Design & Analysis of Software Systems (DASS)

Introduction Class

DASS: **Course Objectives**

- Understand the process of building software, through a live project

- Inculcate software engineering knowledge and skills, and use essential technologies to build a reasonably complex piece of usable and maintainable software.

- Emphasis on structured approach and disciplined process (iterative) to develop software

- Enhance written and oral communication skills

What can we expect?

- Creating user-friendly software
- } Frontend: GUI / Web
- } Backend: Databases + Network
- By the end of this course you
- } should be able to create reasonably large, maintainable software using software engineering principles, processes and more…
- } Should be able to communicate with each other and others
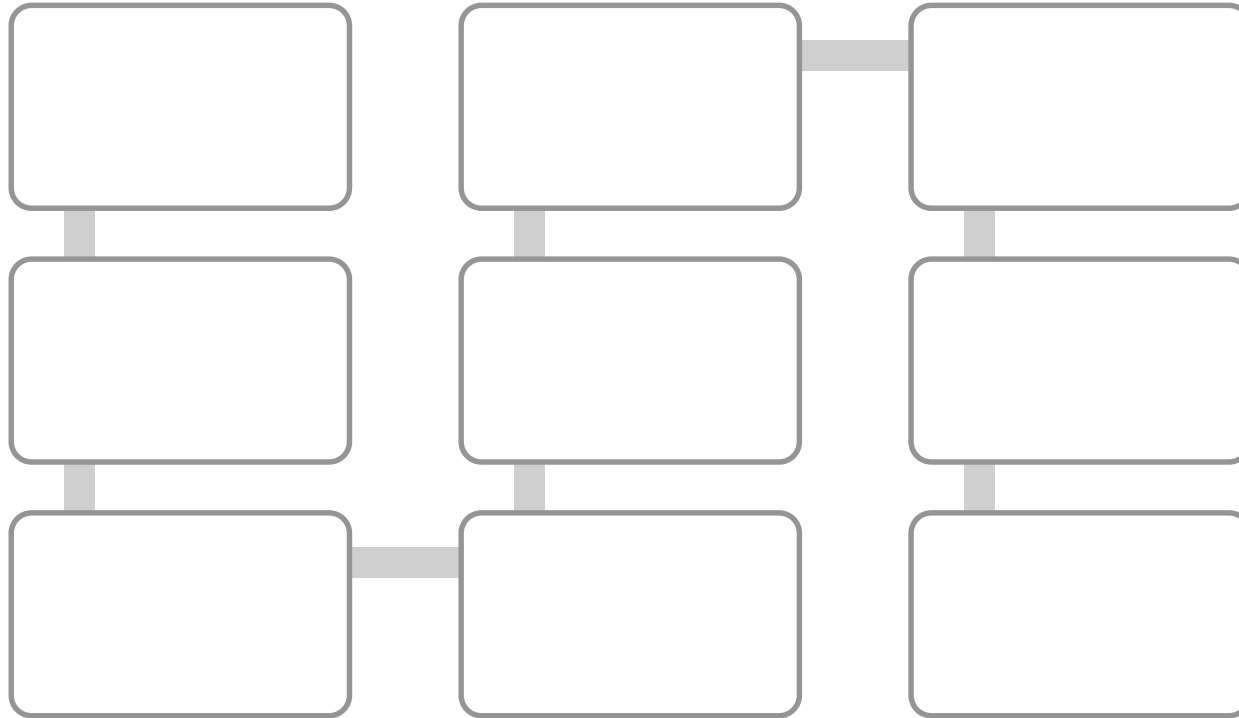- } Should be able to document

Course Project: Real Client. Real Need

- The focal point of the course is a 3.5 month long project executed by a team of 3-5 students.

  - The goal of the project is to introduce and practice the fundamental software development life-cycle activities of planning, tracking, designing, implementing and delivering an actual software product.

  - Teams will be formed by Week 2 and will remain together throughout the semester. The instructor and TAs will choose the teams. An effort will be made to accommodate one team member of your preference.

- For most of the students this might be the first time you are developing a team project.

  - Working in teams will be challenging in various ways due to the short amount of time teams are able to meet in person. Teams have to decide on their meeting schedules and stick to it till the end of the semester.

  - At times, the instructor may allocate some time during the class session for project teams to meet/work and clarify questions (if any). Hence, it is critical that you are present for all the classes as well as meetings.

Assignments/Class Activities

- Impromptu in-class activities and take home assignments will be given throughout the semester to reinforce the material (not) taught in class.

- Some of these assignments/activities might be individual and some others might be team based.

- Please note there will be no makeup activities.

Course flow (sprints)

Lecture topics will follow this flow

As the projects tracks these sprints

Submissions due along the way

Guest lectures from startups and Industry leaders

Course Timeline

Sprint	Week of..	Week Topics	Lectures	Project Activity	Project Documents	Assignment
PREP/ Sprint 0	3rd Jan	Introduction	W1-Course-Intro W1-SE-Intro-SDLC	Teams and projects allocated		Assignment 1 released
	10th Jan		Projects Discussion	First meet with client	Cocncept v1	
Sprint 1	13th Jan	Scoping	W2b-Requirements-Analysis	Plan/Design Sprint + Dev Sprint	Project Concept v2, SRS v1	
	20th Jan		W2-Process-Models			Assignment 1 deadline
Sprint 2	27th Jan	Requirements	W3-W4-Requirements-Specifications	Dev + Test Sprint	SRS v2	Assignment 2 released
	31st Jan	2nd Feb/ QUIZ WEEK			Project Plan, Sprint Backlog	
Sprint 3	3rd Feb	High Level Design/ Plan	W5-Requirements-Modelling-UML W6-UseCases (Sequence Diagram)	Dev + Test Sprint	Design Doc, SRS v3(final, /w usecases)	
	10th Feb	14 Feb/ FELICITY			Backlog v2	Assignment 2 deadline
Sprint 4	17th Feb	Scheduling/Testing	W6c-Estimation W6d-Scheduling-and-Tracking	Test + Release Sprint	Test Plan Tracker v1, Design Doc v2	Assignment 3 released
	24th Feb		W7-Testing	R1 Mar 1-3/ Freeze		
	3rd Mar	5th Mar/ MIDS WEEK				
Sprint 5	10th Mar	Design	W8a-Software-Development-for-Startups W8-W9-Design-Intro	Dev + Test Sprint	Test Plan Tracker v1	Term Paper released
	17th Mar		W10-UIdesign			Assignment 3 deadline
	28th Mar	30 mar/ QUIZ WEEK				Assignment 4 released
Sprint 6	31st Mar	Patterns	W11-Pattern-Oriented-Design	Dev + Test Sprint		
	7th April					
Sprint 7	14th April			Final Release Sprint		Assignment 4 deadline
	21st April					Term Paper submission
R2	25-27 April			R2 Code Freeze		

Project Details

- Teams and Projects will be allocated by End of the first Week

- Teams of 4 members
  - You will be allowed to form teams of two member
  - Two teams will be clubbed randomly and that will be the final team for the course project
  - A form will be released soon

- Projects will be allocated randomly

- Contact the assigned TA once projects are allocated

- First meeting with Client should be completed by End of the second week

- Sprints of 2 weeks; first sprint starts on 15th January

Next steps

Goodluck