

Name	Umar Hayyat
Roll No	2019-EE-360

Lab 10

Loops in C

Objective:

In this lab,

- I will learn how we print triangle with stars in C.
- I will learn how we check palindrome in C.

Task 1:

Use for loop to make the following shape:

```
* * * * *
* * * * *
* * * *
* * *
* *
*
*
```

Note: use only one * with print.

Code:

```
#include<stdio.h>

int main ()
{
    int i,j;
    for(i=1;i<=6;i++) {
        for (j=6;j>=i;j--) {
            printf("* ");
        }
        printf("\n");
    }
    return 0;
```

```
}
```

Output:



Task 2:

Write a program using for loop which displays all the prime numbers from 50 to 100.

Code:

```
#include <stdio.h>

int main ()
{
    for (int i=50;i<=100;i++)
    {
        int count=0;
        for (int j=1;j<=i;j++)
        {
            if (i%j==0)
                count++;
        }
        if(count==2)
        {
            printf("%d\n",i);
        }
    }
}
```

```
    return 0;

}
```

Output:

```
53
59
61
67
71
73
79
83
89
97
```

Task 3:

Make the following shape using for loop:

```
*

* * *

* * * * *

* * *

*
```

Challenge: use only one * with print.

Code:

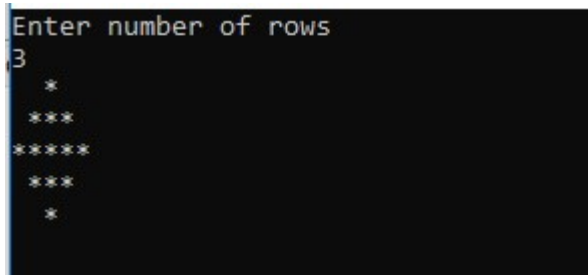
```
#include <stdio.h>
int main()
{
    int number, i,k,count=1;
    printf("Enter number of rows\n");
    scanf("%d",&number);
    count=number-1;
    for (k=1;k<=number;k++)
    {
        for (i=1;i<=count;i++)
            printf(" ");
        count--;
        for (i=1;i<=2*k-1;i++)
            printf("*");
        printf("\n");
    }
}
```

```

    }
    count=1;
    for (k=1;k<=number-1;k++)
    {
        for (i=1;i<=count;i++)
            printf(" ");
        count++;
        for (i=1;i<=2*(number-k)-1;i++)
            printf("*");
        printf("\n");
    }
    return 0;
}

```

Output:



```

Enter number of rows
3
 *
***
*****
***
 *

```

Task 4:

Write a program to check whether a number is a palindrome or not.

Code:

```

#include <stdio.h>

int main()
{
    int a,b,d,c=0;

    printf("Enter integer\n");

    scanf("%d",&a);

    b=a;

    while(a!=0)
    {
        d=a%10;
        a=a/10;
        c=c*10+d;
    }
}

```

```
        a=a/10;

    }

    if (c==b)

        printf("It is palindrome");

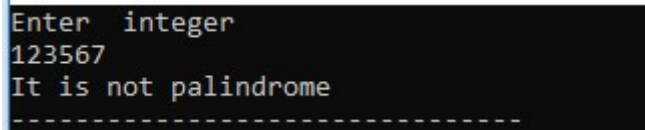
    else

        printf("It is not palindrome");

    return 0;

}
```

Output:



```
Enter integer
123567
It is not palindrome
-----
```

Task 5:

Write a program which breaks down an integer in segments and display each digit of the integer in new line.

Code:

```
#include <stdio.h>

int main ()

{

    int num,temp,factor=1;

    printf("Enter a number:");

    scanf("%d",&num);

    temp=num;

    while(temp)

    {

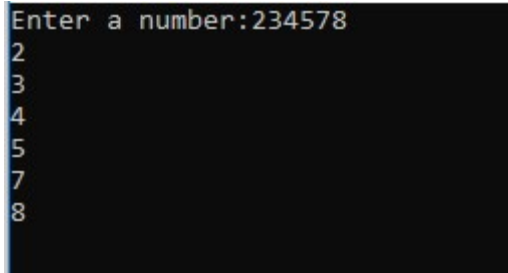
        temp=temp/10;

        factor=factor*10;
```

```
    }

    while(factor>1)
    {
        factor=factor/10;
        printf("%d\n",num/factor);
        num=num%factor;
    }
    return 0;
}
```

Output:



```
Enter a number:234578
2
3
4
5
7
8
```

Conclusion:

In this lab, I learnt how we use loops in C. I also learnt that loops in C are similar to loops in Java. I also learnt about palindrome and learnt that how we check that the input number is palindrome or not. I also learnt that how we use loop to print number or stars in different pattern as I print triangle, diamond etc.

