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THE UNIVERSITY OF YAOUNDE 1
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FACUTY OF SCIENCE
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COMPUTER SCIENCE DEPARTMENT
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LEVEL 4

INFO 4178 : Software Engineering I (Genie Logiciel I) TP

Instructor: Dr Kimbi Xaveria

TP EXERCISE

- Divide class into 2 groups for two topics:
  - **Fire disaster management system** (system should be based on a ***Service Oriented Architecture (SOA)*** & produce an android application with Android Studio)
  - **Library management system** (system should be based on *a* ***layered hierarchical approach (layered architecture)*** & produce desktop application with JDK/Netbeans).

- The methodology to use is **Scrum**, we will have to define for each system the product owner, the users, the scrum master, and the development team.

NB: *Sprint 0*

- Identify and clearly understand the problem or system we are about to design.
- Form the scrum team, see if this project is feasible, technically and financially
- Adopt an install all the tools and software needed to successfully carry out the project.
- we have to get user stories from fire fighters (sapier pompier) and library manager respectively (in a haphazard manner). For each user story come with acceptance criteria.
- we prioritize the user stories and come up with product backlog. In each meeting we preview the product backlog, with new functionalities.
- During project execution we arrange each user story typically into 4 statutes: "**To do**", "**In progress**", "**To validate**" (by the product owner), "**Done**".

Fire Disaster management system

- For example, *Locator Identifier* each house has an index (simulate by giving numbers to these houses) identification of residence, vehicles, emergency road.
- Components should include **disaster locator**, **disaster reporter**, **disaster responder** etc.

Hint: For fire disaster management, use a Beacon (tracking device) to incorporate in the project maybe plus GPS for location.

Library management system.

- we can have 3 categories of items: Books, CDs, Research materials
- Procedure needs to be registered all users of the library, new books, new CDs, new Research material
- Users can borrow (not more than 4 items, material returns before 2 weeks, else they will pay a penalty).

Structure of Project report

1. Research Problem
2. General objective
    a. Specific objectives
3. Methodology
    a. Methodology you use to solve your problem
    b. Presentation of scrum team
    c. Description of how you applied scrum to your specific project
4. System requirements
    a. Functional requirements
    b. Non-functional requirements
5. Architecture of your system
    a. Architectural Diagram
    b. Description of Architecture
    c. Architectural Drivers
6. Model of your system
    a. Model UML
        i. Use case diagram
        ii. Class diagram
        iii. Activity diagram
        iv. Sequence diagram
    b. Mathematical Model
7. Analytical Hierarchical process (AHP) algorithm applied to your project.

- **Duration of Work:** 3 weeks
- Weekly TD meetings with Teaching assistant (Tekoh Palma) to review progress of group work
- At the end of the exercise each group is expected to produce an **application** and a printed **report**
- Grading will be done based on the evaluation of the functionalities of the application produced and the printed report