

Tutorial

A “Crash Course” in Software Development

**Prof. David Lorge Parnas, Ph.D., P.Eng.(Ontario);
Dr.h.c.: ETH Zürich, Louvain, Lugano ,TU Wien
Fellow: RSC, ACM, CAE, GI, IEEE; MRIA; ¹**

This tutorial introduces some capabilities that are useful for software developers.

1. Document driven distributed development.

Future software will be developed by teams that are located in many countries and speak many different languages. Such projects are often hampered by communication difficulties associated with natural language communication. This tutorial introduces an alternative approach.

2. Communicating precisely between developers and stakeholders

A document that provides a precise description of the externally visible behaviour of a proposed product can be used to communicate between developers and the future users (or their representatives). Such communication is essential if the development team is to build what the users need. This tutorial will show what such a document looks like.

3. Communicating precisely among developers

Modern software is built by teams. Each team member must know what behaviour is required of the module that he/she develops as well as what behaviour can be expected of modules written by other team members. This communication requires precise interface documentation. The tutorial will show what such documents look like.

4. Software quality assurance

As our world becomes increasingly dependant on software, trustworthiness and availability become increasingly important. The tutorial will illustrate how precise documentation can be used to enhance the effectiveness of software testing and inspection.

Schedule

TIME PERIOD	TOPIC	SPEAKER
13:00 - 13:40	Document Driven Distributed Development	Parnas
13:40 - 14:00	Exercise: Program Description	participants
14:00 - 14:20	Discussion: exercise answers	Shokry
14:20 - 15:00	Communicating Requirements and Behaviour	Parnas
16:00 - 16:40	Communicating Module Interfaces	Parnas
16:40 - 17:00	Exercise: Reading Module Interface Documents	participants
17:00 - 17:20	Discussion: exercise answers	Shokry
17:20 - 18:00	Software Quality Assurance	Parnas

¹ Dr. Hesham Shokry will assist in presenting the exercises and discussions.