CptS 421
Software Design Project I

Lecture-2

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Fall 2014

Lecture Outline

- ABET Overview

- ABET Course Outcomes

- Fall 2014 Senior Design Projects

- Socialcast Demo

ABET Overview

- ABET is a non-profit and non-governmental accrediting agency for academic programs in the disciplines of applied science, computing, engineering, and engineering technology.

- ABET is a recognized accreditor in the United States (U.S.) by the Council for Higher Education Accreditation.

- ABET accreditation provides assurance that a <u>college or university program meets the quality standards established by the profession for which the program prepares its students.</u>

Student Learning Outcomes

- Experience in large-scale software development;
- Communication with clients and other stakeholders;
- Gathering of project requirements;
- Designing of software according to requirements;
- Implementing the design;
- Performing adequate verification, validation, and testing procedures;
- Delivering a professional quality software that meets the client's requirements;
- Writing product specifications, documenting different phases of the project;
- Using software development and maintenance tools
- Planning and developing project timelines;
- Demonstrating an awareness of professional responsibilities;
- Negotiating team dynamics;
- Making presentations, using audio/visual tools, at different stages of the project.

ABET Outcomes for CptS 421

a. An ability to <u>apply knowledge of computing and mathematics appropriate to the discipline</u>. In particular, students should be able to apply this knowledge in a way that demonstrates comprehension of the trade offs involved in the modeling, design and development of software systems of various scales and complexity

b. An ability to <u>analyze a problem</u>, and <u>identify and define the computing requirements appropriate to its solution</u>

c. An ability to <u>design</u>, <u>implement</u>, and <u>evaluate</u> a <u>computer-based system</u>, process, component, or program to meet desired needs

d. An ability <u>to function effectively on teams</u> to accomplish a common goal

ABET Outcomes for CptS 421

e.   An understanding of professional, ethical, legal, security and social issues and responsibilities

f.   An ability to <u>communicate effectively</u> with a range of audiences

g.   An ability to analyze the local and <u>global impact</u> of computing on individuals, organizations, and society

h.   Not applicable

i.   An ability to use current techniques, skills, and tools necessary for computing practice

ABET Outcomes for CptS 421 and CptS423

- Team design project [a,b,c,d,e,g,i]

- Weekly oral progress evaluation of teams by instructor and industry mentors [d,e,f]

- Written reports on project description, solution approach, alpha prototype, beta prototype, test plans and results [a,b,d,f]

- Formal final presentation to instructor and industry mentors [d,e,f]

- Senior design poster and poster presentation judged by industry panel. [d,e,f]

Fall 2014 Senior Design Projects

	Project Sponsor	Project Title	Team Size
1	Microsoft & WSU IRL Lab	Autonomous Wheelchair Navigation	4 to 5
2	Microsoft & WSU CASAS Lab	Microsoft Kinect (V2) Integration into the CASAS Smart Home Platform	3
3	EMC Isilon Storage Division	Highly Scalable TFTP and SFTP server	4
4	ExtraHop	ExtraHop Operational Intelligence platform	4-5
5	NAVSEA at Keyport	Robosub	4-5
6	EECS & Team Gleason	Enhanced Lifestyle Cyber-Interactions for people with ALS: Eye-Typing System	3-4
7	Microsoft & EECS & Team Gleason	Enhanced Lifestyle Cyber-Interactions for People with ALS: Predictive Typing System	3-4
8	Decagon Devices	Food Safety Equipment OCR	3-4
9	EECS & VCEA	Interactive Directory Kiosk	2
10	EECS	EECS Inventory Tracking System	2-3

Fall 2014 Senior Design Projects

- http://www.eecs.wsu.edu/~arslanay/CptS421/Fall2014/Projects/

- Other links:
  - http://blogs.seattletimes.com/microsoftpri0/2014/07/30/microsoft-holds-first-global-employees-hackathon/
  - http://blogs.microsoft.com/blog/2014/08/13/microsoft-ceo-satya-nadella-reveals-oneweek-hackathons-grand-prize-winner-ability-eye-gaze/
  - http://teamgleason.eecs.wsu.edu

Socialcast Demo!

- https://eecs-wsu-edu.socialcast.com/groups/111085-2014fall421423arslanay

Roles and Responsibilities

Course Instructor

The instructor is responsible to:

- overview the course objectives and expectations

- secure project sponsors and projects

- set project budgets and approve major purchases

- provide feedback on team processes and products, when requested

- establish and track deadlines for project deliverables

- evaluate project deliverables and assign grades

- monitor relations with the mentor

Roles and Responsibilities

Industry Mentors

The industry mentor is responsible to:

- provide the technical details about the project

- assist and lead the students with technical decisions and design

- help to evaluate the team processes and products

Example Socialcast Posts

Technical content:

- *"Odd blog post about netgraph queuing and may contain a few ideas on how to fix our issue. Posted here for my own reference."*
http://shveitser.blogspot.com/
Networker`s records
http://shveitser.blogspot.com

- *"I really want to use RethinkDB for our database needs (Outside of video storage) please respond with your thoughts. Its powerful and easy to use.*

  RethinkDB - a distributed document database for scalable web applications

  http://www.rethinkdb.com."

Example Socialcast Posts

Professional content:

- *"Message to stakeholders:*

  Could someone get back to me with some idea of how much security we're going to require in the long run? We need to know what kind of information we're going to be storing and to what extent, by law or preference, we want to secure it. We have several options that don't need to be pursued immediately but some thought and discussion on this should probably happen soon."

Example Socialcast Posts

Professional content:

- *"Message to mentor:*

  After some trouble while testing the AddGlobalParameter() method within the Writer, I found that making a seemingly trivial edit in the SQL queries within the method (queries which I tested prior in the SQLite Manager Firefox extension) alleviated the issue. The change was to simply find the location where two SQL queries were being concatenated and prepend the second of the queries with a semicolon where before there was no semicolon. See the change at the attached link. (link to GitHub repository)

  What do you think of this change? As I said, I tested to two queries in the Firefox extension and the original query resulted in an error, while the edited query resulted in a passing test."

Example Socialcast Posts

Team Dynamics

- *"Hey guys just wanted to say I have fully read over the essay. It will take a lot of time and coordination to get it to work since basically we all have to be together in the same room to write every section. Further, every section is 100% reliant on the previous section being finished. We will need to meet a few hours each day to finish this. Tell me when you are free so we can agree upon times."*

Questions?