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STACK IMPLEMENTATION USING ARRAYS

INPUT

```
#include<stdio.h>
#include<stdlib.h>
#define size 3
int stack[size];
int top=-1;

void push()
{
   if(top>=(size-1)){
      printf("stack overflow\n");
   }
   else{
      printf("enter the value to push\n");
      int n;
      scanf("%d",&n);
      top++;
      stack[top]=n;
   }
};
```

```
int pop()
{
   if(top==-1){
      printf("stack underflow\n");
      return;
   }
   else{
      int n;
      n=stack[top];
      top--;
      return n;
   }
};
void display(){
   if(top==-1){
      printf("empty stack\n");
      return;
   }
   else{
      for(int i=(top);i>-1;i--){
         printf("%d\n",stack[i]);
      }
   }
};
```

```
int main(){
   int choice;
   int del;
   while(1){
      printf("1.PUSH\n2.POP\n3.DISPLAY\n4.EXIT\n");
      scanf("%d",&choice);
      switch(choice){
         case 1: push();
               break;
         case 2:
               del=pop();
               printf("popped element: %d\n",del);
               break;
         case 3: display();
               break;
         case 4: exit(0);
         default:printf("enter a valid choice\n");
      }
   }
   return 0;
}
```

OUTPUT

```
1.PUSH
2.POP
3.DISPLAY
4.EXIT
1
enter the value to push
1
1.PUSH
2.POP
3.DISPLAY
4.EXIT
1
enter the value to push
2
1.PUSH
2.POP
3.DISPLAY
4.EXIT
1
enter the value to push
3
1.PUSH
2.POP
3.DISPLAY
4.EXIT
1
stack overflow
1.PUSH
2.POP
3.DISPLAY
4.EXIT
2
popped element: 3
1.PUSH
2.POP
3.DISPLAY
4.EXIT
3
2
1
1.PUSH
2.POP
3.DISPLAY
4.EXIT
4

Process returned 0 (0x0)   execution time : 30.827 s
Press any key to continue.
```