18/12/23

1. Write a program to simulate the working of a stack using an array with the following:
a) Push
b) Pop
c) Display

```
#include <stdio.h>
#include <stdlib.h>
#define N 5
int stack[N];
int top = -1;
void push() {
 if (top == N)
  {
   printf("Stack Overflow");
 }
 else
  {
  int x;
  printf("Enter the element to be inserted");
  scanf("%d", &x);
  top++;
  stack[top] = x;
 }
}
void pop() {
 if (top == -1) {
   printf("Stack Underflow");
  }
 else {
   int y;
   y = stack[top];
   top--;
   printf("The element deleted is %d", y);
```

```
    }
}
void display(){
  if (top==-1)
    {
    printf("Stack is empty");
    }
  else
    {
    int i;
    printf("The elements in the stack are:");
    for(i=N; i>=0; i--)
      {
      printf("%d", stack[i]);
    }
}
}
void main(){
while(1){
  int choice;
printf("Enter your choice: \n1. Push \n2. Pop \n3. Disp
\n4. Exit");
scanf("%d", &choice);
switch(choice)
  {
case 1: push();
        break;
case 2: pop();
        break;
case 3: display();
        break;
case 4: exit(1);
break;
default: printf("Invalid Input");
```

}
}
}

O/p Enter your choice:
1. Push
2. Pop
3. Display
4. Exit 1
Enter the element to be inserted 4
Enter your choice:
1. Push
2. Pop
3. Display
4. Exit 1
Enter the element to be inserted 5
Enter your choice
1. Pop
2. Push
3. Display
4. Exit 3
The elements in the stack are: 00054
Enter your choice:
1. Push
2. Pop
3. Display
4. Exit

18/12/23