

CS-114 - Fundamental of Programming

Lab Manual # 05

Lab Tasks

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Objective: To understand repetition structure and the types of repetition structure.

Task 1 code:

```
//task 1
int x = 1;
do{
    cout<< "enter a number: ";
    cin>> x;
} while (x>0);
```

Output:

```
enter a number: 4
enter a number: 89
enter a number: 734
enter a number: 90
enter a number:
```

Task 2 code:

```
..... //task 2
char op, choice;
int x, y;
do{
    cout<<"Enter your first number: "<<endl;
    cin>> x;
    cout<<"Select your desired operation symbol(+, -, *, /): "<<endl;
    cin>> op;
    cout<<"Enter the second number: "<<endl;
    cin>> y;

    switch (op) {
    case '+':
        cout<<"Answer: "<<x+y<<endl;
        break;
    case '-':
        cout<<"Answer: "<<x-y<<endl;
        break;
    case '*':
        cout<<"Answer: "<<x*y<<endl;
        break;
    case '/':
        cout<<"Answer: "<<x/y<<endl;
        break;
    default:
        cout<<"Error. Invalid operator."<<endl;
    }
    cout<<"Press y if you would like to try again"<<endl;
    cin>>choice;
}while(choice=='y' || choice=='Y');
cout<<"Calculator closed."<<endl;
```

Task 3a code:

```
int sum=0, i=2;
cout<<"Sum of all even numbers between 2 and 100 is: ";
do{
    sum = sum + i;
    i = i + 2;
}while (i <= 100);
cout<<sum<<endl;
```

Output:

```
Sum of all even numbers between 2 and 100 is: 2550
-----
Process exited after 0.1798 seconds with return value 0
Press any key to continue . . .
```

Task 3b code:

```
int i=1, sum=0, x= 1, y =2;
while(i <=100 )
{
    sum += pow(x,y);
    x += 1;
    i++;
}
cout<<"The sum of all squares from 1 to 100 is: "<<sum<<endl;
```

Output:

```
The sum of all squares from 1 to 100 is: 338350
-----
Process exited after 0.1598 seconds with return value 0
Press any key to continue . . .
```

Task 4a code:

```
int x, i=0;
do{
    x = pow(2, i);
    i++;
    cout<<x<<endl;
}while(i<=20);
```

Output:

```
1
2
4
8
16
32
64
128
256
512
1024
2048
4096
8192
16384
32768
65536
131072
262144
524288
1048576
```

Task 4b code:

```
int a, b, i, sum=0;
cout<<"Input smaller value: "<<endl;
cin>>a;
cout<<"Input larger value: "<<endl;
cin>>b;
i = a;
do{
    if(i%2==1){
        sum = sum + i;
    }
    i++;
}while(i<=b);
cout<<"The sum of all odd numbers between "<<a<<" and "<<b<<"(inclusive) is: "<<sum;
```

Output:

```
Input smaller value:
4
Input larger value:
13
The sum of all odd numbers between 4 and 13(inclusive) is: 45
-----
Process exited after 10.64 seconds with return value 0
Press any key to continue . . .
```