CECS 491
Administrivia, projects and teams

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CSULB

Administrivia

- Course outline
- Quiz on 343 basics
- Topic proposals
- Teams
- Tools

Course outline

			Teams work on	Deliverables
Week 1				Due dates Monday 10 am
	20-Jan	Introduction & Organization		
Week 2	25-Jan	Choice of project		
	27-Jan	Requirements intro	Requirements	
Week 3	1-Feb	Meetings	Requirements	
	3-Feb	Meetings	Requirements	
Week 4	8-Feb	Requirements presentation		Req Spec
	10-Feb	Design spec intro	Design & Mock-up	
Week 5	15-Feb	(Birgit at workshop)	Design & Mock-up	
	17-Feb	(Birgit at workshop)	Design & Mock-up	
Week 6	22-Feb	Design presentation		Design Spec
	24-Feb	Test spec intro	Tests & prototype	
Week 7	29-Feb	Meetings	Tests & prototype	
	2-Mar	Meetings	Tests & prototype	
Week 8	7-Mar	Test Spec presentation		Test Spec
	9-Mar	Meetings	Prototype	
Week 9	14-Mar	Meetings	Prototype	
	16-Mar	Meetings	Prototype	
Week 10	21-Mar	Prototype presentations		Prototype
	23-Mar	Documentation intro	Implementation	
Spring break	28-Mar	Spring break	Implementation	
	30-Mar	Spring break	Implementation	
Week 11	4-Apr	(Birgit teaching in Norway)	Implementation	
	6-Apr	(Birgit teaching in Norway)	Implementation	
Week 12	11-Apr	Prototype II presentations		Prototype II
	13-Apr	Meetings	Implementation	
Week 13	18-Apr	Meetings	Documentation	
	20-Apr	Meetings	Documentation	
Week 14	25-Apr	Documentation feedback / discussion		Documentation
	27-Apr	Meetings	Presentation	
Week 15	2-May	Final presentations		
	4-May	Final presentations		
Exam week	??	Final exam - meeting required		Final submission

Review of 343 material

- Who took 343 last semester?

- Who took it earlier?

- Who never took 343?

- How do you feel about the content?

Quiz (1 of 2)

- Which one is the right order of activities?
    1. Design – Requirements Engineering – Implementation – Test – Delivery
    2. Requirements Engineering – Design – Implementation – Test – Delivery
    3. Requirements Engineering – Test – Delivery – Design – Implementation
- Which one is not a Requirements Engineering activity?
    1. User Interface Requirements
    2. Acceptance Criteria Specification
    3. Algorithm Design
    4. Stakeholder Interviews
- Which techniques work best to specify the internal behavior of the system?
    1. Use cases and user stories
    2. Mock-ups and wireframes
    3. Activity diagrams and message sequence charts
- Which one is not a software development process model?
    1. Agile
    2. Automated
    3. Iterative

Quiz (2 of 2)

- What is a stakeholder?
- What is the Agile Manifesto?
- What is an application domain?
- What are sources of domain knowledge?
- What types of diagrams can we use to model a system's behavior?
- How do you identify components or classes?
- What is a design pattern?
- What are quality attributes?
- How do you test software?
- How do you assess quality in a software system?

Projects

- If you want to choose your own project, you have to convince me that
  - It is significantly unique and a new idea.
  - That it contributes something to the world (instead of "yet another x").
  - That it is an adequate technological challenge.
- Or you can choose from the following list.

Resilient Smart Gardens

- **SE4S Lab**
- **http://web.csulb.edu/~bpenzens/se4s/ smart.html**
- Stakeholder Birgit Penzenstadler: This project uses an Arduino Board and sensors to connect to a growing bed and to measure with how little water we can get away for growing vegetables in Southern California, and a web frontend to manage the garden, data, and knowledge. If you have always wanted to develop something with embedded systems, this is for you.

The SE4S toolkit

- **Extension of existing project, Java & web**
- **http://web.csulb.edu/~bpenzens/se4s/**
- Stakeholder Birgit Penzenstadler: This toolkit is an online guide for developing sustainable software systems. The tool includes a written guide and online diagramming of a goal model. I want it to be extended with more types of diagrams and better knowledge management.

Shark Lab - RUV

- **Chris Lowe, CSULB,** www.csulb.edu/explore/shark-lab**:** CSULB Shark Lab is looking for some programming assistance. We do a number of different research projects that require image processing and database development.

- Overview: The CSULB Shark Lab studies the behavior of sharks, rays and gamefishes using technology such as acoustic and satellite telemetry, autonomous robotics (AUVs and UAVs), and physiological assays. Much of our research is of public interest and we are always looking for new ways to share our research and findings with the science and general public communities.

- Since these technologies allow us to gather a lot of data, we are often struggling to come up with more efficient means of data processing and management. Here are some examples of software that would be greatly beneficial to our research projects using these technologies:

- RUVS image processing: Image/pattern recognition – we currently use several platforms that gather video image information on sharks or other marine life. We use a platform call "Remote Underwater Video Systems" RUVS to survey for juvenile white sharks along southern California beaches. These systems are simply GoPro Hero 4s place off the seafloor just offshore and are left to run for 2 hours. The sharks are curious of the cameras and often swim right up the camera. We are able to get high resolutions images of the shark's head and tails which possess unique markings much like human facial features. We would like to have software that would enable us to rapidly and accurately identify individuals from video frame grabs.

Shark Lab - UAV

- **Chris Lowe, CSULB**
- www.csulb.edu/explore/shark-lab
- UAV footage: We are using quad and hexcopters to flying aerial surveys of coastal beaches. We are using parallel video cameras that are at fixed distances apart. By time-synching the frames we can use the parallel images as a size calibration for use in calculating sizes of sharks observed. We're looking for software (post-processing) to help us synch the frames, establish a measurement calibration, and measure shark size by tracing body outline.

Shark Lab - ATD

- **Chris Lowe, CSULB**

- www.csulb.edu/explore/shark-lab

- Acoustic telemetry data display (gif generator): We use autonomous underwater acoustic transmitters to track tagged sharks and fishes along the California coast. The receivers record the date, time and ID # of tagged animals detected within 200 m radius of the receiver. We have over 100 receivers along the coast and want to be able to have a web-based program that will take output data from receivers and create controllable gifs to visualize individual fish movement data.

Dating App

- **Queery**
- **http://www.queerydating.com/**
- At QUEERY, we understand that you don't fit into society's boxes. And for the first time, you don't have to. QUEERY is a location-based mobile dating app that accounts for the fluidity of human identity.
- Stakeholder Hayley: will be here on Monday to pitch the project but the website gives you a good overview.

Tools & Teams

- BeachBoard
  - Please add a "real" profile photo ☺
  - Deliverable submissions will be via Dropbox
- Teamwork (internal and back-up)
  - Document sharing
    - Google Drive
    - Overleaf for LaTeX
  - Code repository: Github - Add me @kamikitty
  - Task & team management
  - Bug tracking tool (e.g. BugZilla)

This is how we roll...

- Reports and deliverables due Monday 10:00am
- PDFs for all documents except code
- Go through syllabus, incl. cheating policy
- If you want to know more about me, ask me or look at http://www.csulb.edu/~bpenzens
- I'll put up a survey on BeachBoard for your project and team preferences