

1- Write a program that wants user to enter a number. User will continue entering number until the number is between 1-9. (The following 2 codes are written for that program.)

Program 1:

```
#include<stdio.h>

int main()
{
    int x;

    do
    {
        printf("Enter a number [1-9]\n");
        scanf("%d",&x);
    }while(x<1 || x>9);

    printf("Entered number is %d \n",x);

    return 0;
}
```

Program 2:

```
#include<stdio.h>

int main()
{
    int x;

    while(true) //FOR INIFINITIVE LOOP
    {
        printf("Enter a number [1-9]\n");
        scanf("%d",&x);

        if(x>=1 && x<=9)
            break; //BREAKS THE LOOP
    }

    printf("Entered number is %d \n",x);

    return 0;
}
```

Output sample of the code:

```
Enter a number [1-9]
0
Enter a number [1-9]
11
Enter a number [1-9]
12
Enter a number [1-9]
4
Entered number is 4
```

2- Write a code to obtain the following output. To obtain that output, you have to use loops. (The following 2 codes are written for that program.)

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

Program 1:

```
#include <stdio.h>

int main()
{
    int i,j;

    i=1;
    do
    {
        j=1;
        while(j<=i)
        {
            printf("*");
            j++;
        }

        printf("\n");
        i++;
    }while(i<=10);

    return 0;
}
```

Program 2:

```
#include <stdio.h>

int main()
{
    for(int i=0; i<10; i++)
    {
        for(int j=0; j<=i; j++)
        {
            printf("*");
        }

        printf("\n");
    }

    return 0;
}
```


4- What is the output of the following codes. (The following 2 codes have same outputs)

Program 1:

```
#include <stdio.h>

int main()
{
    for(int i=5; i>0; i--)
    {
        for(int j=1; j<(2*i); j+=2)
        {
            printf("%d ",j);
        }
        printf("\n");
    }
    return 0;
}
```

Program 2:

```
#include <stdio.h>

int main()
{
    int i,j;

    i=5;
    while(i>0)
    {
        j=1;
        while(j<2*i)
        {
            printf("%d ",j);
            j+=2;
        }
        printf("\n");
        i--;
    }
    return 0;
}
```

Output of the upper codes:

```
1 3 5 7 9
1 3 5 7
1 3 5
1 3
1
```

5- What is the output of the following codes. (The following 2 codes have same outputs)

Program 1:

```
#include <stdio.h>

int main()
{
    for(int i=0; i<3; i++)
    {
        for(int j=2*i; j<=4+2*i; j+=2)
        {
            if(j<4)
                printf("x ");
            else
                printf("%d ",j);
        }
        printf("\n");
    }
    return 0;
}
```

Program 2:

```
#include <stdio.h>

int main()
{
    int i,j;
    i=0;
    while(i<3)
    {
        j=2*i;
        while(j<=4+2*i)
        {
            if(j<4)
                printf("x ");
            else
                printf("%d ",j);
            j+=2;
        }
        printf("\n");
        i++;
    }
    return 0;
}
```

Output of the upper codes:

```
x x 4
x 4 6
4 6 8
```