2)STACK implementation using arrays

```
#include<stdio.h>
int stack[100],choice,n,top,x,i;
void push(void);
void pop(void);
void display(void);
int main()
{
   //clrscr();
   top=-1;
   printf("\n Enter the size of the stack[max:100]:");
   scanf("%d",&n);
   printf("\n\tSTACK OPERATIONS USING ARRAYS");
   printf("\n\t1.PUSH\n\t2.POP\n\t3.DISPLAY\n\t4.EXIT\n");
   do
   {
      printf("Enter the choice:");
      scanf("%d",&choice);
      switch(choice)
      {
         case 1:{
            push();
            break;
         }
         case  2:{
            pop();
            break;
```

```
        }
        case 3:{
            display();
            break;
        }
        case 4:{
            printf("\n EXIT POINT");
            break;
        }
        default:{
            printf("\n PLEASE ENTER A VALID OPTION");
        }
      }
   }
   while(choice!=4);
   return 0;
}
void push(){
   if (top>=n-1){
      printf("\n\t STACK OVERFLOW\n");
   }
   else{
      printf("\n Enter a value to be pushed:");
      scanf("%d",&x);
      top++;
      stack[top]=x;
   }
}
```

```
void pop(){
   if (top<=-1){
      printf("\n\n STACK IS UNDERFLOW \n");
   }
   else{
      printf("\n\t The popped value is %d\n",stack[top]);
      top--;
   }
}
void  display(){
    if (top >= 0) {
      printf("\n The elements in the stack are: \n");
      for (i = 0; i <= top; i++) {
         printf("%d ", stack[i]);
      }
      printf("\n Press next choice\n");
   } else {
      printf("\n The stack is empty!!\n");
   }
}
```

Output

```
Enter the size of the stack[max:100]:3
STACK OPERATIONS USING ARRAYS
        1. PUSH
        2. POP
        3. DISPLAY
        4. EXIT
Enter the choice:1
```

Enter a value to be pushed:2

Enter the choice:1

Enter a value to be pushed:4

Enter the choice:1

Enter a value to be pushed:6

Enter the choice:1

STACK OVERFLOW

Enter the choice:3

The elements in the stack are:

2 4 6

Press next choice

Enter the choice:2

The popped value is 6

Enter the choice:2

The popped value is 4

Enter the choice:2

The popped value is 2

Enter the choice:2

STACK IS UNDERFLOW

Enter the choice:4

EXIT POINT