Exercise 7

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- Source code

Task

1. Write a program which calculate the value of the following expression
   `( a + b ) − ( c − d )`
2. Execute program using go and single step commands
3. Compare source code with the code generated by the simulator, what differences you determine.

Program description

Program reads from standard input for numbers `A`, `B`, `C` and `D`.
In the next step calculates the value of expression given in the task
using equivalent expression `a + b − c + d` which can be easier implemented
using assembly language.

In order to minimize code duplicates procedure `read` was created. This
procedure prints string given in `$a0` then reads an integer from standard
input.

Differences between source code and code generated by the simulator

- Only comments by a source code are visible
- `la` instruction is divided into two instructions: `lui` and `ori`
- Labels from `.data` segment are replaced by integer address.

Conclusions

- MIPS assembly compiler uses macro which make operations like `la` easier
  to implement.
- We should use procedures or functions always when there is possibility

to avoid duplication of the source code.