**ARRAY IMPLEMENTATION OF STACK**

**CODE:**

**MAX\_SIZE = 5**

**stack = []**

**top = -1**

**def push(book\_title):**

**global top**

**if top >= MAX\_SIZE - 1:**

**print("Stack overflow! Cannot push more books.")**

**else:**

**top += 1**

**stack.append(book\_title)**

**print(f"Book '{book\_title}' pushed onto the stack.")**

**def pop():**

**global top**

**if top == -1:**

**print("Stack underflow! Cannot pop any book.")**

**else:**

**removed\_book = stack.pop()**

**print(f"Book '{removed\_book}' popped from the stack.")**

**top -= 1**

**def peek():**

**if top == -1:**

**print("Stack is empty. No book to peek.")**

**else:**

**print(f"Top book on the stack: '{stack[top]}'")**

**def display():**

**if top == -1:**

**print("Stack is empty.")**

**else:**

**print("Books in stack (top to bottom):")**

**for i in range(top, -1, -1):**

**print(f"{i + 1}. {stack[i]}")**

**push("BOOK1")**

**push("BOOK2")**

**push("BOOK3")**

**push("BOOK4")**

**push("BOOK5")**

**push("Extra Book")**

**display()**

**peek()**

**pop()**

**pop()**

**display()**

**peek()**

**OUTPUT:**

**Book 'BOOK1' pushed onto the stack.**

**Book 'BOOK2' pushed onto the stack.**

**Book 'BOOK3' pushed onto the stack.**

**Book 'BOOK4' pushed onto the stack.**

**Book 'BOOK5' pushed onto the stack.**

**Stack overflow! Cannot push more books.**

**Books in stack (top to bottom):**

**5. BOOK5**

**4. BOOK4**

**3. BOOK3**

**2. BOOK2**

**1. BOOK1**

**Top book on the stack: 'BOOK5'**

**Book 'BOOK5' popped from the stack.**

**Book 'BOOK4' popped from the stack.**

**Books in stack (top to bottom):**

**3. BOOK3**

**2. BOOK2**

**1. BOOK1**

**Top book on the stack: 'BOOK3'**