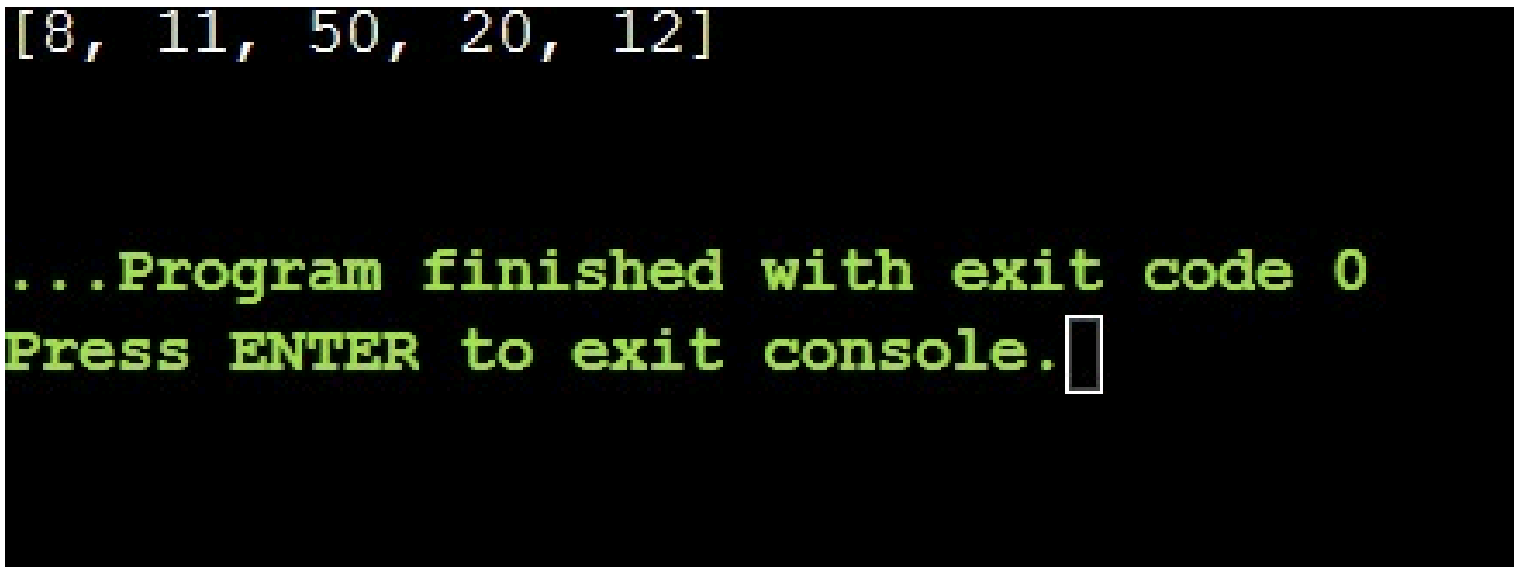
```python
def reverse_stack(stack):
    # Base case: if stack is empty, return
    if len(stack) == 0:
        return

    # Pop the top element
    top = stack.pop()

    # Reverse the rest of the stack
    reverse_stack(stack)

    # Insert the popped element at the bottom
    insert_at_bottom(stack, top)

def insert_at_bottom(stack, item):
    # Base case: if stack is empty, push the item
    if len(stack) == 0:
        stack.append(item)
        return

    # Pop the top element and store it
    top = stack.pop()

    # Recursively call insert_at_bottom to reach the bottom
    insert_at_bottom(stack, item)

    # Push the top element back after inserting the item at the bottom
    stack.append(top)

# Sample stack
stack = [12, 20, 50, 11, 8]

# Reverse the stack
reverse_stack(stack)

# Output the reversed stack
print(stack)
```


[8, 11, 50, 20, 12]
...Program finished with exit code 0
Press ENTER to exit console.