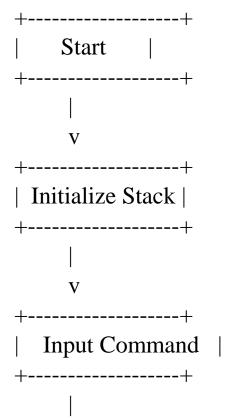## ❖ Stack:

- Explanation- Implement a stack data structure using an array in Java, which supports basic operations such as pushing elements onto the stack, popping the top element off, and displaying the current elements in the stack. The program should handle user input dynamically via the console, allowing for commands like "push <number>", "pop", "display", and "exit". Additionally, it must gracefully manage errors related to invalid commands and input formats, including case insensitivity for commands.
- Time Complexity- **Push**: O(1)

  Pop: O(1)
  Display: O(n)
- Space Complexity- O(n)
- Flowchart-

```
+------------------+
|      Start       |
+------------------+
         |
         v
+------------------+
| Initialize Stack |
+------------------+
         |
         v
+------------------+
|  Input Command   |
+------------------+
         |
```

```
              v
+-----------------+
|  Is Command =   |
|     "exit"?     |
+-----------------+
     /  \
   Yes    No
    |      |
    v      v
+-----------------+
|       End       |
+-----------------+
        |
        v
+-----------------+
|  Is Command =   |
|    "display"?   |
+-----------------+
     /  \
   Yes    No
    |      |
    v      v
+-----------------+
|  Display Stack  |
+-----------------+
        |
        v
+------------------+
|  Is Command =    |
|     "pop"?       |
+------------------+
```

```
        / \
      Yes    No
       |     |
        v     v
  +-----------------+
  |  Pop Operation  |
  +-----------------+
          |
          v
  +-----------------+
  |  Is Command =   |
  |     "push"?     |
  +-----------------+
        / \
      Yes    No
       |     |
        v     v
  +-----------------+
  |  Push Operation |
  +-----------------+
          |
          v
  +-----------------+
  |  Invalid Command |
  +-----------------+
          |
          v
  +-------------------+
  |  Go to Input Command  |
  +-----------------+
```