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Exercises for the Class

Elements of Computer Science: Programming

Classroom Exercise 01

Submission of solutions until 6:00 p.m.
at `moodle.uni-trier.de`

- Submission that can't be compiled are rated with **0** points!
- Please comment your solutions, otherwise you can lose points!

Exercise 1 (Evaluation: Numbers) (10 Points)

Use the scanner to scan two **`int`** numbers into the variables (`a` and `b`). Afterwards output:

- the minimum of both values
- the maximum of both values

```
Input: 10 20
Minimum: 10
Maximum: 20
```

Exercise 2 (Evaluation: Text) (10 Points)

Read in two numbers a and b via the scanner by using an input prompt of the form `Input:`.

There are 3 possibilities: $a < b$, $a = b$ oder $a > b$. Then generate one of the following outputs accordingly:

"`a is less than b`", "`a is equal to b`", or. "`a is greater than b`".

```
Input: 3 8
a is less than b
```

Attention: This task evaluates the **complete output text**, i.e. your solution should be in the same format than the example above.

Exercise 3 (Evaluation: Numbers) (10 Points)

The given program takes as input (via `Scanner`) a single **`int`** number `a` (with `a` ≥ 1) and outputs all values between 0 and `a` (inclusive `a`). Change the program, so that it computes the sum between 0 and `a` (inclusive `a`) as shown in the example below.

```
Input: 5
Output: 15
```

Exercise 4 (Evaluation: Numbers) (10 Points)

Read in two numbers a and b via the scanner and determine the sum $a+(a+1)+(a+2)+...+b$ of all numbers that lie between these two numbers (both inclusive).

You may assume that $a \leq b$. (The case of $a = b$ is therefore possible!)

For the input `4 6` you need to calculate the sum $4 + 5 + 6 = 15$, analogous to input `1 10` you need to calculate $1 + 2 + 3 + ... + 10 = 55$.

```
Input: 4 6
Output: 15
```

Exercise 5 (Evaluation: Numbers) (10 Points)

Read in two numbers a and b via the scanner and determine all numbers that lie between these two numbers (both exclusive).

For the output you will have to reverse the order of the numbers, i.e. you have to create the following sequence of numbers as output: $b-1$ $b-2$ ... $a+1$.

You may assume that $a < b$.

For the input of `3 8` you will have to create the output `7 6 5 4` as showed in the example below:

```
Input: 3 8
Output: 7 6 5 4
```