Computer Systems and -architecture

MIPS

1 Ba INF 2011-2012

Ruben Van den Bossche
ruben.vandenbossche@ua.ac.be

Sam Verboven
sam.verboven@ua.ac.be

Time Schedule

Exercises are made individually. Put all your files in a tgz archive, as explained on the course's website, and submit your solution to the exercises on Blackboard.

- Deadline: **November 28, 23u55**

Exercises

Write a MIPS program for the MARS simulator for each of the following exercises. As always, document your solution well (use #).

1. Read an integer `n` (use `syscall`), and print
   `This is my n-th MIPS-program.`
   on the screen.

2. Convert the C++ code below to a MIPS program.

   ```cpp
   int i = 0;
   while (i <= 10)
   {
       i++;
       cout << i << endl;
   }
   ```

3. Write a program that reads an integer `n` and prints a piramid of `n` rows, with on each row a sequence of integers starting with 1. With `n = 5` the output should be:

   ```
           1
         1 2 3
       1 2 3 4 5
     1 2 3 4 5 6 7
   1 2 3 4 5 6 7 8 9
   ```

4. Write a program that reads an integer `n` and prints the Fibonacci numbers from F_0 to F_n. The Fibonacci numbers are defined as follows:
   $F_0 = 0$
   $F_1 = 1$
   $F_i = F_{i-2} + F_{i-1}$ voor $i > 1$