**University of Mila**
**Institute of Mathematics and Computer Science- Semester 5**



# Software engineering
# Tutorial Series N°01

## Exercise 1:

The user of software x reports the following problems:

- ✓ The software does not provide all the expected features.
- ✓ The user finds learning how to use the software difficult.
- ✓ The results given by the software are sometimes wrong.
- ✓ The software consumes a lot of CPU for queries that seem simple.

Question: What are the missing qualities in this software?

## Exercise 2:

Considering the life cycle of software

1- Indicate the phase(s) in which each of the following documents is produced: User Manual, Architectural Design, Quality Assurance Plan, Module Specification, Source Code, Specifications, Test Plan, Preliminary User Manual, Detailed Design, Cost Estimate, Project Schedule, Test Report, Documentation.

2- How can the waterfall or V-shaped model be combined with the spiral model? by a small diagram show how it can be used, illustrating the sequence of the different stages.

## Exercise 3:

A software engineering company wants to make small software for Internet games, this request is unusual for this company. The development of this project does not involve any technical risks. A precise specification is given by the customer.

- What do you propose as a development life cycle? Argue your proposal; show the advantages and disadvantages of your proposal compared to other possible ones.

## Exercise 4:

A software production company adopts a software development process that consists of linking the different phases of development: feasibility study, specification, design, implementation, testing and delivery. Rollbacks between these different phases are not planned, but if errors are detected during testing, it is possible that the development team will readjust the design and/or implementation of the software. The success of this company's software development projects is guaranteed only if it is a question of replicating a project that has already been completed.

- Determine the lifecycle model used by this company.

## Exercise 5:

A university wants to equip itself with a student management system that would take into account all the details about students, including personal information, courses taken, and exam scores.

The three possible approaches are:

1- Purchase a database management system and develop your own system based on this tool
2- Purchase a system comparable to that of another university and modify it for your own needs
3- Join a group of other universities, establish a common set of specifications, contact a software company that will develop a single system for all

- Identify the possible risks for each of these strategies and decide which approach to take.