

Data Structures and Algorithms Essential Program

DAY-2 | ASSIGNMENT

1.)Write a program to print the following pattern

1
2*2
3*3*3
4*4*4*4

Sol.)

```
#include<stdio.h>
void main(){
int i,j;
for(i=1;i<=4;i++){
    for(j=1;j<=i;j++){
        if(j<i){
            printf("%d*",i);
        }
        else{
            printf("%d",i);
        }
    }
    printf("\n");
}
}
```

2.)Write a program to print the following pattern

1
01
101
0101
10101

Sol.)

```
#include<stdio.h>
void main(){
    int i,j;
    for(i=1;i<=5;i++){
        for(j=1;j<=i;j++){
            if(j%2==0&& i%2==0){
                printf("1");
            }
            else if(i%2!=0&& j%2!=0){
                printf("1");
            }
            else if(i%2==0&& j%2!=0){
                printf("0");
            }
        }
    }
}
```

```

        }
        else if(i%2!=0&&j%2==0){
            printf("0");
        }
    }
    printf("\n");
}

```

3.) Write the similarity and difference between an array name and a pointer variable.

Sol.) Array name: In C array name is used to declare an array and store elements of same data type in memory in a contiguous manner.

Pointer: In C pointer is used to store the address of a variable or point to the location of a variable. pointer can also be used to traverse the array elements.