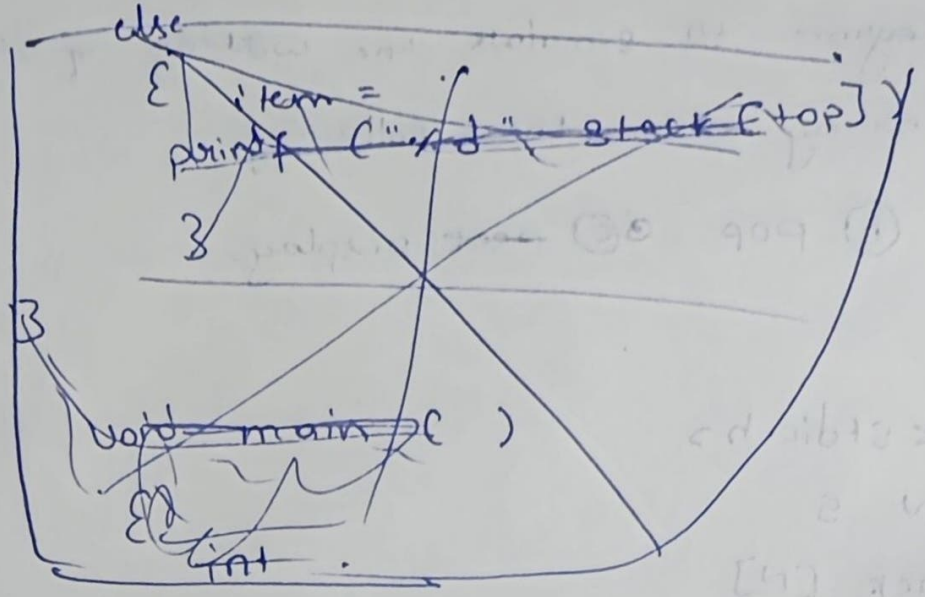
Week:01

① write a program to simulate the working of stack using an array with the following

(a) push (b) pop (c) ~~peek~~ display.

code:-

```
# include <stdio.h>
# define N 5
  int stack [N]
  int top = -1;
  void push ()
  {
    int x;
    printf ("Enter the element to be pushed");
    scanf ("%d",&x);
    if (top == N-1) {
      printf ("stack over flow")
    }
    else
    {
      top++;
      stack [top] = x
    }
}
void pop ( )
  { int item;
    if (top == -1)
    {
      "underflow" printf ("underflow");
    }
```




```
else
{
    item = stack[top];
    top--;
    printf("%d", item);
}
}
void peek()
{
    if (top == -1)
    {
        "underflow"
    }
    else
    {
        printf("%d", stack[top])
    }
}
```

```
Void main ( )
{
    int a ;
    printf ("Enter choice ; 1. push 2. pop 3. peek
                    4. display");

        Scanf ("%d ", &a );
        Switch (a)
        {
        case 1:  push ();
                 break ;
        Case 2 : pop ();
                 break ;
        Case 3 :  peek ();
                  break ;
        Case 4 : if (top == -1 {
                    printf ("stack is empty");
                 else
                 for (int i = top ; i >0 ; i--){
                    printf ("%d", stack(top));
                 3
                 break ;
        default : printf ("invalid choice")
                  break.
```

O/P

Enter choice :

1. push
2. pop
3. Peek
4. Display
5. Exit

1

Enter the elements to be pushed : 4

Enter Choice :

2

The removed element is : 4

Enter choice :

3

stack is empty

Enter choice

4

stack is empty

Enter choice

5

Exiting program