



CHIANG MAI UNIVERSITY
College of Arts, Media and Technology
1st Semester / Academic Year 2025
960101 Fundamentals of Programming Logic in Digital Industry

Lab Assignment 10: Arrays

Name Student ID Section.....

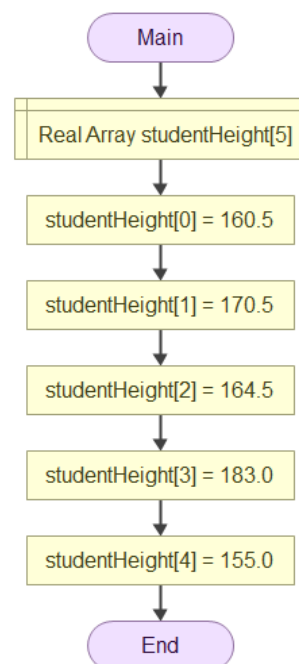
Objectives:

- 1) The student understands the concept of array.
- 2) The student can perform operations on array (creation, initialization, access, and assignment).

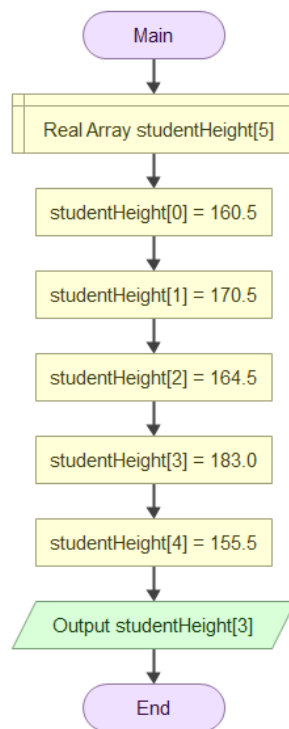
1. Flowgorithm

Example 1.1: Create a flowchart on **Flowgorithm** to create an array with the following values

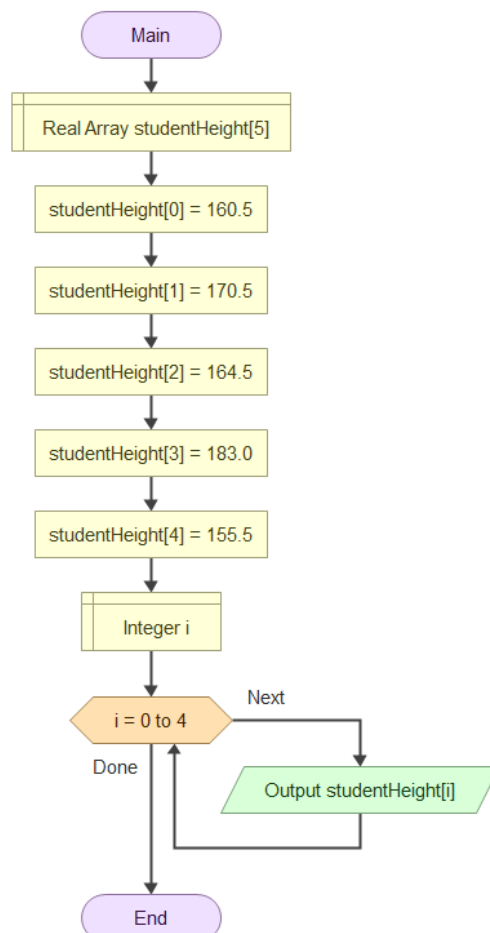
Index	0	1	2	3	4
studentHeight	160.5	170.5	164.5	183.0	155.0



Example 1.2: From the array in Example 1, display the value at index 3.

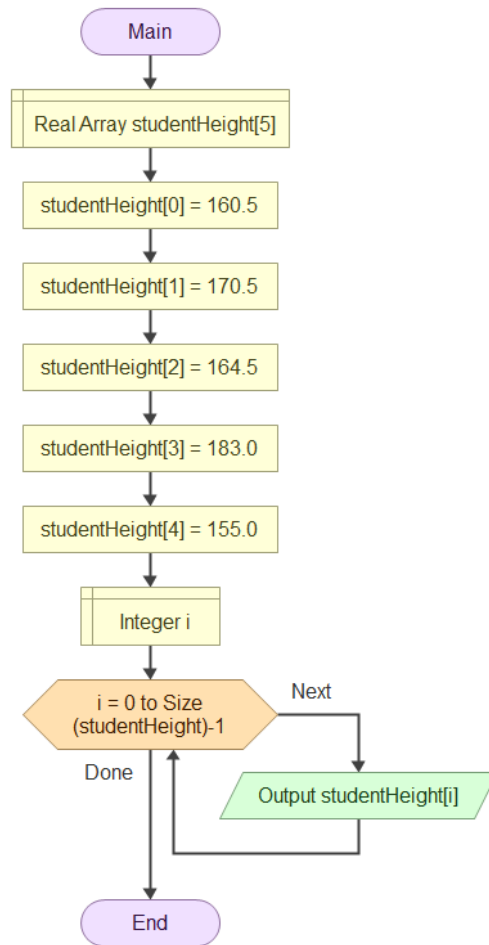


Example 1.3 : From the array in Example 1, use loop to display all value in the array.

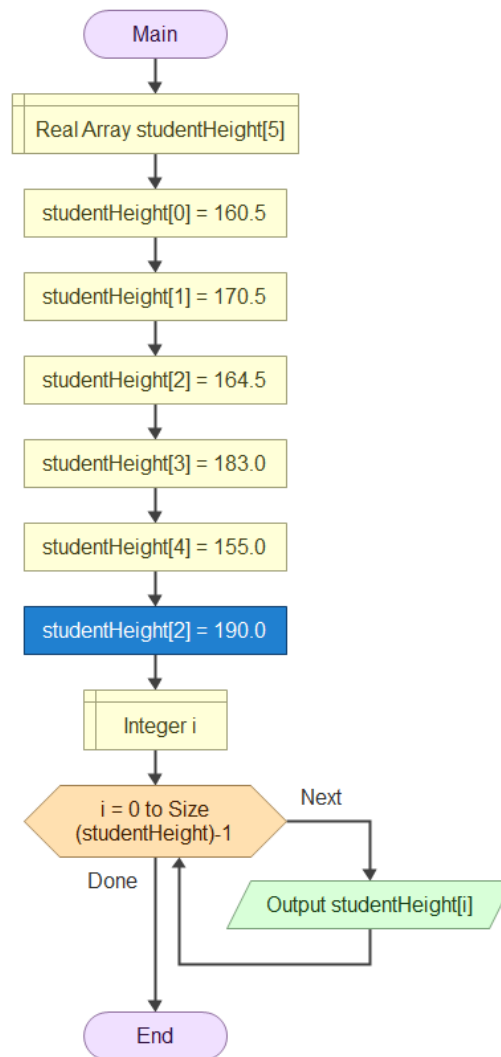


Example 1.4 : From the array in Example 1, display all value in the array by using array size “Size(a)” .

<http://www.flowgorithm.org/documentation/intrinsic-functions.html>



Example 1.5 : From the array in Example 1, replace value at index 2 to 190 and display all values in the array.



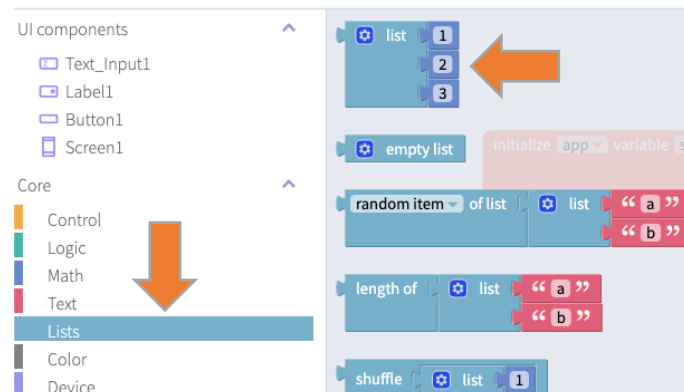
2. Thinkable

Example 2.1 : Create a program to create an array with the following values.

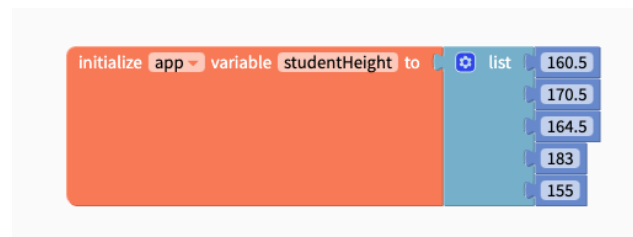
****Remark**** Thinkable array (Lists) index starts from 1 **

Index	1	2	3	4	5
studentHeight	160.5	170.5	164.5	183.0	155.0

- Create an array in Thinkable using “Lists”

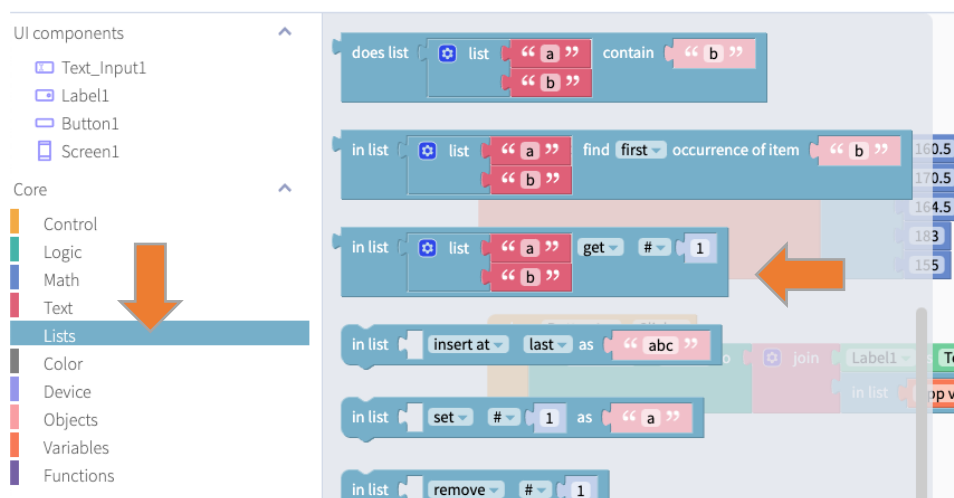


- Assign values of array

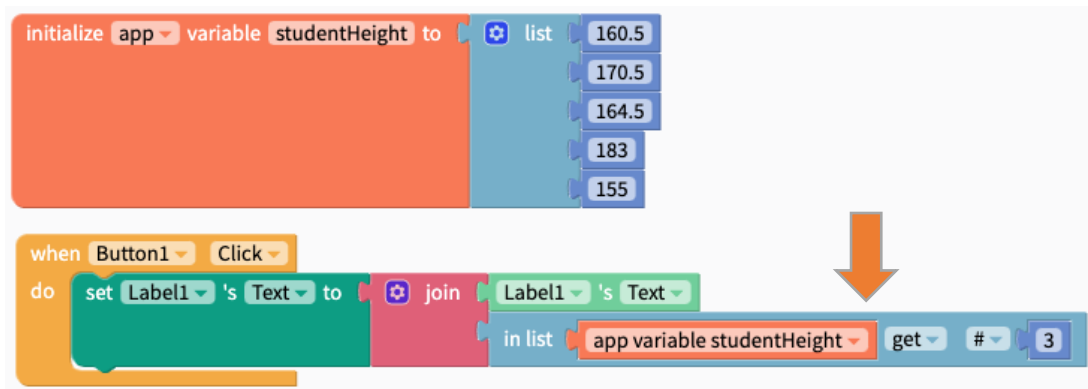


Example 2 : From the array in Example 1, display the value at index 3.

- Get a value of array using ‘in list’

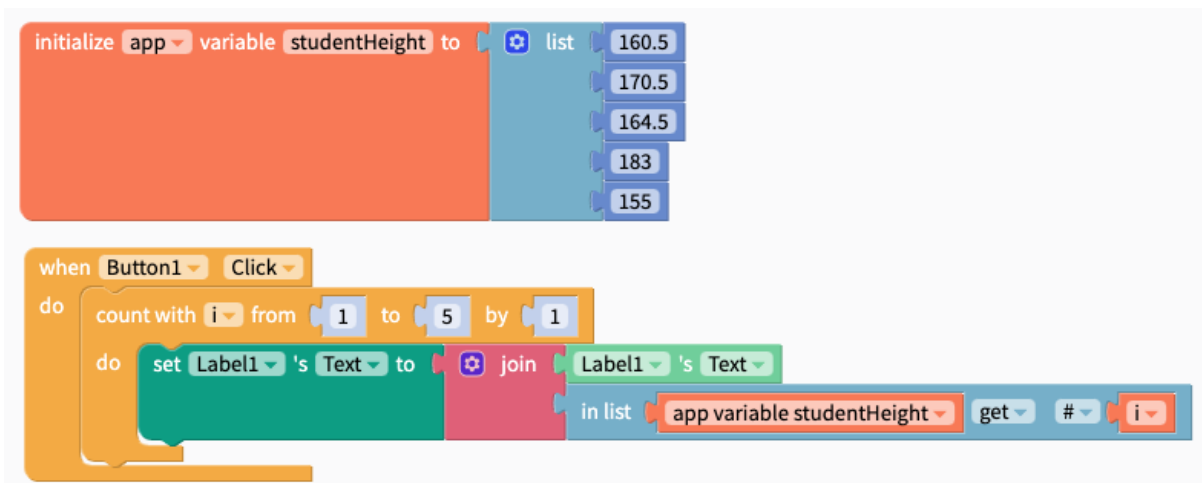


- Get a value of array index 3



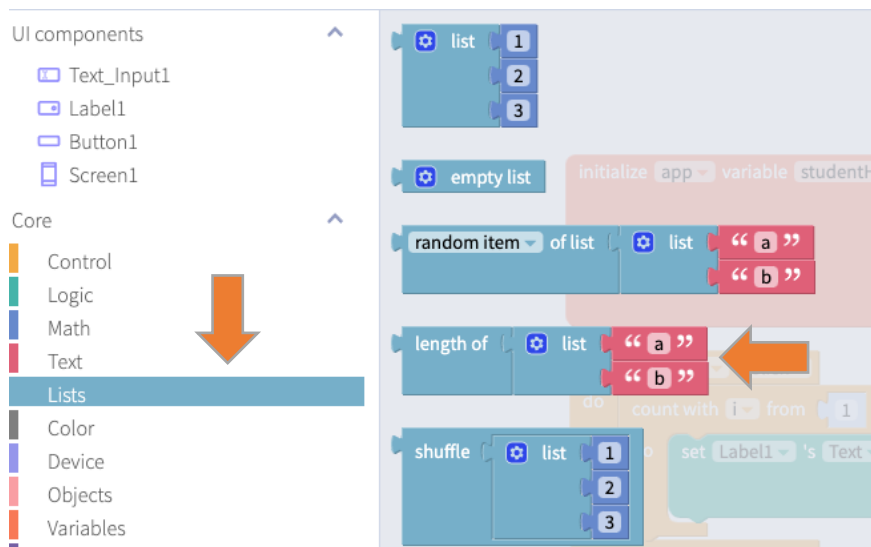
Example 3 : From the array in Example 1, display all value in the array.

- Use loop to display all value in the array

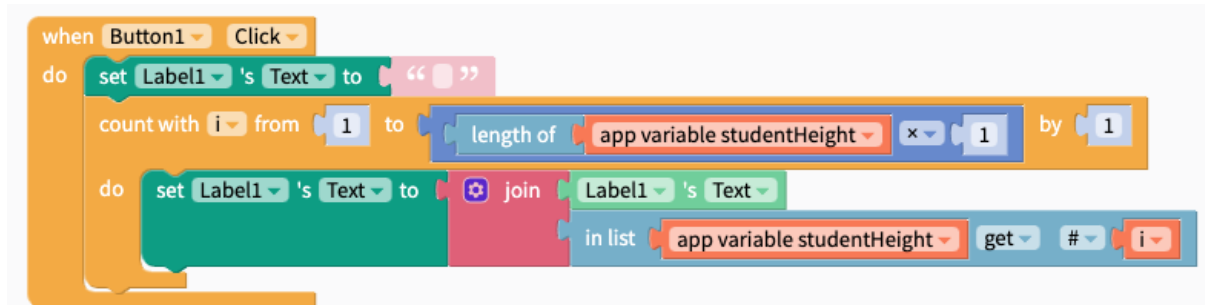
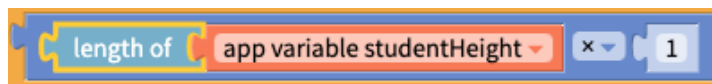


Example 4 : From the array in Example 1, display all value in the array by using array size.

- Get size of the array by using "length of"

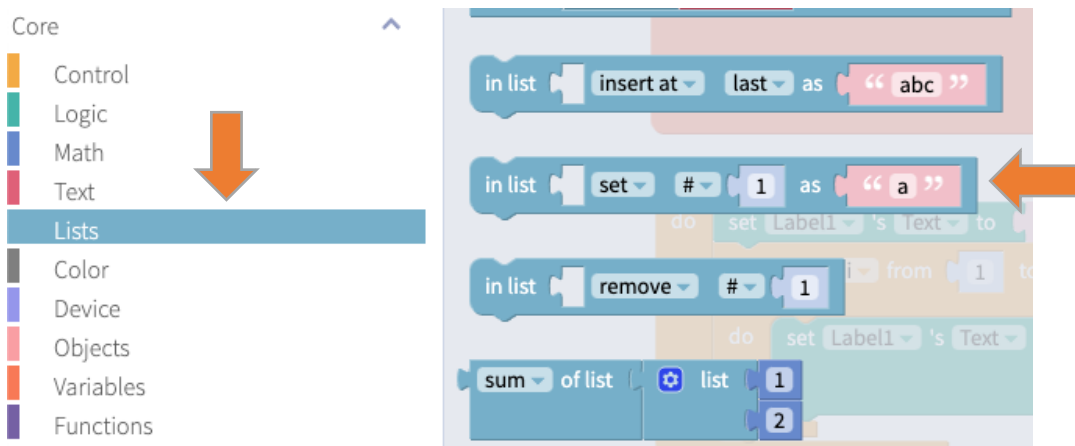


- Use loop to display all value in the array.

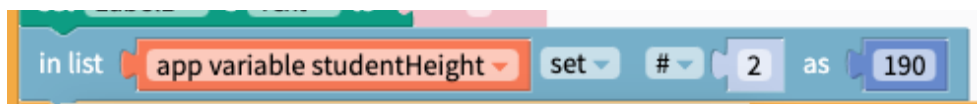


Example 5 : From the array in Example 1, replace value at index 2 to 190 and display all values in the array.

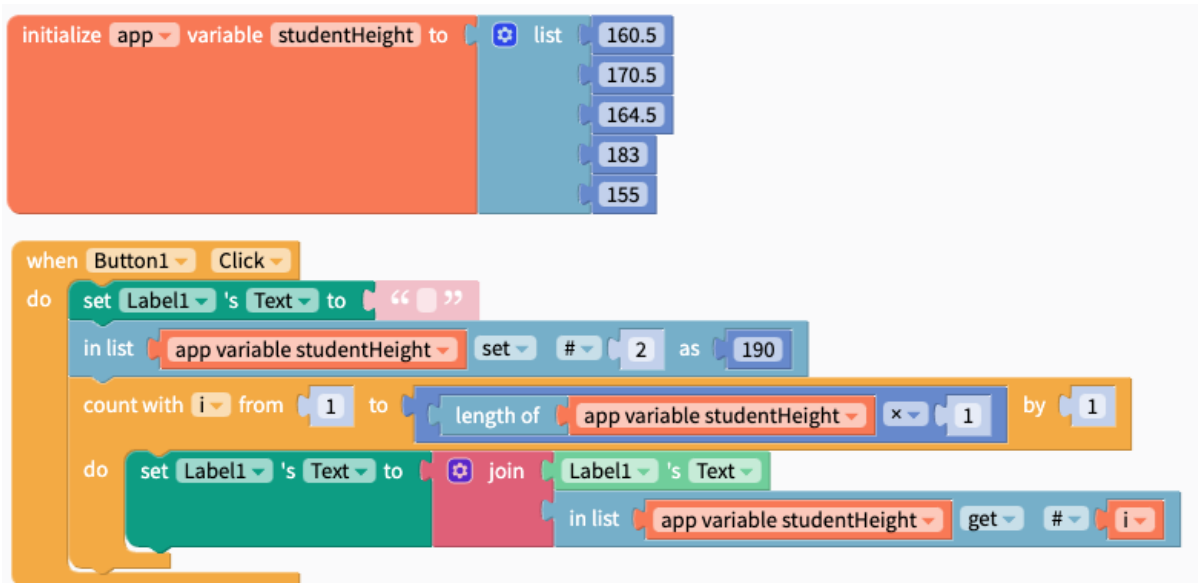
- Replace the value of the array using “in list”



- Set the replace value at index 2 to 190.



- Display all values in the array



Problems sets

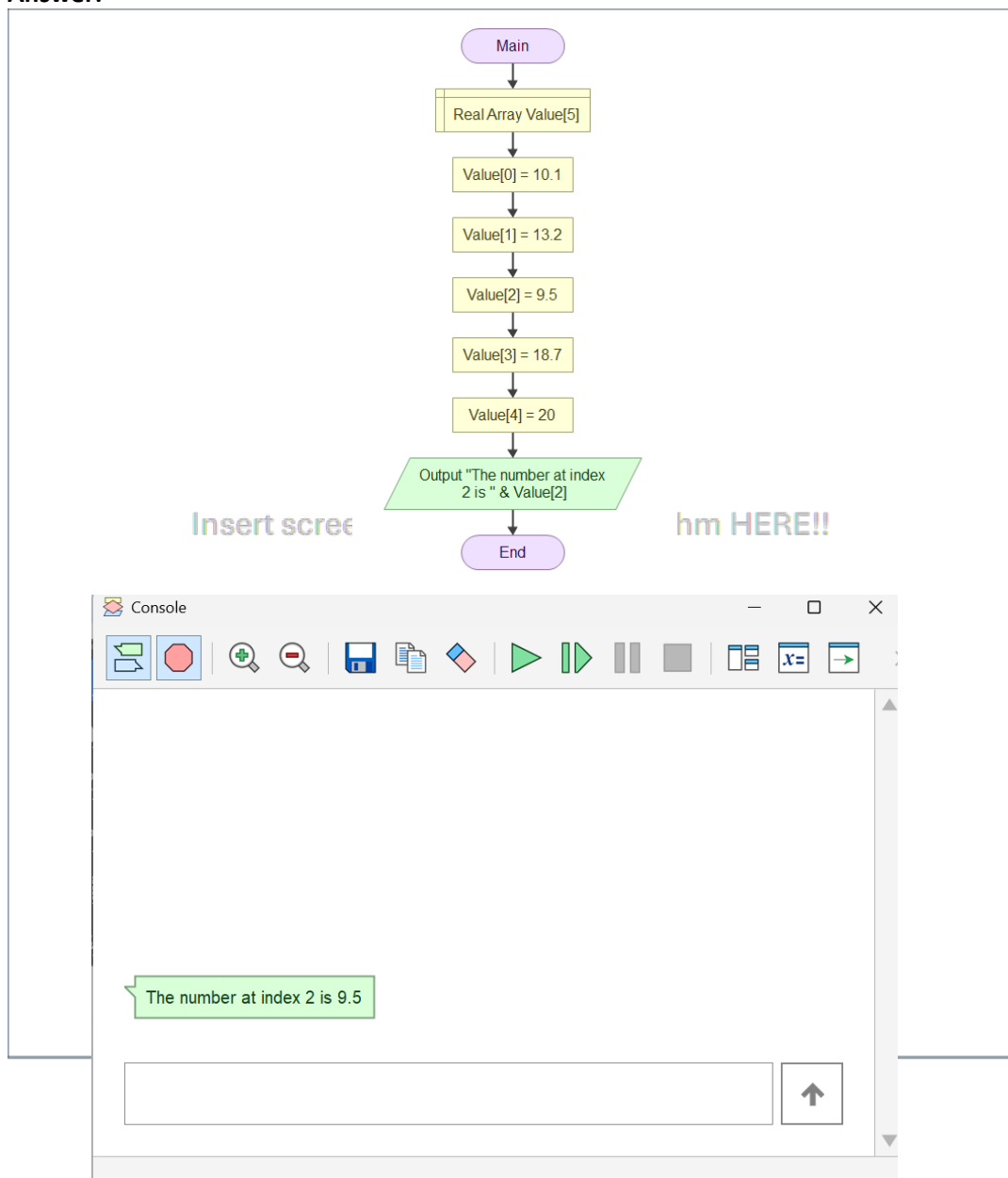
1. Create a flowchart on **Flowgorithm** to create an array with the following values

Index	0	1	2	3	4
Value	10.1	13.2	9.5	18.7	20.0

Then, display “The number at index 2 is” following by the value at index 2.

OUTPUT : The number at index 2 is 9.5

Answer:

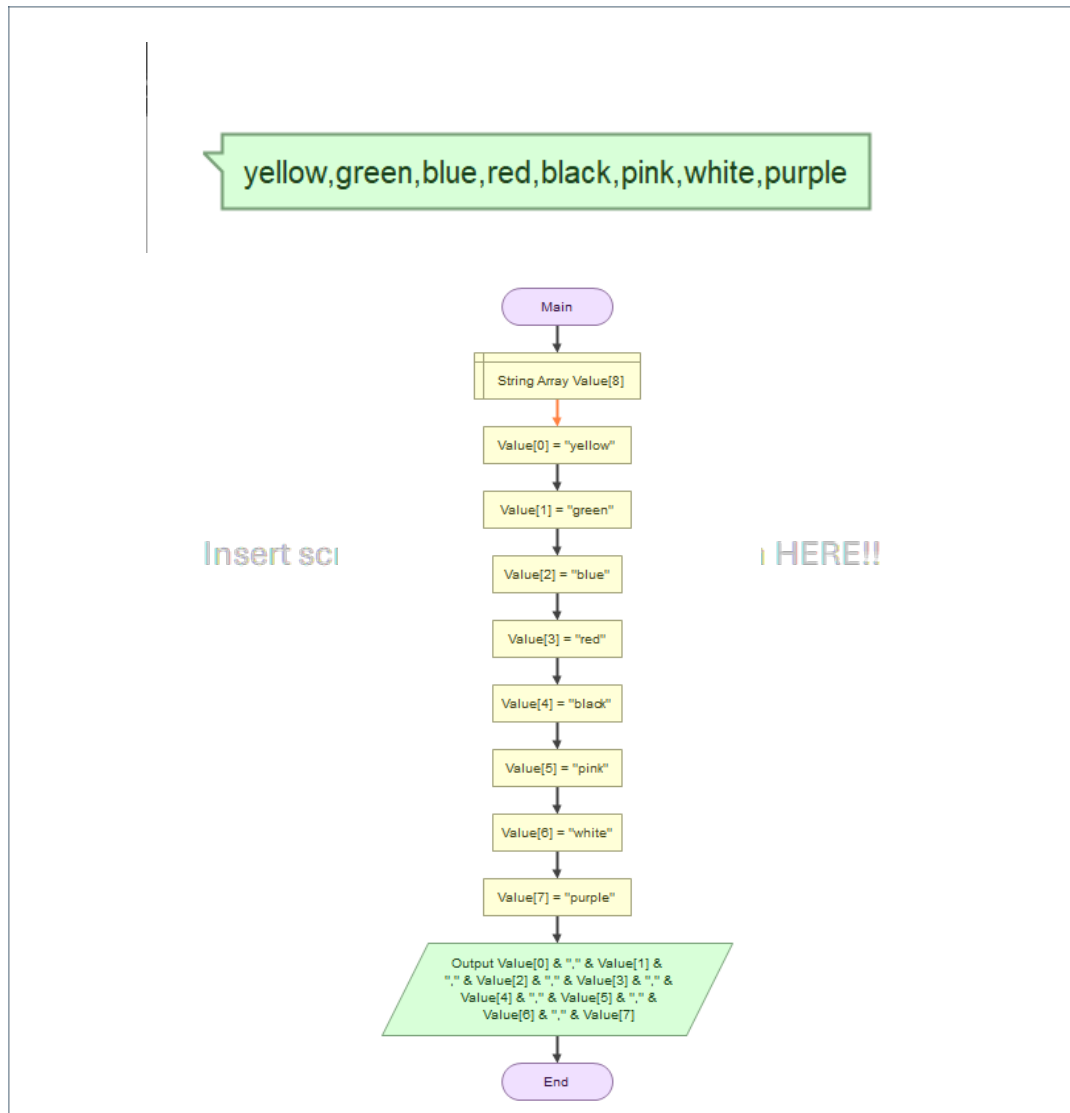


2. Create a flowchart on **Flowgorithm** to create an array with the following values. Then, display all values. (Repetition structure is **not allow**.)

Index	0	1	2	3	4	5	6	7
Value	yellow	green	blue	red	black	pink	white	purple

OUTPUT : yellow, green, blue, red, black, pink, white, purple

Answer:

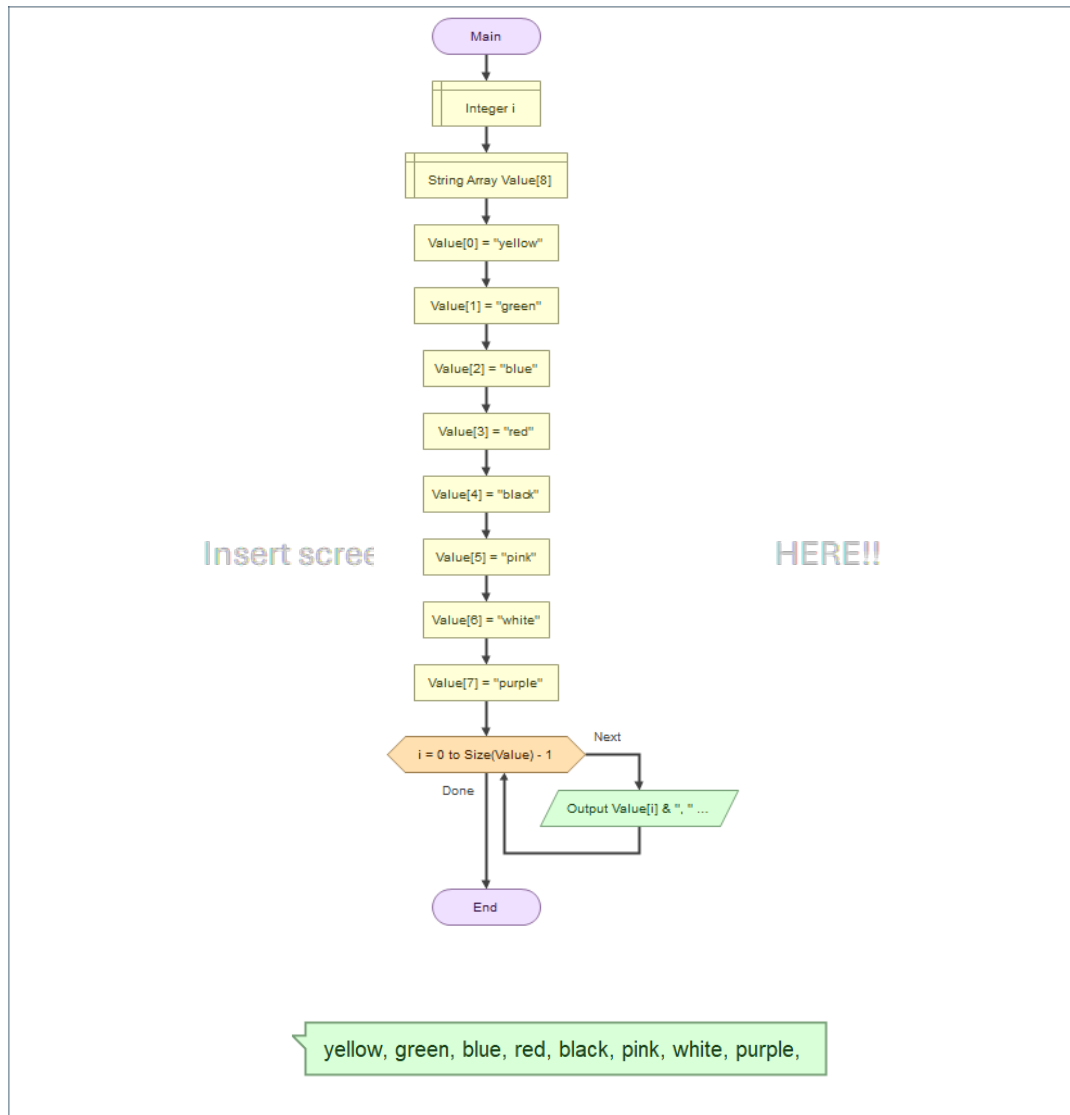


3. Create a flowchart on **Flowgorithm** to create an array with the following values. Then, display all values. (Repetition structure is **required**.)

Index	0	1	2	3	4	5	6	7
Value	yellow	green	blue	red	black	pink	white	purple

OUTPUT : yellow, green, blue, red, black, pink, white, purple

Answer:



4. Create a flowchart on **Flowgorithm** to create an array with the following values.

Index	0	1	2	3	4	5
Value	55.3	6	69	88.9	23.8	-9.2

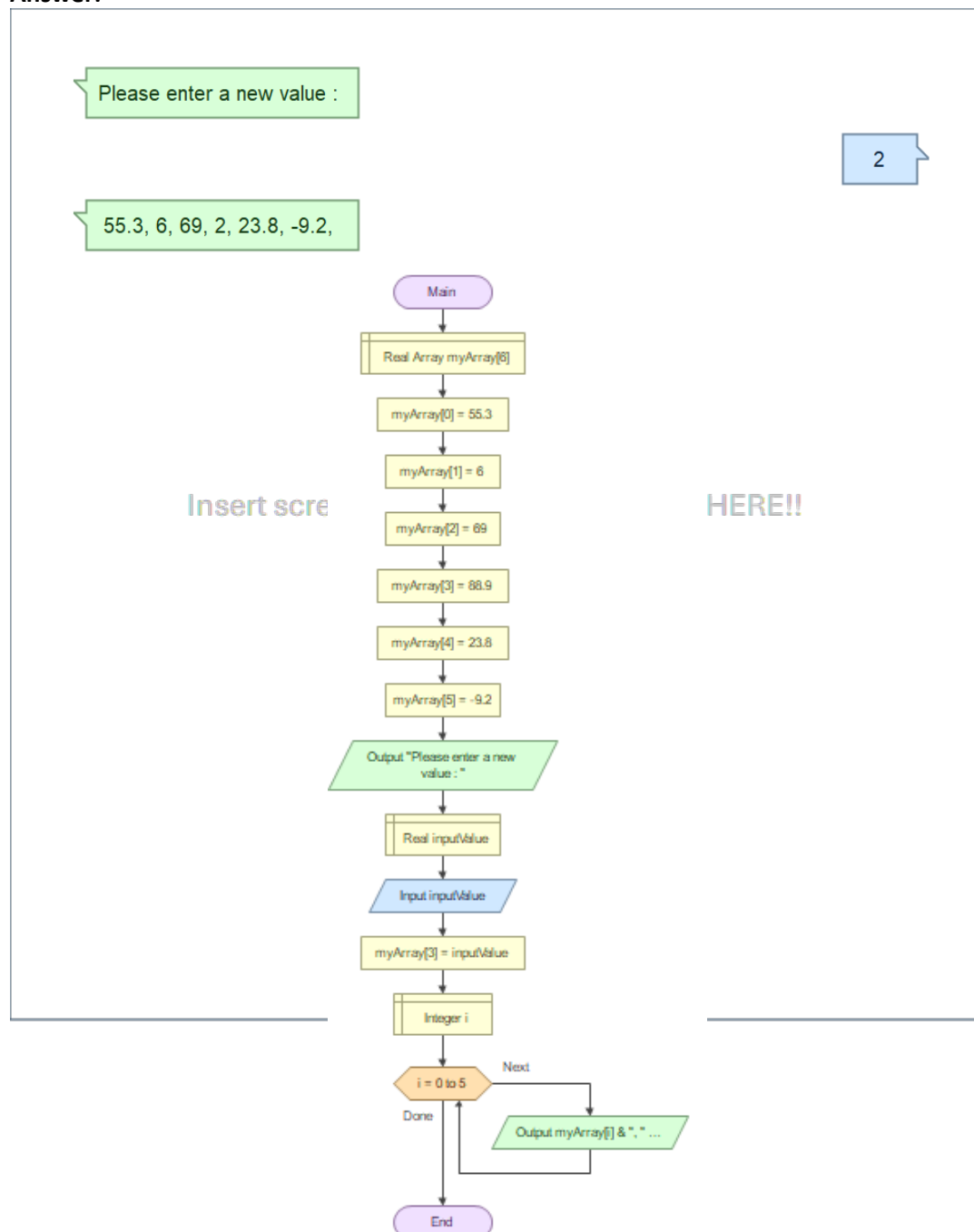
Then, get the input and replace the input value to the array index 3.
Display all values as the output. (Repetition structure is **required**.)

For example,

INPUT : 123

OUTPUT : 55.3 6 69 **123** 23.8 -9.2

Answer:



5. Create a flowchart on **Flowgorithm** to create an array with the following values. (**Repetition structure is required**)

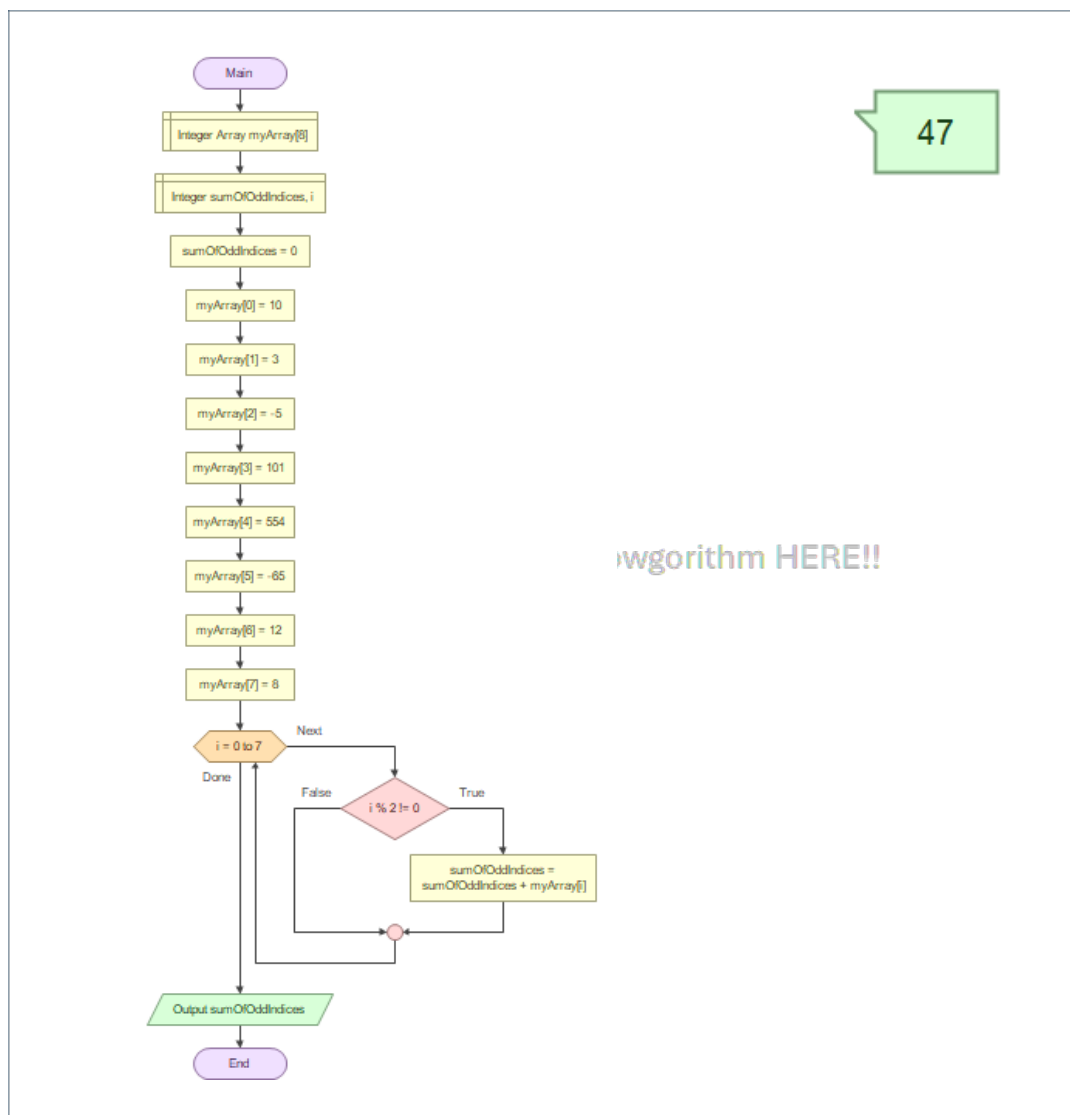
Index	0	1	2	3	4	5	6	7
Value	10	3	-5	101	554	-65	12	8

Then, calculate the summation of values with odd index in the array. (Repetition structure is required)

OUTPUT : 47

**** The output is from $3+101+(-65)+8 = 47$ ****

Answer:



6. Create a program on **Thunkable** to create an array with the following values.

Index	1	2	3	4	5	6
Value	55.3	6	69	88.9	23.8	-9.2

Display all values as the output. (Repetition structure is **required**.)

OUTPUT : 55.3 6 69 88.9 23.8 -9.2

Answer:

The image shows a Thunkable visual programming interface with the following components:

- A text display showing the output: `55.3,6,69,88.9,23.8,-9.2`.
- A blue button labeled "Button".
- Two initialization blocks:
 - `initialize app variable numSum to` (empty).
 - `initialize app variable numArray06 to` with a list of values: `55.3`, `6`, `69`, `88.9`, `23.8`, and `-9.2`.
- A "when Button8 Click" event block containing:
 - A "do" loop:
 - `count with` from `length of app variable numArray06` to `10` by `1`.
 - A nested "do" loop:
 - `set app variable numSum to` `+` `join` `app variable numArray06` `-` `" "`.
 - `set Label15's Text to` `app variable numSum`.

7. Create a **Thunkable** program to create an array with the following values.

Index	1	2	3	4	5	6	7	8
Value	10	3	-5	101	554	-65	12	8

Then, calculate the summation of all values in the array. **(Repetition structure is required)**

OUTPUT : 618

**** The output is from $10+3+(-5)+101+554+(-64)+12+8 = 618$ ****

Answer:

The screenshot shows a Thunkable program interface. At the top, the number "618" is displayed. Below it is a blue button labeled "Button". The logic is as follows:

- Initialize app variable totalSum to 0**
- Initialize app variable myArray to** a list containing the values: 10, 3, -5, 101, 554, -65, 12, 8.
- when Button6 Click**
 - do**
 - count with i from 1 to length of app variable myArray * 1 by 1**
 - do**
 - set app variable totalSum to** $\text{app variable totalSum} + \text{in list app variable myArray get \# i}$
 - set Label13's Text to app variable totalSum**

8. Create a **Thunkable** program to create an array with the following values.

Index	1	2	3	4	5	6	7	8
Value	10	3	-5	101	554	-65	12	8

Then, replace the values of the even index with its value multiply by 2.
Display all values in a label. (Repetition structure is required)

OUTPUT : 10 6 -5 202 554 -130 12 16

Answer:

10,6,-5,202,554,-130,12,16

Button

```

initialize app variable myArray8 to + list - 10
- 3
- -5
- 101
- 554
- -65
- 12
- 8

initialize app variable displayString to ""

initialize app variable temp8 to 0

when Button7 Click
do
  set app variable temp8 to 0
  set app variable displayString to ""
  count with i from 1 to length of app variable myArray8 x 1 by 1
  do
    + if remainder of i ÷ 2 = 0
    do +
      set app variable temp8 to in list app variable myArray8 get # i
      in list app variable myArray8 set # i as app variable temp8 x 2
  set Label14's Text to app variable myArray8
  
```