

## Exercise: Input loop

Look at the following application that uses a for-loop to read 5 integers from keyboard. After the loop the sum of the 5 integers are printed to the console

```
import java.util.Scanner;
public class PrintSum
{
    public static void main(String[] args)
    {
        Scanner input = new Scanner(System.in);
        int count = 5;
        int sum = 0;
        for (int i=0; i<count; i++)
        {
            System.out.print("Type an integer: ");
            int value = input.nextInt();
            sum += value;
        }
        System.out.println("The sum is " + sum);
    }
}
```

Use the class above as a template to write an application (a class with a `main` method) that reads a number of integers from keyboard, (representing seconds), prints the sum, the average and creates a time (a `Clock` object) represented with the sum (the total seconds).

Example run (bold is input):

```
How many inputs: 4
Enter number of seconds (#1): 15
Enter number of seconds (#2): 10
Enter number of seconds (#3): 30
Enter number of seconds (#4): 1000
The total number of seconds: 1055
The average seconds: 263.75
The clock is 00:17:35
```

**Note1:** First, read from keyboard how many times you will enter a value (number of loop cycles).

**Note2:** The average could be a decimal number. Therefore, make sure you do not make an integer division.

**Note3:** Copy the class `Clock` to the module such that you can create a `Clock` object when you are done finding the sum (total seconds).

## Exercise: Input loop with a sentinel

Modify the previous exercise such that do not know the number of inputs but you read values until you enter the sentinel -1 (indicating end of input)

Example run (bold is input):

```
Enter number of seconds or -1 to end (#1): 15
Enter number of seconds or -1 to end (#2): 10
Enter number of seconds or -1 to end (#3): 30
Enter number of seconds or -1 to end (#4): 1000
Enter number of seconds or -1 to end (#5): -1
The total number of seconds: 1055
The average seconds: 263.75
The clock is 00:17:35
```

## Exercise: Validation loop

Modify the previous exercise, such that you validate the input and only allow non-negative values (or -1 to end the input loop). For every value you get from keyboard, keep on asking for it if it not legal.

*Note that you need a nested loop, i.e. a loop for the values and a loop (inside the loop) for the validation.*

Example run (bold is input):

```
Enter number of seconds or -1 to end (#1): 15
Enter number of seconds or -1 to end (#2): 10
Enter number of seconds or -1 to end (#3): -999
Please enter a non-negative number or -1 to end
Enter number of seconds or -1 to end (#3): -555
Please enter a non-negative number or -1 to end
Enter number of seconds or -1 to end (#3): -888
Please enter a non-negative number or -1 to end
Enter number of seconds or -1 to end (#3): -777
Please enter a non-negative number or -1 to end
Enter number of seconds or -1 to end (#3): 30
Enter number of seconds or -1 to end (#4): 1000
Enter number of seconds or -1 to end (#5): -1
The total number of seconds: 1055
The average seconds: 263.75
The clock is 00:17:35
```