

## **Stack as Array and Linked List Assignment**

Using our set of classes for our Card class, create 2 classes as:

- **ArrayStack:**
  - public ArrayStack()
  - public ArrayStack(int stackSize)
  - public Card top() throws StackUnderflowException
  - public Card pop() throws StackUnderflowException
  - public void push(Card card) throws StackOverflowException
  - public boolean isEmpty()
- **LinkedStack:**
  - public LinkedStack()
  - public Card top() throws StackUnderflowException
  - public Card pop() throws StackUnderflowException
  - public void push(Card card)
  - public boolean isEmpty()

Create a properties file containing a number of key/value pairs. One pair must be:

STACKSIZE=10

Using Java's Properties class, open the properties file and ascertain the value of the STACKSIZE property. Convert this String value to an int using the Integer.parseInt() method. Pass this value to the ArrayList constructor that accepts an int as the stack size.

Create a class with a main() method that creates an instance of each type of stack and exercises each method, verifying proper exception handling (calling top and pop on an empty stack and calling push on an ArrayStack that is "full"). Maintain all constants in a class dedicated to constants.

What are the characteristics of creating an array-based stack versus a linked list-based stack?