

Fundamentals of programming

Lab Manual 5



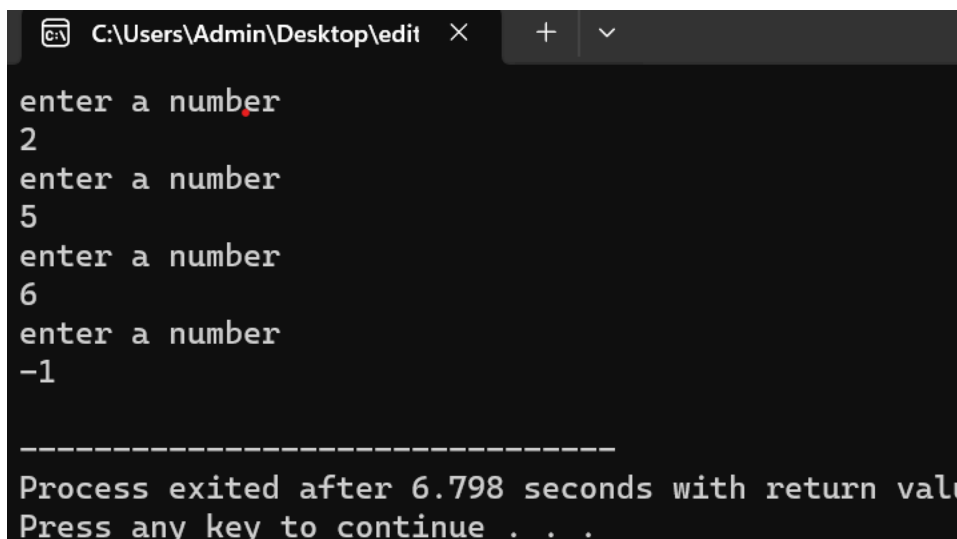
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ME-15 Section A

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Lab Tasks

```
1. int main(){
    int x=1;
    do{
        //asking the user to enter number in loop again
        until its less than 0
        cout<<"enter a number"<<endl;
        cin>>x ;
    }
    while (x>0);
    return 0;
}
```

A screenshot of a Windows command prompt window with a dark background. The window title bar shows the file path 'C:\Users\Admin\Desktop\edit' and standard window controls. The terminal displays the output of a C++ program. It shows four prompts 'enter a number' followed by the inputs '2', '5', '6', and '-1'. After the last input, a horizontal line of dashes is printed, followed by the message 'Process exited after 6.798 seconds with return value' and 'Press any key to continue . . .'.

```
C:\Users\Admin\Desktop\edit  X  +  v
enter a number
2
enter a number
5
enter a number
6
enter a number
-1
-----
Process exited after 6.798 seconds with return value
Press any key to continue . . .
```

num1,num2,result;

```
2. int
main(){
    int
```

```
char task;
do{
    //askin user to enter numbers
    cout<<"enter the numbers on which you want to
perform calculations on"<<endl;
    cin>>num1;
    cin>>num2;
    //asking user to select desired operation to
perform
    cout<<"press 'a' for addition, 'b' for
substraction,'c' for multiplication,'d' for division, 'e' for
power,'t' for termination"<<endl;
    cin>>task;
    //using switc to perform differant tasks
    switch (task){
        case 'a': result= num1+num2;
            cout<<"sum is "<<result<<endl;
            break;
        case 'b': result= num1-num2;
```

```

        cout<<"subtraction is
"<<result<<endl;

        break;

    case 'c': result= num1*num2;
        cout<<"product is "<<result<<endl;
        break;

    case 'd': result= num1/num2;
        cout<<"division is "<<result<<endl;
        break;

    case 'e': result= pow(num1,num2);
        cout<<"result is "<<result<<endl;
        break;

    default :if(task!='t'){
        cout<<"invalid operation"<<endl;}
        else{cout<<"terminating program";
        }

    }

    //continuously performing calculations until t is
    presse

```

```

    }while (task!= 't');

    return 0;

}

```

```

C:\Users\Admin\Desktop\edit x + v
enter the numbers on which you want to perform calculations on
3
2
press 'a' for addition, 'b' for subtraction, 'c' for multiplication, 'd' for division, 'e' for power, 't' for termination
b
subtraction is 1
enter the numbers on which you want to perform calculations on
4
5
press 'a' for addition, 'b' for subtraction, 'c' for multiplication, 'd' for division, 'e' for power, 't' for termination
c
product is 20
enter the numbers on which you want to perform calculations on
5
6
press 'a' for addition, 'b' for subtraction, 'c' for multiplication, 'd' for division, 'e' for power, 't' for termination
t
terminating program
-----
Process exited after 30.76 seconds with return value 0
Press any key to continue . . .

```

3 a. `int main(){`

```

    int num,sum;

```

```

    num=1;

```

```

    sum=0;

```

//using while loop to add even numbers between 1 and 100 inclusive

```

    while(num>0&&num<101){

```

```

        if (num%2==0){

```

```

            sum = sum +num;

```

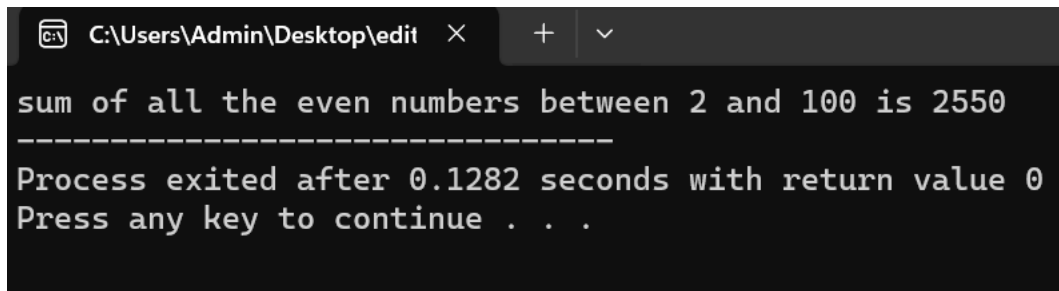
```

    }
    num=num+1;
}

cout<<"sum of all the even numbers between 2 and
100 is "<<sum;

return 0;
}

```



```

C:\Users\Admin\Desktop\edit
sum of all the even numbers between 2 and 100 is 2550
-----
Process exited after 0.1282 seconds with return value 0
Press any key to continue . . .

```

Q3 b. int main(){

```
int num,squ,sum;
```

```
sum=0;
```

```
num=1;
```

```
squ=0;
```

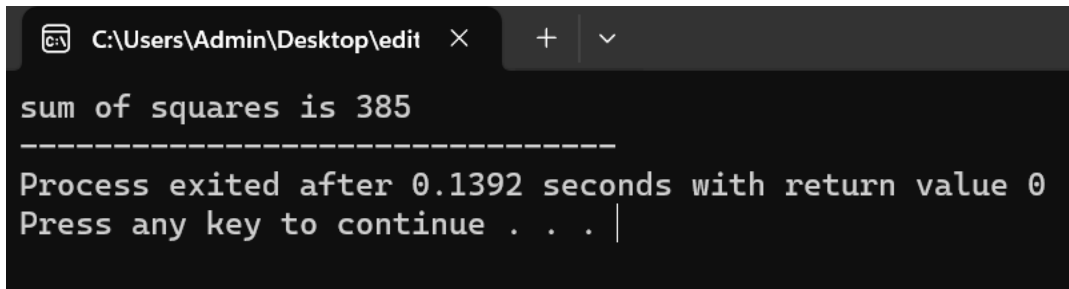
//using while loop to calculate sum all squares
between 1 and 100 inclusive

```

while (squ<100)
{
    squ= num*num;
    sum=sum+squ;
    num=num+1;
}

//outputting result after ending loop
cout<<"sum of squares is "<<sum;
}

```



```

C:\Users\Admin\Desktop\edit
sum of squares is 385
-----
Process exited after 0.1392 seconds with return value 0
Press any key to continue . . . |

```

Q4 a.

```

int main(){
    int num,power;
    num=0;
    power=0;
    //using while loop to output all powers of 2 upto 20

```

```

while(num<21){
    power=pow(2,num);
    cout<<"answer of 2 raise to power "<<num<<" is
"<<power<<endl;
    num=num+1;
}
}

```

```

C:\Users\Admin\Desktop\edit
answer of 2 raise to power 0 is 1
answer of 2 raise to power 1 is 2
answer of 2 raise to power 2 is 4
answer of 2 raise to power 3 is 8
answer of 2 raise to power 4 is 16
answer of 2 raise to power 5 is 32
answer of 2 raise to power 6 is 64
answer of 2 raise to power 7 is 128
answer of 2 raise to power 8 is 256
answer of 2 raise to power 9 is 512
answer of 2 raise to power 10 is 1024
answer of 2 raise to power 11 is 2048
answer of 2 raise to power 12 is 4096
answer of 2 raise to power 13 is 8192
answer of 2 raise to power 14 is 16384
answer of 2 raise to power 15 is 32768
answer of 2 raise to power 16 is 65536
answer of 2 raise to power 17 is 131072
answer of 2 raise to power 18 is 262144
answer of 2 raise to power 19 is 524288
answer of 2 raise to power 20 is 1048576

```

Q4 b.

```

int main(){

```



```
int start,end,sum;

//asking user to enter range

cout<<"enter the numbers between which you want
to find sum of all odd numbers"<<endl;

cin>>start;

cin>>end;

//making sure that first and last number are odd
if (start%2==0)
{start=start+1;    }
if(end%2==0){end=end-1;}

sum=start;

while(start!=end || start<end-2)
{start=start+2;
sum=sum+start;
}

cout<<"sum of all the odd numbers in this range is
"<<sum;

}
```



C:\Users\Admin\Desktop\edit



enter the numbers between which you want to find sum of all odd numbers

2

9

sum of all the odd numbers in this range is 24

Process exited after 2.306 seconds with return value 0

Press any key to continue . . . |