

02140 Languages and Parsing

Programming Exercise 2

The purpose of these exercises is to make you acquainted with recursion, basic types and the use of libraries. In connection with lists (in the next programming lecture) we start with programming exercises related to languages and finite automata.

Use of Libraries

In some exercises below you should use program libraries like `Math` and `String`. See Appendix D in the textbook (HR).

To use names declared in a program library, e.g. `Math.pi`, you should *load* the library first. This is done as follows:

```
- load "Math";
> val it = () : unit

- Math.pi;
> val it = 3.14159265359 : real
```

By *opening* the library `Math`, you can use `pi` and all other names declared directly:

```
- open Math;
> type real = real
  val cos = fn : real -> real
  .....
  val pi = 3.14159265359 : real
  .....
  val e = 2.71828182846 : real
  val sqrt = fn : real -> real

- pi;
> val it = 3.14159265359 : real
```

Exercises:

2.2, 2.3, 2.6, 2.7, 2.8, 2.9, 3.2, 3.3 in HR.