



NATIONAL UNIVERSITY OF SCIENCES AND TECHNOLOGY

CS-114-FUNDAMENTAL OF PROGRAMING LAB MANUAL # 5

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TASK # 1

CODE:

```
#include <iostream>

using namespace std;

int main(){

    int x=1;

    do{

        cout<<"Enter a number: ";

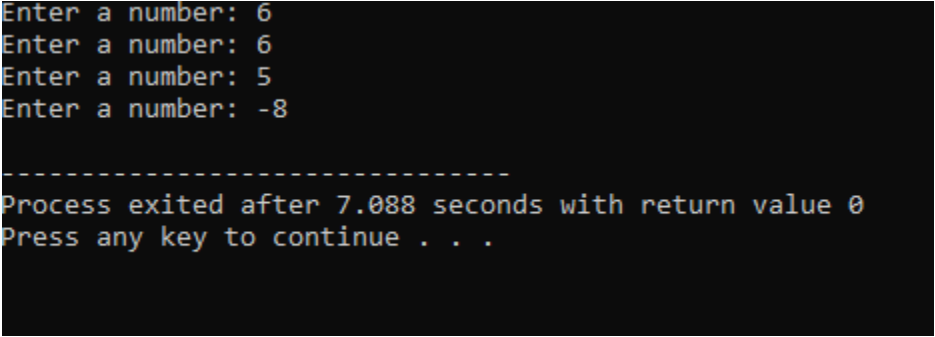
        cin>>x;

    }while(x>0);

    return 0;

}
```

RESULT:



```
Enter a number: 6
Enter a number: 6
Enter a number: 5
Enter a number: -8

-----
Process exited after 7.088 seconds with return value 0
Press any key to continue . . .
```

TASK # 2

CODE:

```
#include <iostream>
```

```

using namespace std;

int main(){
char choice;

do{
float num1,num2,result;
char operation;

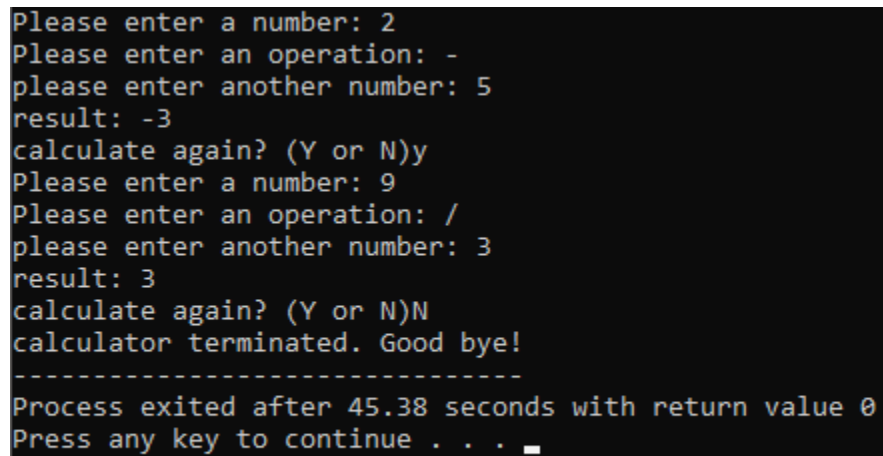
    cout<<"Please enter a number: ";
    cin>>num1;
    cout<<"Please enter an operation: ";
    cin>>operation;
    cout<<"please enter another number: ";
    cin>>num2;
    switch(operation){
    case'+':
        result=num1+num2;break;
    case'-':
        result=num1-num2;break;
    case'/':
        result=num1/num2;break;
    case'*':
        result=num1*num2;break;

    default:
        cout<<"Invalid operator."<<endl;
        return 0;
    }
    cout<<"result: "<<result<<endl;
    //if you want to calculate again
    cout<<"calculate again? (Y or N)";
    cin>>choice;
}

```

```
}while (choice=='y' || choice=='Y');  
  
cout<<"calculator terminated. Good bye!";  
  
return 0;  
  
}
```

RESULT:



The screenshot shows the execution of a C++ calculator program. It prompts the user to enter a number (2), an operation (-), and another number (5), resulting in -3. It then asks if the user wants to calculate again (y), prompts for another number (9) and operation (/), resulting in 3. After asking again (N), it displays "calculator terminated. Good bye!". A separator line follows, and then it shows "Process exited after 45.38 seconds with return value 0" and "Press any key to continue . . . _".

```
Please enter a number: 2  
Please enter an operation: -  
please enter another number: 5  
result: -3  
calculate again? (Y or N)y  
Please enter a number: 9  
Please enter an operation: /  
please enter another number: 3  
result: 3  
calculate again? (Y or N)N  
calculator terminated. Good bye!  
-----  
Process exited after 45.38 seconds with return value 0  
Press any key to continue . . . _
```

TASK # 3

CODE:

```
#include <iostream>  
  
using namespace std;  
  
int main(){  
  
int even_sum=0;  
  
int even_num=2;  
  
while (even_num<=100){  
  
;  
  
even_sum+=even_num;
```

```

even_num+=2;

}

cout<<"Sum of even number between 2 and 100: "<<even_sum<<endl;

int square_sum=0;

int num=1;

while(num<=100){

square_sum=num*num;

num++;

}

cout<<"Sum of sqaures between 1 and 100: "<<square_sum;

return 0;

}

```

RESULT:

```

Sum of even number between 2 and 100: 2550
Sum of sqaures between 1 and 100: 10000
-----
Process exited after 0.06957 seconds with return value 0
Press any key to continue . . . _

```

TASK # 4 (Part 1)

CODE:

```

#include <iostream>

using namespace std;

int main(){

int a,b;

cout<<"Enter the value of a: ";

```

```

cin>>a;

cout<<"Enter the value of b: ";

cin>>b;

int sum=0;

int current=a;

do{

if(current%2!=0){

sum=sum+current;

}

current++;

}while(current<=b);

cout<<"The sum of all values between "<<a<<" and "<<b<<" is "<<sum<<endl;

return 0;

}

```

RESULT:

```

Enter the value of a: 5
Enter the value of b: 10
The sum of all values between 5 and 10 is 21

-----
Process exited after 3.102 seconds with return value 0
Press any key to continue . . .

```

TASK # 4 (Part 2)

CODE:

```

#include <iostream>

#include <math.h>

using namespace std;

```

```
int main(){  
    double power=0;  
    while (power<=20){  
        double result=pow(2,power);  
        cout<<"2^"<<power<<"="<<result<<endl;  
        power++;  
    }  
    return 0;  
}
```

RESULT:

```
2^0=1  
2^1=2  
2^2=4  
2^3=8  
2^4=16  
2^5=32  
2^6=64  
2^7=128  
2^8=256  
2^9=512  
2^10=1024  
2^11=2048  
2^12=4096  
2^13=8192  
2^14=16384  
2^15=32768  
2^16=65536  
2^17=131072  
2^18=262144  
2^19=524288  
2^20=1.04858e+006  
  
-----  
Process exited after 0.08173 seconds with return value 0  
Press any key to continue . . .
```

