

# *Programming Languages* Course Note

## — Running Scheme at Your PC

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- For general information about Scheme, check out <http://schemers.org/>
- You shall take a good look at the *Revised<sup>5</sup> Report on the Algorithmic Language Scheme*, available at <http://schemers.org/Documents/Standards/R5RS/>
- For implementation, PLT Scheme is recommended. Download it at <http://download.plt-scheme.org/>
- After you have installed PLT Scheme, start the program **DrScheme**. It is an integrated development environment (IDE) for writing Scheme applications!
- Do the following two things first:
  1. From menu **Help**, select **Interact with DrScheme with English**.
  2. From menu **Language**, choose language **R5RS**.
- Now, you can try on Scheme. Type the following text after the prompt `>` in the lower window:

```
(define (fac n) (cond ((<= n 0) 1)
                    (#t (* n (fac (- n 1))))))
```

- After see the prompt `>` again, type `(fac 10)`. You shall get `3628800` in return, and the prompt `>` again.
- The above shows how to run Scheme interactively. You can also execute scheme programs that are already defined in a file. As an example, edit a file called `power.scm` that contains the following text:

```
(define (power n) (cond ((<= n 0) 1)
                       (#t (* 2 (power (- n 1))))))
```

- From menu **File**, open file `power.scm`. You have just loaded the functions defined in file `power.scm` into the Scheme IDE. The definitions shall appear in another window. Click the **Run** button at upper right corner.
- Type `(power 10)` after the prompt in the lower window.
- You shall get `1024` in return, and another prompt.
- Hey, now you are on your own ...