Lab program 1:

write a progam to simulate the working of stack using an array with the following

(a) push
(b) pop
(c) display

The program shoud print appropriate message for stack overflow and stack underflow

```
#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\t Stack operations using array");
```

```
printf("\n\t 1. Push \n\t 2. Pop\n\t
        3. Display \n\t 4. Exit ");

{
  printf("\n Enter the choice :");
  scanf("%d", &choice);
  switch (choice)
  {
  case 1 :
{
   push ();
    break ;
}
case 2:
{
   pop();
   break ;
}
 case 3:
{
  display ();
  break ;
}
case 4:
{ printf("\n\t Exit point");
   break ;
}
```

```
default:
{ printf("\n\t Please enter a valid choice
                (1/2/3/4)");
  }
  }
  }
while (choice != 4);
return 0;
}
void push()
{
  if (top >= n-1)
    { printf("\n\t stack is overflow");
    }
  else
    {
      printf("Enter a value to be pushed:");
      scanf("%d",&x);
      top++;
    stack[top] = x;
  }
}
void pop()
{
```

```
if (top<=-1)
{
printf("\n\t stack is underflow");
}
else
{
printf("\n\t The popped elements is
        %d", stack[top]);
  top--;
 }
}
void display()
{
 if (top>=0)
 {
 Printf("\n The element in stack\n");
  for (i=top; i>=0; i--)
    printf("\n %d", stack[i]);
  printf("\n press next choice");
}
 else
 {
  printf("\n The stack is empty");
 }
}
```