Prac 06 Design

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Problem Description

Initialisation:

• The size of the array is always 20 items.

• Each array item has a 50% chance of starting with either a zero or one value.

• The pointer is placed in a random location at the start of the game.

Movement:

• The player may move the pointer one step either left or right. The pointer may not move outside the array area.

• When the pointer moves, the value that the pointer points to changes its value. A value of one change to zero. A value of zero changes to one.

• The player may choose to quite the game at any time.

End game:

• The game ends in success if all the array elements have been changed to either ones or zeros. For this program, you must use user-defined libraries with functions defined and declared in the BattleSpace namespace. Activities and functions in the program should use a fixed size one dimensional array.

Input and Output

Case 1

Input	
(a) To move left	Standard input stream
Output	
Pointer moves Left or right	

Case 5

Input	
(d) To move right	Standard input stream

Output	
Pointer Moves Right	Standard output stream

Option 6

Input	
Null	
Output	
Exit Application	

Data Format

Identifier	Data type	Description
chInput	Char	Select a or d
arrNum	Integer	Array of ones and zeros
Void Movement		Handles the pointer movements
Void Output		Displays the user interface
Void InitGame		Initializes the Game
GetRand	Integer	Creates a random value in each position in the arrNum between 1 and 0

Pseudo Code (for initializer)

For each position in arrNums

Int intSlot → GetRandom()

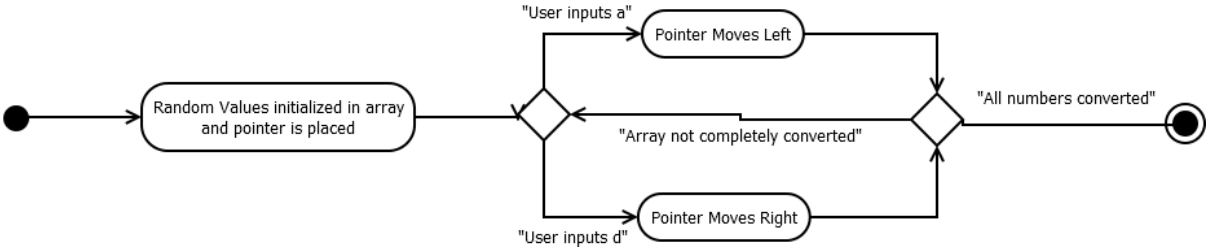
arrNum[intSlot] → 0

Int intSlot → GetRandom()

arrNum[intSlot] → 1

Pointer → arrNum[0]

UML


"User inputs a"
Pointer Moves Left
Random Values initialized in array and pointer is placed
"All numbers converted"
"Array not completely converted"
Pointer Moves Right
"User inputs d"