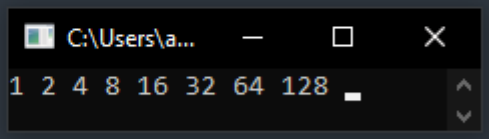
1

```c
#include <stdio.h>
#include <conio.h>
int main(void)
{
    //Intialization of Data Types
    int i;

    //Intial value assignment
    i = 1;

    //Loop for creation of factorials less than equal or equal to 128
    while (i <= 128) {

        //Output of values
        printf("%d ", i);
        i *= 2;
    }

    //stops the program for closing immediately
    getch();
    return 0;
}
```



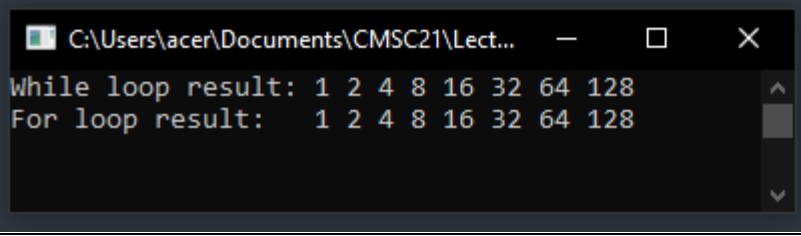
2

```c
#include <stdio.h>
#include <conio.h>
int main(void)
{
    //Intialization of Data Types
    int i;


    //Label
    printf("While loop result: ");

    i = 1;

    //while Loop
    while (i <= 10) {
        printf("%d", i);
        i*=2;
    }

    //Label
    printf("\nFor loop result:   ");

    i = 1;

    //for Loop
    for (; i<10;){
        printf("%d", i);
    }

    //Label
    printf("\nDo while result:   ");

    i = 1;

    //do while loop
    do {
        printf("%d", i);
        i*=2;
    }
    while (i<10);

    //stops the program for closing immediately
    getch();
    return 0;
}
```

The for loop is not equivalent as, the other two loops are able to add their incrementation to the bodies of the loops.

3

```c
#include <stdio.h>
#include <conio.h>
int main(void)
{
    //Intialization of Data Types
    int i;

    //Intial value assignment
    i = 1;

    //Label
    printf("While loop result: ");

    //while Loop for creation of factorials less than equal or equal to 128
    while (i <= 128) {

        //Output of values
        printf("%d ", i);
        i *= 2;
    }

    //separation of while and for loop outputs
    printf("\nFor loop result:   ");

    //for Loop for creation of factorials less than equal or equal to 128
    for (i = 1; i<= 128; i*=2){
        printf("%d ", i);
    }

    //stops the program for closing immediately
    getch();
    return 0;
}
```



4

```c
#include <stdio.h>
#include <conio.h>

//inlude library that contains pow() function
#include<math.h>

int main(void)
{
    //Intialization of Data Types
    int n, np;

    //OUTPUT
    //for loop to print n and n values
    for (n=0; n<=10; n+=1) {

        //calculates for 2 to the power of n
        np = pow(2, n);
        printf("%d %d \n", n, np);
    }

    //stops the program for closing immediately
    getch();
    return 0;
}
```

```
1 2
2 4
3 8
4 16
5 32
6 64
7 128
8 256
9 512
10 1024
```

5

```c
#include <stdio.h>
#include <conio.h>

int main(void)
{
    //Intialization of Data Types
    int days, sday, dtrack, strack, rowtrack;

    strack=1;

    printf("Enter number of days in month: ");
    scanf("%d", &days);
    printf("Enter the starting day of the week (1=Sun, 7=Sat): ");
    scanf("%d", &sday);

    //Validation
    if (days<28 || days>31)
        printf("Number of days is invalid!");
    else if (sday<1 || sday>7)
        printf("Starting day is invalid!");

    //Calendar Creation
    else {

        for (dtrack=1; dtrack<=days; dtrack+=1){

            rowtrack =  (dtrack+sday-2)%7;
            if (rowtrack==0)
                printf("\n");

            for (; strack<=sday; strack+=1){
                if (strack==1)
                    printf("  ");
                else if (strack>1)
                    printf("   ");
            }

            if (dtrack == 1)
                printf("%d", dtrack);
            else if (dtrack < 10)
                printf("  %d", dtrack);
            else if (dtrack >= 10)
                printf(" %d", dtrack);


            }
    }


    //stops the program for closing immediately
    getch();
    return 0;
}
```

```
C:\Users\acer\Documents\CMSC21\Lecture4 - (native)\as...
Enter number of days in month: 29
Enter the starting day of the week (1=Sun, 7=Sat): 7
                    1
 2  3  4  5  6  7  8
 9 10 11 12 13 14 15
16 17 18 19 20 21 22
23 24 25 26 27 28 29
```