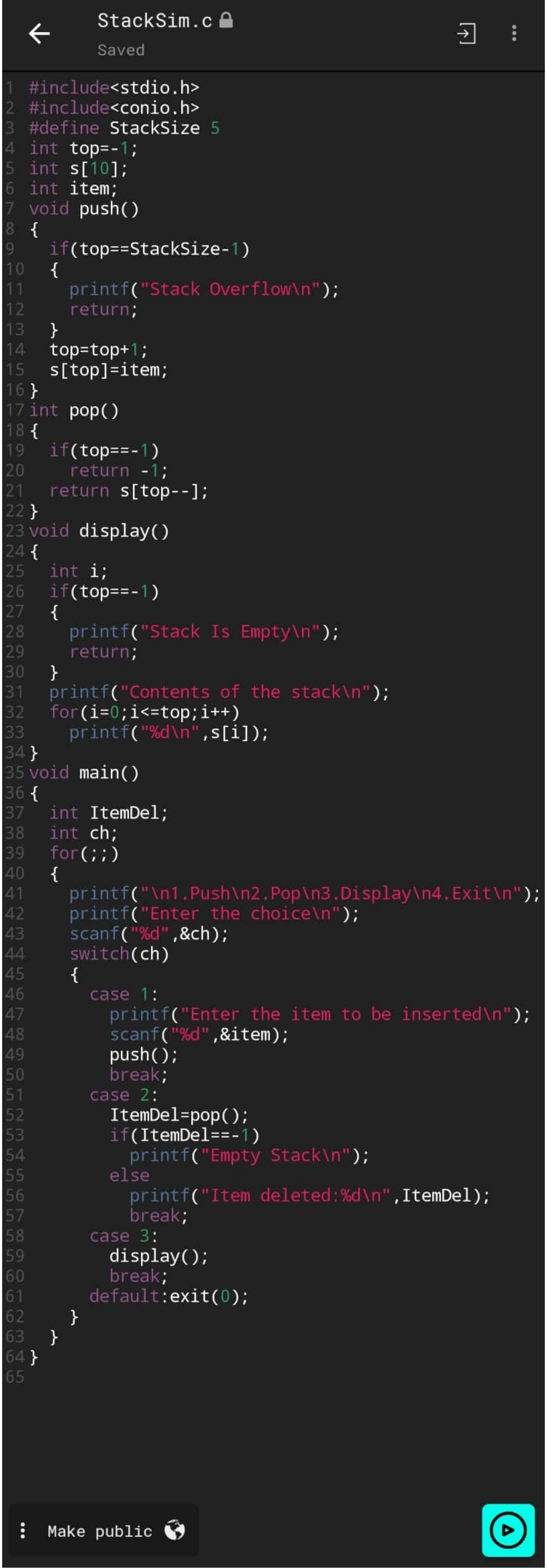
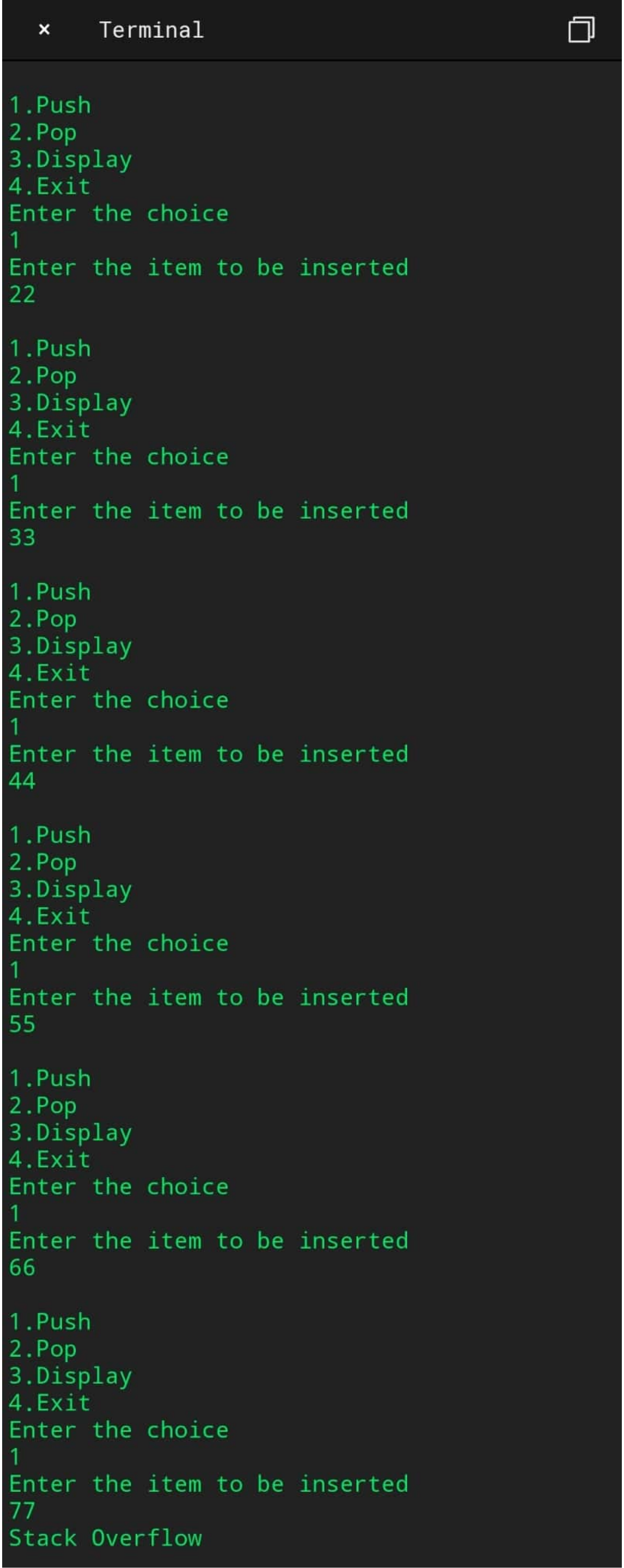
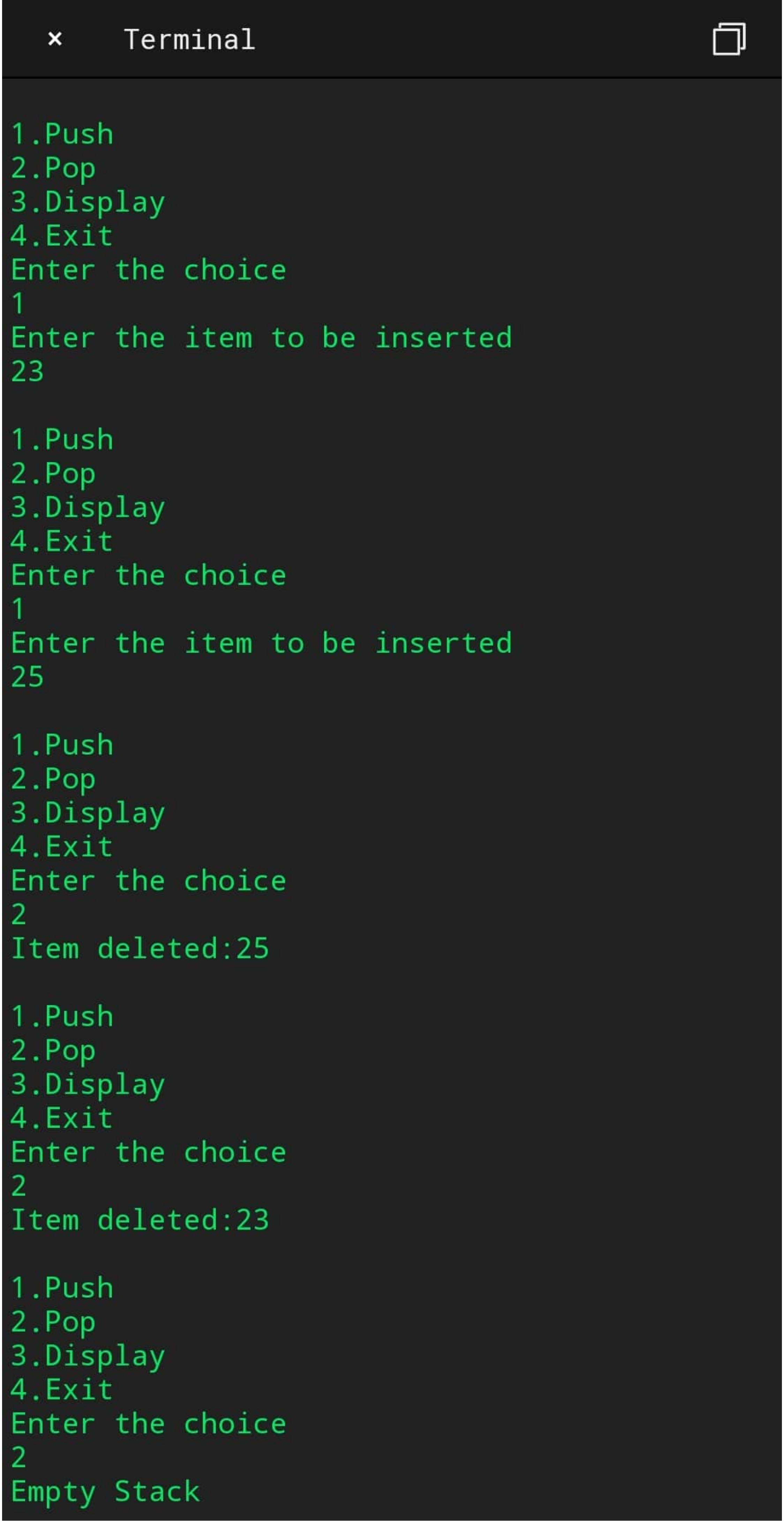


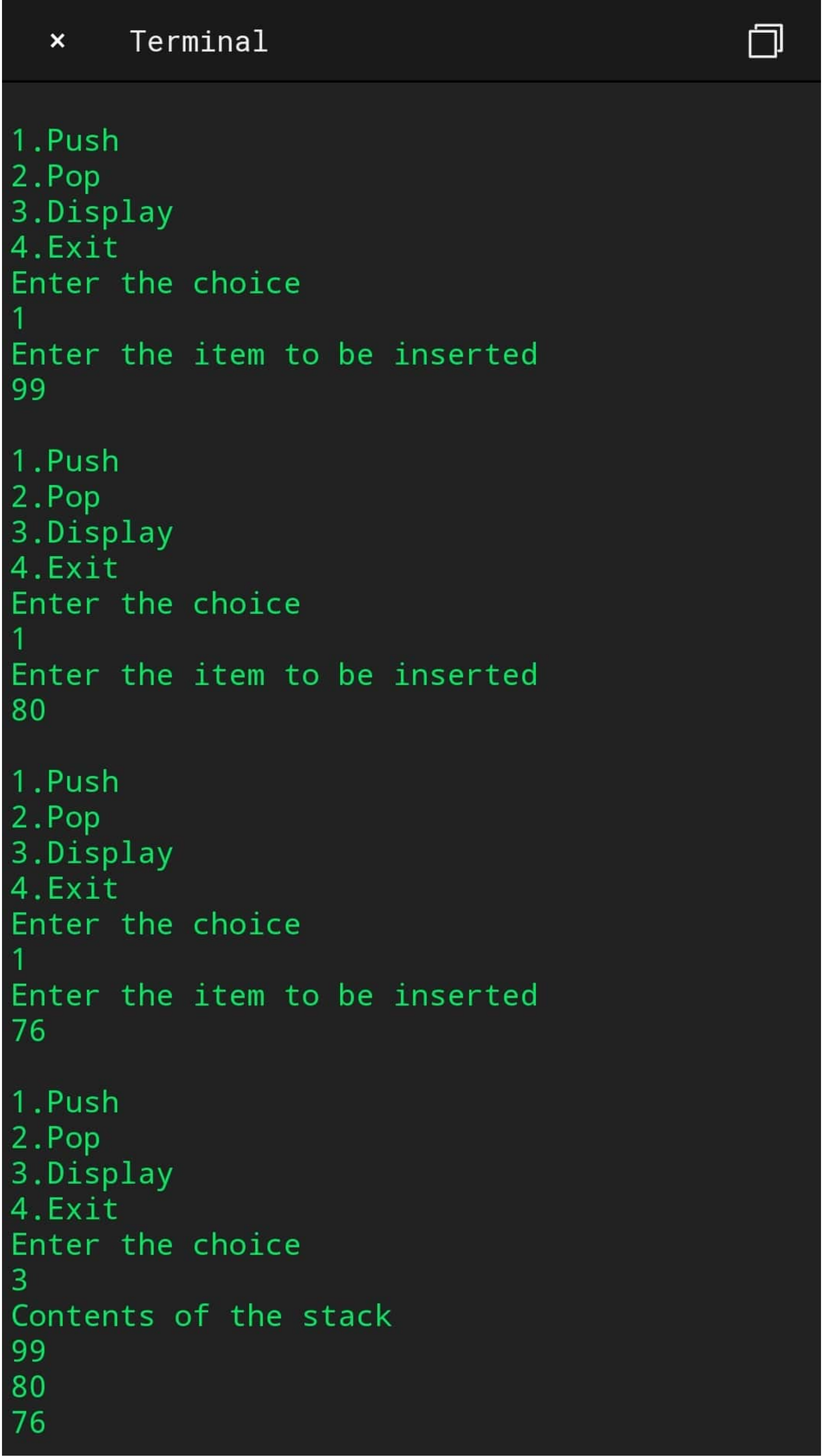
```c
#include<stdio.h>
#include<conio.h>
#define StackSize 5
int top=-1;
int s[10];
int item;
void push()
{
  if(top==StackSize-1)
  {
    printf("Stack Overflow\n");
    return;
  }
  top=top+1;
  s[top]=item;
}
int pop()
{
  if(top==-1)
    return -1;
  return s[top--];
}
void display()
{
  int i;
  if(top==-1)
  {
    printf("Stack Is Empty\n");
    return;
  }
  printf("Contents of the stack\n");
  for(i=0;i<=top;i++)
    printf("%d\n",s[i]);
}
void main()
{
  int ItemDel;
  int ch;
  for(;;)
  {
    printf("\n1.Push\n2.Pop\n3.Display\n4.Exit\n");
    printf("Enter the choice\n");
    scanf("%d",&ch);
    switch(ch)
    {
      case 1:
        printf("Enter the item to be inserted\n");
        scanf("%d",&item);
        push();
        break;
      case 2:
        ItemDel=pop();
        if(ItemDel==-1)
          printf("Empty Stack\n");
        else
          printf("Item deleted:%d\n",ItemDel);
          break;
      case 3:
        display();
        break;
      default:exit(0);
    }
  }
}
```



```
1.Push
2.Pop
3.Display
4.Exit
Enter the choice
1
Enter the item to be inserted
22

1.Push
2.Pop
3.Display
4.Exit
Enter the choice
1
Enter the item to be inserted
33

1.Push
2.Pop
3.Display
4.Exit
Enter the choice
1
Enter the item to be inserted
44

1.Push
2.Pop
3.Display
4.Exit
Enter the choice
1
Enter the item to be inserted
55

1.Push
2.Pop
3.Display
4.Exit
Enter the choice
1
Enter the item to be inserted
66

1.Push
2.Pop
3.Display
4.Exit
Enter the choice
1
Enter the item to be inserted
77
Stack Overflow
```



```
1.Push
2.Pop
3.Display
4.Exit
Enter the choice
1
Enter the item to be inserted
23

1.Push
2.Pop
3.Display
4.Exit
Enter the choice
1
Enter the item to be inserted
25

1.Push
2.Pop
3.Display
4.Exit
Enter the choice
2
Item deleted:25

1.Push
2.Pop
3.Display
4.Exit
Enter the choice
2
Item deleted:23

1.Push
2.Pop
3.Display
4.Exit
Enter the choice
2
Empty Stack
```



```
1.Push
2.Pop
3.Display
4.Exit
Enter the choice
1
Enter the item to be inserted
99

1.Push
2.Pop
3.Display
4.Exit
Enter the choice
1
Enter the item to be inserted
80

1.Push
2.Pop
3.Display
4.Exit
Enter the choice
1
Enter the item to be inserted
76

1.Push
2.Pop
3.Display
4.Exit
Enter the choice
3
Contents of the stack
99
80
76
```

23/9/20 1BM19CS090
RAHIL

2) Program to simulate working of stack using an array. a) Pop b) Display c) Push. The prg. should print appropriate msg for stack overflow and underflow.

code:

```
#include< stdio.h>
#include <conio.h>
#define StackSize 5
int top =-1;
int s[10];
int item;
void push()
{
  if(top == StackSize -1)
  {
    printf("Stack overflow\n");
    return;
  }
  top = top+1;
  s[top] =item;
}
int pop()
{
  if(top==-1)
  {
    ~~printf("Stack Is Empty\n");~~
    return-1; return s[top--];
} }
void display()
{
  int i;
  if(top==-1)
```

```
    {
      printf ("Stack is Empty \n");
       return ;
    }
    printf ("Contents of stack \n");
    for (i=0;i<=top; i++)
        printf (" %d \n", s[i]);
}
void main()
{
     int ItemDel;
     int ch;
     for (;;)
     {
       ~~case 1:~~
       ~~printf("Enter the item to~~
       printf ("\n1. Push \n2. Pop \n 3. Display \n4. Exit \n");
       printf (" Enter the choice \n");
        scanf (" %d", &ch);
        switch (ch)
        {
          case 1:
          printf (" Enter the item to be inserted \n");
           scanf (" %d", & item);
            push();
             break;
            case 2;
             ItemDel = pop();
             if (ItemDel== ~~pop~~ -1)
                 printf ("Empty stack \n");
            else
                printf (" Item deleted: %d\n", ItemDel);
                break;
                case 3 :
                  display ();
                   break ;
                 default : exit (0);
            }
        }
}
```