November 1, 2020

Task 3

Define in your program four numbers of type **int** — `a1`, `a2`, `b1`, `b2` — which we interpret as coordinates on the number axis of end points of two intervals: $A = [a_1, a_2]$ and $B = [b_1, b_2]$. The program reads from the user one number (say, `x`) of type **int** and prints whether it is true that

- $x \in A$
- $x \in B$
- $x \in A \setminus B$
- $x \in B \setminus A$
- $x \in A \cap B$
- $x \in A \cup B$
- $x \in A \ominus B$

where $\setminus$ denotes the set difference and $\ominus$ the symmetric difference.

For example, if the defined intervals are $A = [2, 4]$ and $B = [1, 6]$ and the number read is $x = 5$, the program should print something like:

```
Interval A = [2, 4]
Interval B = [1, 6]
Enter x 5
x in A:                          false
x in B:                          true
x in A\B:                        false
x in B\A:                        true
x in intersection of A and B: false
x in union of A and B:           true
x in symm. diff. of A and B:  true
```

Do not use **if** statements.

Deadline: Nov 14 (inclusive)

Put yout Java file(s), and only Java files, in a directory the name of which is your surname (without Polish or any other non-ASCII characters). Names of Java files are arbitrary, although of course they should correspond to names of classes you created. Zip the whole directory ("from above" — not just the files inside it). Then drop the zip file created in this way into folder "Tasks / Task_XX" of the GAKKO system (where 'XX' is the task number).