Data 10.17.17 Name Goteciuc Horatiu Gabriel

# Problem statement:

# The program should allow the user to introduce a list of numbers. The user should be able to see the current list and check the longest sequence of the list that satisfies a given property.

# Feature list

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| **Feature** |
| 1. Read a list of integers. |
| 2. Show the current list. |
| 3. Print the longest sequence of the list that satisfies a given property. |
| 4. Exit the application. |

## Running scenario 1

|  |  |  |  |
| --- | --- | --- | --- |
|  | **User** | **Program** | **Description** |
| a |  | Menu | Shows the munu |
| b | 1 |  |  |
| c |  | Give a list of integers | Wait for user to introduce a list of integers |
| d | 2 3 4 1 2 4 2 |  |  |
| e |  | Menu | Reads the list and shows menu again |
| f | 2 |  |  |
| g |  | [2, 3, 4, 1, 2, 4, 2] | Shows the list |
| h | 3 |  |  |
| i |  | [2, 3, 4, 1, 2] | Prints the longest sequence of consecutive numbers that have the gcd 1 and prints menu |
| j | 4 |  |  |
| k |  |  | Exit the application |

## Tasks

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| --- | --- |
| **Id** | **Description** |
| T1 | Implement UI |
| T2 | Implement a function that gets the longest sequence that respects a given prperty |
| T3 | Implement gcd function |
| T4 | Implement a function that checks if 2 numbers have at least 2 common digits |

1. **Test case table for function checkProperty(List, prop)**

The prop parameter is the given property. In this case, the property is that the gcd of consecutive numbers is 1:

|  |  |
| --- | --- |
| **Data: the list of numbers** | **Result: Longest sequence** |
| 2 4 6 1 3 2 5 8 6 12 3 9 8 5 4 3 2 1 3 4 5 6 7 3 9 18 20 | [9, 8, 5, 4, 3, 2, 1, 3, 4, 5, 6, 7, 3] |
| 2 4 5 1 3 2 3 6 | [4, 5, 1, 3, 2, 3] |
| 1 2 1 2 1 2 | [1, 2, 1, 2, 1, 2] |

In this case the property is that consecutive numbers have at least 2 common digits:

|  |  |
| --- | --- |
| **Data: the list of numbers** | **Result: Longest sequence** |
| 3 4 5 23 322 1323 4 21 12 421 152 2981 2211 210 | [21, 12, 421, 152, 2981, 2211, 210] |
| 32 423 302 44 1 | [32, 423, 302] |
| 20 4 41 14 20411114 414149229 | [41, 14, 20411114, 414149229] |