1.Write a program o stimulate the working of stack using an array with the following:

a)Push

b)Pop

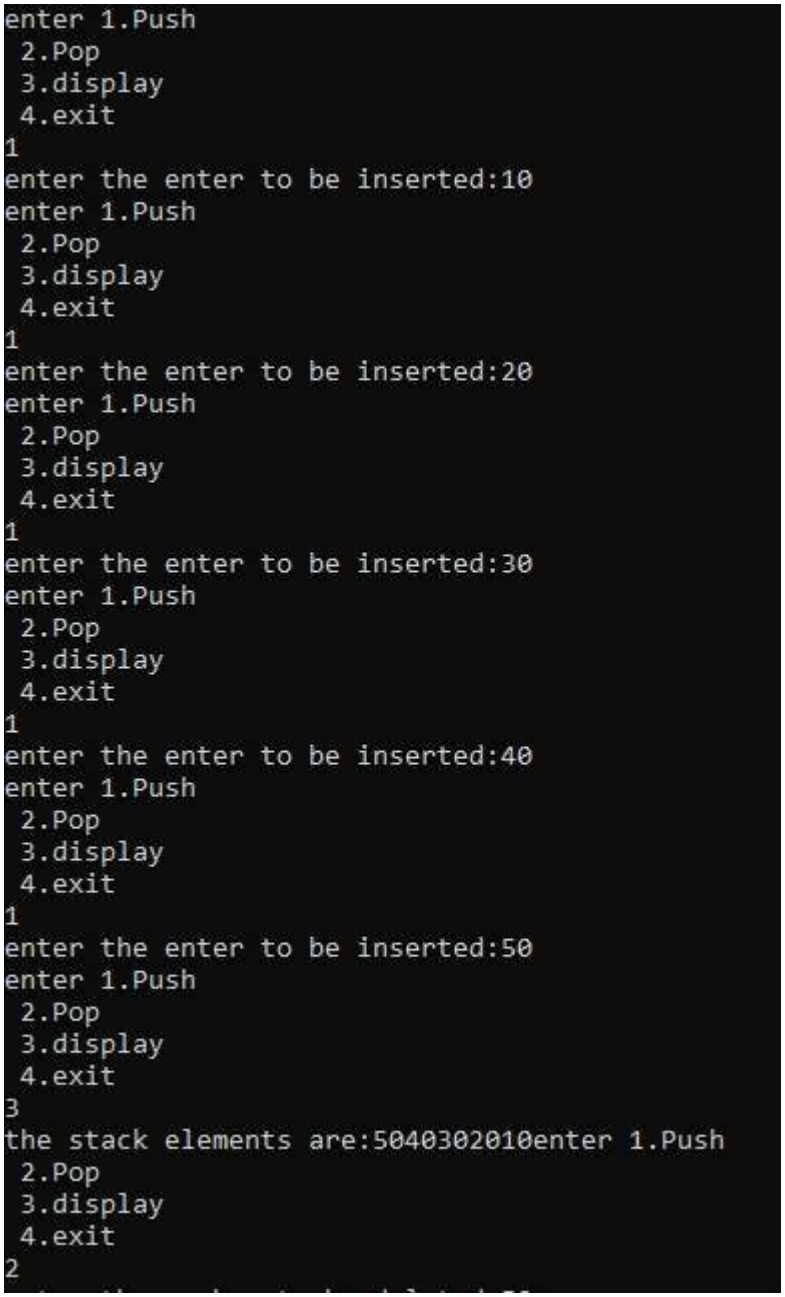
c)Display

```
#include <stdio.h>
#include <stdlib.h>
#define N 5
void push();
void pop();
void display();
int stack[N];
int top=-1;

void push()
{
   if(top==N-1)
   {
      printf("stack is full overflow condition");
      return;
   }
   else{
      int num;
      printf("enter the enter to be inserted:");
      scanf("%d",&num);
```

```
        top++;
        stack[top]=num;
    }
}
void pop()
{
    if (top==-1)
    {
        printf("stack is empty underflow condition");
        return;
    }
    else{
        int item;
        printf("enter the number to be deleted:");
        scanf("%d",&item);
        item=stack[top];
        top--;
        printf("the popped element is %d",item);
    }
}
void display()
{
    int i;
    printf("the stack elements are:");
    for(i=top;i>=0;i--)
        printf("%d",stack[i]);
```

```
}
void main()
{
   int choice;
   printf("enter 1.Push\n 2.Pop\n 3.display\n 4.exit\n");
   scanf("%d",&choice);
   do
   {
      switch(choice)
      {
      case 1: push();
            break;
      case 2: pop();
            break;
      case 3: display();
           break;
      case 4: exit(0);
      }
      printf("enter 1.Push\n 2.Pop\n 3.display\n 4.exit\n");
      scanf("%d",&choice);
   }while(choice!=4);
}
```


enter 1.Push
2.Pop
3.display
4.exit
1
enter the enter to be inserted:10
enter 1.Push
2.Pop
3.display
4.exit
1
enter the enter to be inserted:20
enter 1.Push
2.Pop
3.display
4.exit
1
enter the enter to be inserted:30
enter 1.Push
2.Pop
3.display
4.exit
1
enter the enter to be inserted:40
enter 1.Push
2.Pop
3.display
4.exit
1
enter the enter to be inserted:50
enter 1.Push
2.Pop
3.display
4.exit
3
the stack elements are:5040302010enter 1.Push
2.Pop
3.display
4.exit
2

```
2
enter the number to be deleted:50
the popped element is 50enter 1.Push
 2.Pop
 3.display
 4.exit
2
enter the number to be deleted:40
the popped element is 40enter 1.Push
 2.Pop
 3.display
 4.exit
2
enter the number to be deleted:30
the popped element is 30enter 1.Push
 2.Pop
 3.display
 4.exit
2
enter the number to be deleted:20
the popped element is 20enter 1.Push
 2.Pop
 3.display
 4.exit
2
enter the number to be deleted:10
the popped element is 10enter 1.Push
 2.Pop
 3.display
 4.exit
2
stack is empty underflow conditionenter 1.Push
 2.Pop
 3.display
 4.exit
```