Computer Systems and -architecture

MIPS

1 Ba INF 2014-2015

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 27, 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.

   ```
   int i = 10;
   while (i >= 0)
   {
       i--;
       cout << i << endl;
   }
   ```

3. Write a program that reads an integer **n** and prints a pyramid of **n** rows, with on each row a sequence of integers starting with 1. With **n = 4** the output should be:

   ```
   1
   1 2
   1 2 3
   1 2 3 4
   ```

4. Convert the C++ code below to a MIPS program. (Use a jump table with the `jr $t1` instruction and use the `la $t1, label` instruction to explicitly model the branch table)

```
int i = 1;
int a = 0;
switch (i) {
   case 0:
         a = 9'
         break;
   case 1:
   case 2:
         a = 8;
         break;
   default:
         a = 7;
         break;
}
```