Assignment-2

1) Write a program to print the following pattern

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

2) Write a program to print the following pattern

```
1
0 1
1 0 1
0 1 0 1
1 0 1 0 1
```

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

Soln 1 -

```
#include<stdio.h>
#include<conio.h>
void main(){
    int i,j,rows;
    clrscr();
    printf("Enter no. of rows: ");
    scanf("%d",&rows);
    for(i=1;i<=rows;i++){
        for(j=1;j<=((2*i)-1);j++){
            if(j%2==0)
                printf("*");
            else
                printf("%d",i);
        }
        printf("\n");
    }
    getch();
}
```

Output

```
Enter no. of rows : 4
1
2*2
3*3*3
4*4*4*4
```

Q2 -

```
#include <stdio.h>
#include <conio.h>
void main(){
    int i,j,rows;
    clrscr();
    printf("enter no. of rows : ");
    scanf("%d", &rows);
    for(i=1;i<=rows;i++){
        for(j=1;j<=i;j++){
            if((i+j)%2==0)
                printf("1");
            else
                printf("0");
        }
        printf("\n");
    }
    getch();
}
```

Output

```
Enter no. of rows:
1
0 1
1 0 1
0 1 0 1
1 0 1 0 1
```

Q13

- An array is a collection of elements of similar data type whereas the pointer is a variable that stores the address of another variable.
- An array size decides the number of variables it can store whereas a pointer variable can store the address of only one variable in it.
- Array can be initialized at the definition, while pointers cannot be initialized at the definition
- Arrays are allocated at compile time while pointers are allocated at runtime.