Programming Languages: Functional Programming Syllabus

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Course Info.

- Course No.: IM 2012.

- Time: Thursday, 9:10 am — 12:10 noon.

- Location: Room 204, Management II.

- Credits: 3.

- Course Homepage: `https://scmu.github.io/plfp/`

- Lecturer: 穆信成 Shin-Cheng Mu (`scm@iis.sinica.edu.tw`).

- Teaching Assistant: 顏价廷.

Topics

Things I wish to cover in this term:

- Functions, values, and types.

- Simple datatypes and functions on lists.

- "Wholemeal" programming.

- Definition and proof by induction.

- Simple program derivation.

- Folds.

- Types and Logic.

- First Order Logic and Dependent Type.

- Monads and Effects.

Lecture Style and Grading

- Partly lecture, partly practicals.

- Please bring your laptop, and be sure that it is fully charged before each class.

- No roll-calls.

- Try finishing your practical sheets for your own benefits. Practical sheets and homework (if any) are not graded. However, if you submit the practicals to me (by email), I will check them and comment on them.

- Grading: $(mid \ `max\ ` \ final) * 0.6 + (mid \ `min\ ` \ final) * 0.4$. (The ratio often ended up being relaxed to 0.7 and 0.3 in previous years.)

Tools

We will start with installing GHC. See the instruction on the course homepage. More tools needed will be announced on the course homepage too.