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# Problem statement:

# In the given list of integer numbers, this function checks which elements are in [0, 10] interval and prints out the longest sequence with this property.

# Feature list

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| **Feature** |
| F1. **Checks if an element is in [0, 10]** |
| F2. **Finds the length and the index from where the longest sequence starts.** |
| F3. **Prints out the longest sequence with this property.** |

## Running scenario 1

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|  | **User** | **Program** | **Description** |
| a | n = 8; 40 | i = 0, l = 0, s = 0, m = 0 | The first element is not in [0, 10].  Length = 0 |
| b | 7 | i = 0, l = 0, s = 0, m = 0 | The 2nd element is in [0, 10].  Length = 1 > maxim = 0 => maxim = 1  Start = i – length + 1 = 1 |
| c | 9 | i = 0, l = 0, s = 0, m = 0 | The 3rd element is in [0, 10].  Length = 2 > maxim = 1 => maxim = 2  Start = i – length + 1 = 1 |
| d | 6 | i = 0, l = 0, s = 0, m = 0 | The 4th element is in [0, 10].  Length = 3 > maxim = 2 => maxim = 3  Start = i – length + 1 = 1 |
| e | 29 | i = 0, l = 0, s = 0, m = 0 | The 5th element is not in [0, 10].  Length = 0.  \*When an element does not have the given property, the maxim and start keep their values. |
| f | 6 | i = 0, l = 0, s = 0, m = 0 | The 6th element is in [0, 10].  Length = 1 < maxim = 3.  \*When length < maxim, maxim and start keep their values. |
| g | 5 | i = 0, l = 0, s = 0, m = 0 | The 7th element is in [0, 10].  Length = 2 < maxim.  \*When length < maxim, maxim and start keep their values. |
| h | 89 | i = 0, l = 0, s = 0, m = 0 | The 8th element is not in [0, 10].  Length = 0.  \*When an element does not have the given property, the maxim and start keep their values. |
| i |  | 7, 9, 6 | The function prints out the longest sequence whose elements are all included in [0, 10]. |

## Tasks

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| **Id** | **Description** |
| T1 | Checks every element if it is included or not in [0, 10] |
| T2 | Calculates the length of the sequences and then finds the maxim length. |
| T3 | Determines the index from where the sequence starts. |
| T4 | Prints out the sequence with that property. |

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| **Data: n; list\_n** | **Result: list\_n[i + start]** |
| 10; 3, 4, 6, 8, 23, 32, 5, 8, 2, 45 | 3, 4, 6, 8 |
| 6; 89, 4, 32, 4, 5, 8 | 4, 5, 8 |
| 12; 45, 67, 2, 4, 6, 7, 2, 67, 23, 44, 3, 5, 32 | 2, 4, 6, 7, 2 |
| 8; 45, 23, 5, 6, 3, 22, 8, 5, 43 | 5, 6, 3 |
| 20; 45, 2, 6, 4, 7, 23, 45, 7, 9, 2, 4, 6, 2, 44, 67, 43, 4, 6, 8, 78 | 7, 9, 2, 4, 6, 2 |
| 5; 89, 32, 56, 42, 54 | None. Shows the menu again. |
| -2; 45, 67 | Restarts the program |
| 4; -2, 4, 6, 3 | 4, 6, 3 |

1. **Test case table for function in\_range(list\_n)**