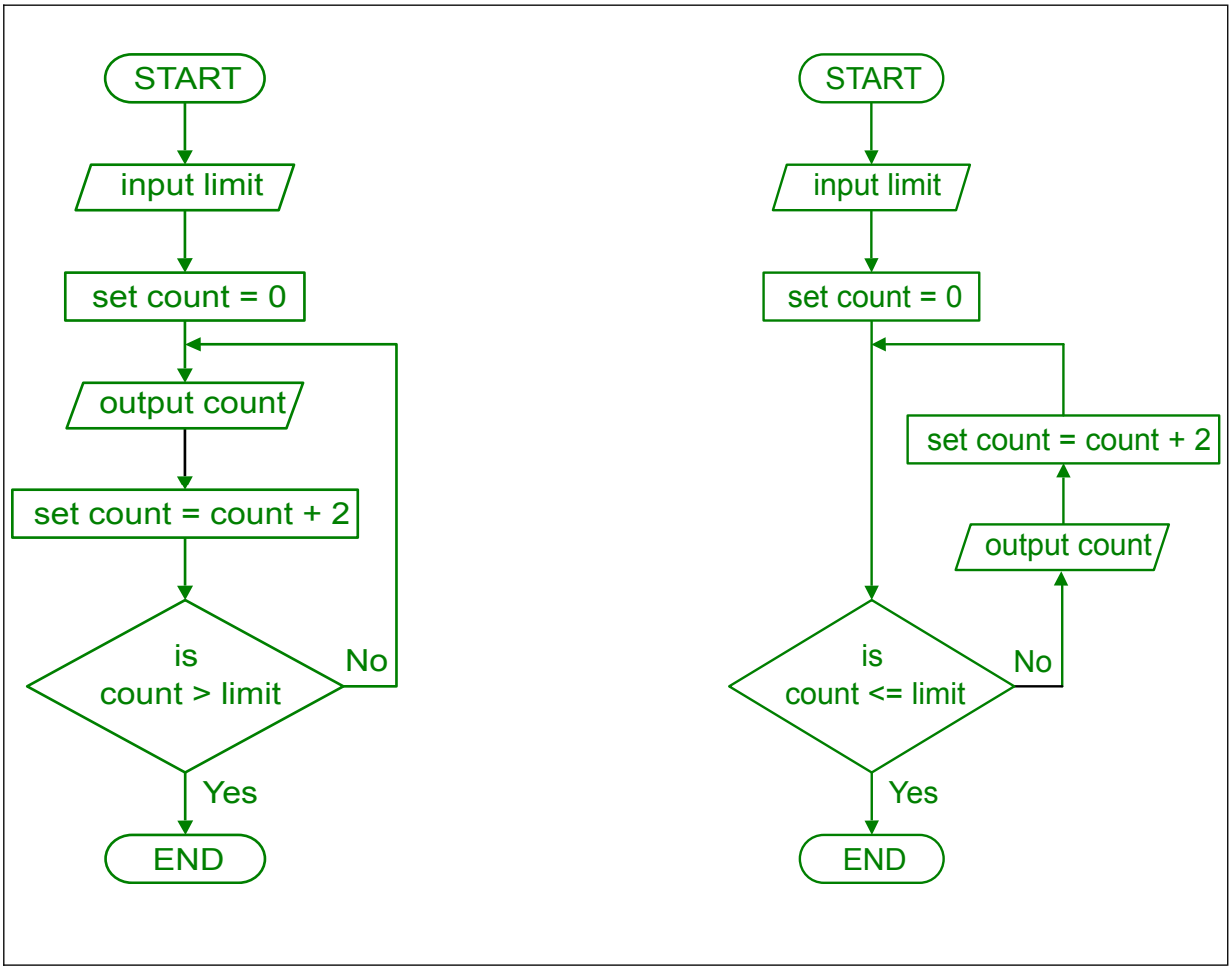
Flowcharts and Pseudocode

1a. Draw a ***flowchart*** that represents an algorithm that inputs an integer (call it `limit`) and outputs all <u>even</u> numbers from zero to `limit`, inclusive. (Assume `limit` is a whole number).



1b. Write the ***pseudocode*** for the flowchart above.

```
RECEIVE limit FROM KEYBOARD
SET count TO 0
REPEAT
    SEND count TO DISPLAY
    SET count TO count + 2
UNTIL count > limit
```

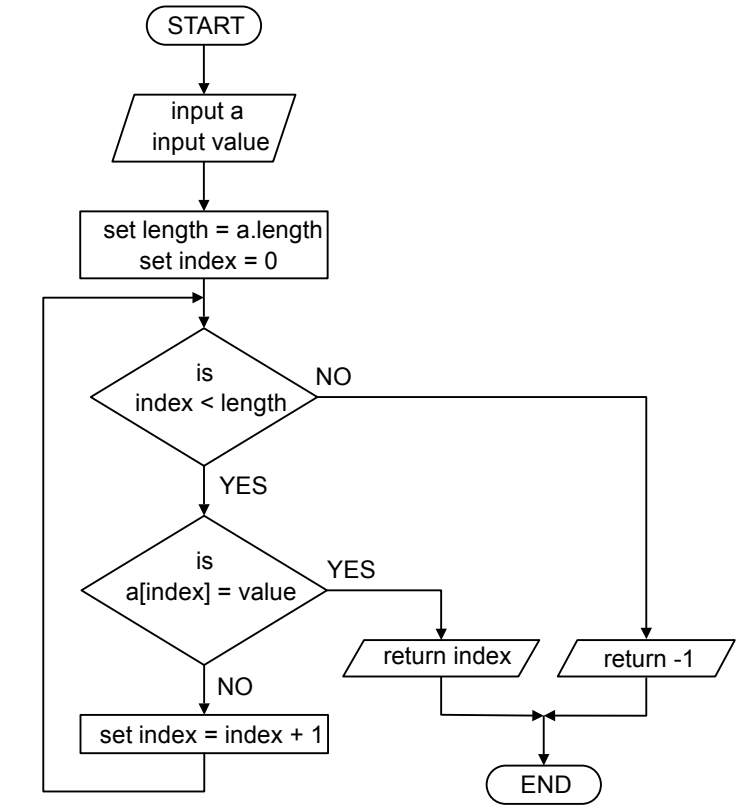
```
RECEIVE limit FROM KEYBOARD
SET count TO 0
WHILE count <= limit DO
    SEND count to DISPLAY
    SET count TO count + 2
END WHILE
```

Flowcharts and Pseudocode

2. Draw a ***flowchart*** that represents a ***linear search*** algorithm that will find a specific value in an array, then write the ***pseudocode*** for the flowchart as a ***function*** named `linearSearch`.
   - **Inputs**: the array (call it `a`), and the value to search for (call it `value`).
   - **Output**: the ***index*** in the array where the value is found; or a value of `-1` if the value is not found in the array.

   Important: in pseudocode (as well as programming languages), if the flow of the program encounters a `RETURN` statement, the function will exit from that point and not continue to run any code after that line.

Subprocess: linearSearch




```
FUNCTION linearSearch( a, value )
BEGIN FUNCTION
   SET length TO LENGTH(a)
   SET index TO 0
   WHILE (index < length) DO
      IF (a[index] = value) THEN
         RETURN index
      END IF
      SET index TO index + 1
   END WHILE
   RETURN -1
END FUNCTION
```