WEEK 2

2) Write a program to simulate working of stack using an array with fall.
a) Push b) Pop c) Display.
Prog should print app. messages for underflow & overflow

```
#include <stdio.h>
#include <stdlib.h>
int size
int arr[25];
int top= -1;
int item;

void push();
int main();
void display();

int main()
{
    int item_del;
    int ch;
    printf ("Enter size of stack \n");
    scanf ("%d", &size);
    for(;;)
    {
        printf ("\n1. Push \n2. Pop \n3. Display \n0. Exit\n");
        scanf ("%d", &ch);
        switch(ch);
        {
            case 1 : push();
                     break;
            case 2 : item_del= pop();
                     if (item_del == -1)
                        printf ("Stack is empty (underflow)\n");
```

```
        else
        printf("Item Deleted : %d\n", item_del);
        break;
case 3: display();
        break;
case 0: printf("Exiting\n");
        exit(0);
        break;
default: printf("Invalid choice\n");
    }
}
return 0;
}

void push()
{
    if (top == size-1)
    printf("stack is filled (overflow)\n");
    else
    {
        printf("Enter Item to be inserted in stack\n"); fflush(stdin);
        scanf("%d", &item);
        arr[++top] = item;
    }
}
int pop()
{
    if (top == -1)
    {
        return -1;
    }
    else
        return arr[top--];
}
```

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```
void display()
{
    int i;
    if (top == -1)
        printf("Stack is Empty\n");
    else
    for(i=0; i<=top; i++)
        printf("Element %d : %d\n", i+1, a[i]);
}
```

Output

```
Enter size of stack
5

1. Push
2. Pop
3. Display
0. Exit
1
Enter item to be inserted
1

1. push
2. pop
3. display
0. Exit
2
Item deleted : 1

1 push
2. pop
3. display
```

0. Exit
2
Stack is Empty (underflow)

1 push
2 pop
3 display
0 Exit
0
Exiting