SE 339 - SOFTWARE ARCHITECTURE

COURSE OVERVIEW AND SYLLABUS

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Iowa State University

Fall 2017

ABOUT ME….

- B.INF. U. Sfax, 1995
- M.Sc. U. Sherb., 2000
- Ph.D. WMU, 2010

- 3 years in Fraunhofer SIT

- 20 years of experience
  - Tunisia
  - USA
  - Canada
  - The Netherlands
  - Germany

http://geology.com/world/world-map.gif

EXPECTED OUTCOMES

- Understand what a software architecture is and explain why it is important
- Understand the relationship between software qualities attributes and software architectures
- Ability to elicit software architecture drivers

EXPECTED OUTCOMES

- Ability to use architecture styles, patterns, and tactics
- Ability to use the attribute-driven method to design software architecture
- Ability to document software architecture
- Ability to evaluate software architecture

SOFTWARE ENGINEERING ABET OUTCOMES

- Ability to identify, formulate, and solve engineering problems (E)
- Ability to use the techniques, skills, and modern engineering tools necessary for engineering practice (K)

BOOKS

- Book 1 - Designing Software Architectures: A Practical Approach
  By Rick Kazman, Humberto Cervantes
- Book 2 - Essential Software Architecture
  By Ian Gorton
- Book 3 - UML Distilled: A Brief Guide to the Standard Object Modeling Language
  By Martin Fowler
- Book 4 - Microservices - Flexible Software Architectures
  By Eberhard Wolff
- Book 5 - Evaluating Soft. Arch.: Methods and Case Studies
  by Paul Clements, Rick Kazman, and Mark Klein

SCHEDULE

- The schedule is tentative
- An updated schedule will be maintained in blackboard

Show the schedule

- No classes on the week of 8/27 to 9/2. We will have a replacement lectures.

GRADING

- 50% for Assignments (5)
- 12% for In-class reading quizzes
- 3% participation
- 10% for the Project
- 10% for Mid-term exam
- 15% for Final exam

- Will use the standard grade levels—do not expect curve
- There will be limited bonus points – get them

QUALITATIVE QUESTION EVALUATION

We use qualitative evaluation for assignments and projects. We give excellent, good, satisfactory and not satisfactory--which as matched to scores. Answers with justifications receive excellent, answers without justification receive satisfactory, if meaningful.

For example,

The answers “start early” or “use good tools” to the question “What are the lesson that you learned” are unsatisfactory—this generic. However, the answer “we need to consider learning curve when we estimate the tasks. We spend more time in the first iterations because we had to ….” is excellent—gets full mark.

TEAM COMPOSITION

1. Compose teams of 6 to 7 members for group work
2. The project will be about smart homes
3. Each team will work on the project and will present it in class
4. We will select 2 or 3 variations of the architecture for implementation

CONTACTS

- Instructor: Lotfi ben Othmane <othmanel@iastate.edu>
- Teaching assistant
  - Yesdaulet Izenov (Yesta) < yizenov1@iastate.edu>
  - Srilalithadaksh Dhulipala (Lalitha) <lalitha@iastate.edu>

- When emailing us, please begin Subject: with "[SE339]"

QUESTIONS

- What are your professional interests?
- What do you wish to get from the class?
- any questions may you have.

Questions

What is a software architecture?