# C assignments – Day 13 (12-Sept-2022)

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Que1- Write a program to print numbers from 20 to 50 with for loop, while loop and do-while loop.

- With while loop

```c
#include <stdio.h>

void main()
{
    int a = 20;
    while (a <= 50)
    {
        printf("%d \t", a);
        a++;
    };
}
```

With - for loop

```c
#include <stdio.h>

void main()
{
    for (int a = 20;a <= 50;a++)
    {
        printf("%d \t", a);
    }
}
```

With do while loop.

```c
#include <stdio.h>

void main()
{
    int a = 20;
    do
    {
        printf("%d \t", a);
```

```
        a++;
    }while (a <= 50);
}
```

Que2- Write a program to print all the even numbers up to 100.

With for loop

```
#include <stdio.h>

void main()
{

    for (int a = 0;a <= 100;a++)
    {
        if (a % 2 == 0)
        {
            printf("%d \t", a);
        }
    }
}
```

With do while loop.

```
#include <stdio.h>

void main()
{
    int a = 0;
    do
    {
        if (a % 2 == 0)
        {
            printf("%d \t", a);
        }
        a++;
    }while (a <= 100);
}
```

Que3- Write a program to print all the odd numbers up to a given number with for loop and do while loop

With do while loop

```c
#include <stdio.h>
void main()
{
    int a, b, c;
    printf("Enter the number\n");
    scanf("%d", &a);
    b = a % 10;
    c = a % 100;
    c /= 10;
    if (c < b)
    {
        do
        {
            printf("%d \t", c);
            c++;
        }while (c <= b);
    }
    else
    {
        do
        {
            printf("%d \t", c);
            c--;
        }while (b <= c);
    }
}
```

With for loop

```c
#include <stdio.h>
void main()
{
    int a, b, c;
    printf("Enter the number\n");
    scanf("%d", &a);
    b = a % 10;
    c = a % 100;
    c /= 10;
    if (c < b)
    {
```

```c
        for (c; c <= b; c++)
        {
            printf("%d \t", c);
        }
    }
    else
    {
        for (c; c <= b; c--)

        {
            printf("%d \t", c);
        }
    }
}
```

```c
#include <stdio.h>
void main()
{
    int a, b, c;
    printf("Enter the number\n");
    scanf("%d", &a);
    b = a % 10;
    c = a % 100;
    c /= 10;
    printf("c1 = %d\n", c);
    if (c < b)
    {
        while (c <= b)
        {
            printf("%d \t", c);
            c++;
        }
    }
    else
    {
        while (b <= c)
        {
            printf("%d \t", c);
            c--;
        }
    }
}
```

Que4- Write a program to print all the odd numbers up to two given numbers in descending order with for loop and do-while.

With for loop

```c
#include <stdio.h>

void main()
{
    int a, b;
    printf("Enter two numbers \n");
    scanf("%d%d", &a, &b);
    if (a > b)
    {
        for (a; a >= b; a--)
        {
            if (a % 2 != 0)
            {
                printf("%d \t", a);
            }

        }
    }
    else
    {
        for (b; b >= a;b--)
        {
            if (b % 2 != 0)
            {
                printf("%d \t", b);
            }
        }
    }
}
```

With do-while

```c
#include <stdio.h>

void main()
{
    int a, b;
    printf("Enter two numbers \n");
    scanf("%d%d", &a, &b);
    if (a > b)
```

```
{
    do
    {
        if (a % 2 != 0)
        {
            printf("%d \t", a);
        }
        a--;
    }while (b <= a);
}
else
{
    do
    {
        if (b % 2 != 0)
        {
            printf("%d \t", b);
        }
        b--;
    }while (a <= b);
}
}
```

Que5- Write a program to read two numbers from the user. If the first number is greater than the second number, then print all the numbers between these two numbers including them in gap of 3 otherwise print in gap of 4 with for loop and do while loop.

With do while loop

```
#include <stdio.h>

void main()
{
    int a, b;
    printf("Enter two numbers \n");
    scanf("%d%d", &a, &b);
    if (a > b)
    {
        do
        {
            if (b % 3 == 0)
            {
                printf("%d \t", b);
            }
```

```c
        b++;
    } while (b <= a);
}
else
{
    do
    {
        if (a % 4 == 0)
        {
            printf("%d \t", a);
        }
        a++;
    } while (a <= b);
}
}
```

With for loop

```c
#include <stdio.h>

void main()
{
    int a,b;
    printf("Enter two numbers \n");
    scanf("%d%d",&a,&b);
    if (a>b){
        for(b;b<=a;b++){
            if(b%3==0){
            printf("%d \t", b);
        }
        }

    }
    else{
        for(a;a<=b;a++){
        if(a%4==0){
        printf("%d \t", a);
        }
    }
    }
}
```

Que6- Write a program to read a number from user and display factorial of that number with for loop, while loop, do-while loop.

With while loop

```c
#include <stdio.h>

void main()
{
    int a,b=1;
    printf("Enter Your number\n");
    scanf("%d",&a);

    while (a!=0)
    {
        b *= a;
        a--;
    }
    printf("The factoriel of the entered number is %d",b);

}
```

With for loop

```c
#include <stdio.h>

void main()
{
    int a,b=1;
    printf("Enter Your number\n");
    scanf("%d",&a);

    while (a!=0)
    {
        b *= a;
        a--;
    }
    printf("The factoriel of the entered number is %d",b);

}
```

With do-while

```c
#include <stdio.h>

void main()
{
    int a,b=1;
    printf("Enter Your number\n");
    scanf("%d",&a);

    do
    {
        b *= a;
        a--;
    }while (a!=0);
    printf("The factoriel of the entered number is %d",b);

}
```

Que7- Write a program to read a number from user. If second last digit is less than last digit then display all the numbers between these two numbers including/excluding them otherwise display in reverse order using for loop while loop and do while loop.

With while loop

```c
#include <stdio.h>
void main()
{
    int a, b, c;
    printf("Enter the number\n");
    scanf("%d", &a);
    b = a % 10;
    c = a % 100;
    c /= 10;
    printf("c1 = %d\n", c);
    if (c < b)
    {
        while (c <= b)
        {
            printf("%d \t", c);
            c++;
        }
    }
    else
    {
        while (b <= c)
```

```c
        {
            printf("%d \t", c);
            c--;
        }
    }
}
```

With for loop

```c
#include <stdio.h>
void main()
{
    int a, b, c;
    printf("Enter the number\n");
    scanf("%d", &a);
    b = a % 10;
    c = a % 100;
    c /= 10;
    if (c < b)
    {
        for (c; c <= b; c++)
        {
            printf("%d \t", c);
        }
    }
    else
    {
        for (c; c <= b; c--)

        {
            printf("%d \t", c);
        }
    }
}
```

With do-while loop

```c
#include <stdio.h>
void main()
{
    int a, b, c;
    printf("Enter the number\n");
    scanf("%d", &a);
```

```
    b = a % 10;
    c = a % 100;
    c /= 10;
    if (c < b)
    {
        do
        {
            printf("%d \t", c);
            c++;
        }while (c <= b);
    }
    else
    {
        do
        {
            printf("%d \t", c);
            c--;
        }while (b <= c);
    }
}
```

Que8- Write a program to read a number from user to find the sum of square of all the numbers up to that number using for loop, while loop, do-while loop.

With while loop

```c
#include <stdio.h>
void main(){
    int num,sqr,sum=0;
    printf("Enter tour number\n");
    scanf("%d",&num);
    while(num!=0){
        sqr = num * num;
        sum += sqr;
        num--;
    }
    printf("The sum of squares of all the numbers upto given number is:
%d",sum);
}
```

With do-while loop

```c
#include <stdio.h>

void main()
{
    int a = 0;
    do
    {
        if (a % 2 == 0)
        {
            printf("%d \t", a);
        }
        a++;
    }while (a <= 100);
}
```

With do-while loop

```c
#include <stdio.h>
void main(){
    int num,sqr,sum=0;
    printf("Enter tour number\n");
    scanf("%d",&num);
    do
    {
        sqr = num * num;
        sum += sqr;
        num--;
    }while(num!=0);
    printf("The sum of squares of all the numbers upto given number is:
%d",sum);
}
```