Computer Systems and -architecture

MIPS

1 Ba INF 2013-2014

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 25, 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. Write a program that reads an integer n and prints all Factorials up to that number ($n!$). The output for $n = 6$ would be:

   `1 2 6 24 120 720`

   The factorial is recursively defined as follows:

$$n! = \begin{cases} 1 & \text{if } n = 0 \\ (n-1)! \times n & \text{if } n > 0 \end{cases}$$