Enter the first number."<<endl;
cin>>a;

cout<<"Enter the second number greater than first."<<endl;
cin>>b;

//making i equal to a and proceeding until b.
i=a;
while(i>=a&& i<=b)

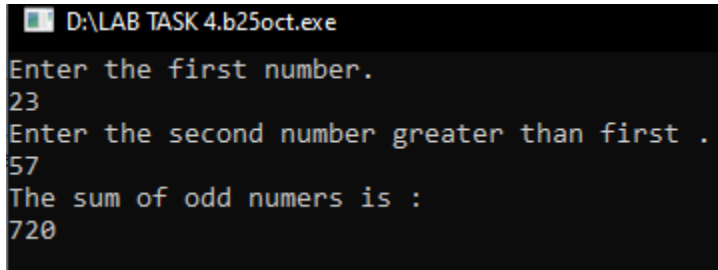
{
if(i%2==1){
sum=sum+i;}

i++;}

//the output is____
cout<<"The sum of odd numers is : \n";
cout<<sum<<endl;

return 0;

}
```



```
D:\LAB TASK 4.b25oct.exe
Enter the first number.
23
Enter the second number greater than first .
57
The sum of odd numers is :
720
```