WEEK 2

→ Write a program to simulate the working of stack using an array with the following, a) Push, b) pop, c) display the progam should print appropriate messages for stack underflow and overflow

```
#include <stdio.h>

void push()
void pop()
void display()

int main(){
    int stack[100],choice,to,x,i;
    top=-1;
    printf("\nEnter size of stack: ");
    scanf("%d",&n);
    printf("\n1. push \n2. pop \n3. Display \n4.
            exit");
```

```
do{
    printf("\n Enter your choice:");
    scanf("%d",&choice);
    switch(choice){
        case 1:{
            push();
            break;
        }
    case 2:{
            pop();
            break;
        }
    case 3:{
            display();
            break;
    }
case 4:{
            printf("\n exited");
            break;
default:{
            printf("\n Enter a valid choice");
}
}
```

```
    while(choice!=4);
    return 0;
}

void push(){
        if (top >= n-1){
            printf ("\n stack overflow");
        } else {
            printf("Enter value to be pushed: ");
            scanf ("%d", &x);
            top++
            stack[top] = x;
        }
}

void pop() {
        if(top <= -1){
            printf ("\n stack underflow");
        }else {
            printf("\n popped element is %d", stack[top]);
            top--;
        }
}
```

```
Void display(){
    if(top>=0){
        Printf("\n elements in the stack\n");
        for(i=top; i>=0 ;i--)
            printf("\n>\n>%.d", stack[i]);
    }else{
        printf("\n stack is empty");
    }
}
```