**Functional Design**

**Functions required**

1. Read input (a series of number) from keyboard, maximum 10 numbers
2. Determine the sum of all inputs
3. Determine the minimum difference between 2 sub-groups of this series
4. Determine the number at which the above minimum difference is reached

**1. Read input (a series of number) from keyboard, maximum 10 numbers**

- User inputs numbers by using keyboard

- User may input from 1 number and up to 10 numbers

**2. Determine the sum of all inputs**

- All inputs will be summed up by using a function

**3. Determine the minimum difference between 2 sub-groups of this series**

- This series of number will be divided by 2 sub-groups. The difference between the sums of the 2 sub-groups will be calculated. We aim to determine the minimum of this difference. For example:

. Input: 1, 3, 5, 4, 6, 7, 9, 12

. Sum: 47

. Sub-group 1: 1, 3, 5, 4, 6, 7 (sum = 26)

. Sub-group 2: 9, 12 (sum = 21)

. Min-difference = 26 – 21 = 5

**4. Determine the number at which the above minimum difference is reached**

- We want to determine the position at which the minimum difference is reached.

In the above example, that is number 7, corresponding to the location 6 in the series. In C language, this number corresponds to the index of 5 of the original series.