Stack Operation

```
#include<stdio.h>
#include<stdlib.h>

#define MAX 5

int stack[MAX];
int top = -1;

void push(int value){
   if(top == MAX-1){
      printf("\n stack overflow, cannot push %d", value);
   }
   else{
      top = top+1;
      stack[top]= value;
      printf("%d pushed into stack ", value);
   }
}

void pop(int value){
   if(top == -1){
      printf("\n Stack is empty, no element to pop");
   }
   else{
      printf("%d popped from stack", value);
      top = top-1;
   }
}
```

```
void display(){
   if(top == -1){
      printf(" Stack is empty.\n");
   }
   else{
      printf("Stack elements are:\n");
      for(int i = top; i>= 0; i--){
         printf("%d", stack[i]);
      }
   }
}

void peek(){
   if(top == -1){
      printf("stack is empty, no top element");
   }
   else{
      printf("top element is: %d", stack[top]);
   }
}

int main(){
   int choice, value;
   printf("\n -- stack operation menu--\n");
   printf("1.push \n 2.pop \n 3.display \n 4. peek \n 5. exit\n");
   while(1){
      printf("\nEnter your choice:");
      scanf("%d", &choice);
```

```
    switch(choice){
    case 1:
      printf("enter the element to push:");
      scanf("%d", &value);
      push(value);
      break;

    case 2:
      pop(value);
      break;

    case 3:
      display();
      break;

    case 4:
      peek();
      break;

    case 5:
      printf("Exiting the program");
      exit(0);
    default:
      printf("Invalid choice!, try again");
    }
  }
  return 0;
}
```

Output:

```
 -- stack operation menu--
1.push
 2.pop
 3.display
 4. peek
 5. exit

Enter your choice:1
enter the element to push:1
1 pushed into stack
Enter your choice:1
enter the element to push:2
2 pushed into stack
Enter your choice:1
enter the element to push:3
3 pushed into stack
Enter your choice:1
enter the element to push:4
4 pushed into stack
Enter your choice:1
enter the element to push:5
5 pushed into stack
Enter your choice:2
5 popped from stack
Enter your choice:3
Stack elements are:
4321
```

```
Enter your choice:4
top element is: 4
Enter your choice:6
Invalid choice!, try again
Enter your choice:5
Exiting the program
```