

Software Engineering – Spring 2017

Lecture 2

Setting Up Organizations

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Class Project

Class Project

- Get 8-12 people
- Form a startup organization
- Create a vision for a product
- Create a business proposal
- Research and define a product
- Design and create that product
- Test and refine that product
- Deploy that product to market

Create a Commercial Product

- Market research – find something useful
- Product proposal
- Requirements analysis
- Creating a work environment
- Story cards and SCRUM
- Deployment

How to Profit

- Charge for using it
- Charge for licensing it
- Place advertising on it
- Put it in your portfolio
 - Consult on similar things
 - Impress a prospective employer
- Build something bigger and better
- Repeat

Create a Commercial Product

- Market research
- Product proposal
- Requirements analysis
- Creating a work environment
- Story cards and SCRUM
- Deployment

- Profit! 😊

Project Challenge

- Create a web site for *fun* at Kent State
- Anything to help students have fun
- Activities
- Reviews
- Notices
- Contests
- ?
-

Project Challenge

- Create a *fun* web site for students at Kent
- Considerations
 - We will solicit reviews
 - We will conduct security challenges
 - We will add requirements at a later time
 - We will use responsible practices
 - We will use specific tools and resources

Constraints

- Product must be delivered on the web
 - Web site
 - Web service
- Delivery must be via PythonAnywhere
 - Python
 - Bottle.py
- Use of industry standard tools
 - Github
 - Google Docs

How to Proceed

- Find some people you can work with
- Think about some ideas
- Get familiar with Python and SQLite
- Get PythonAnywhere accounts
- Get GitHub accounts
- Think about Codio, TFS, and other sites
- Sketch out some possibilities
- Get to work

Delivery

- Complete assignments in Blackboard
 - Short documents
 - Links
- Large document deliverables as Google Docs
 - Include a shared link in the assignment
- Internal docs may be in your GitHub wiki
 - Also, include links as necessary
 - Private site if you assign me access to the repo
 - (github id: gregdelozier)

Roles

- President
- Project manager (Scrum master)
- Market analyst / Marketing specialist
- Requirements analyst
- Software Developer
- Test Engineer
- Operations Engineer

President

- Maintain overall vision of the enterprise
- Final approval of business proposal
- Answerable for performance
- Provide motivation
- Arrange role fulfillment
- Does presentations

Market analyst / Marketing specialist

- Identifies business opportunities
- Estimates profitability of ideas
- With president, creates business proposal
 - Potential
 - Risks
 - Profit
 - Timeline
- Markets product before and after deployment

Project manager (Scrum master)

- Manages the todo list and calendar
- Makes sure things are getting done
- Manages the Scrum agile process
 - Assigning small tasks
 - Managing task burndown
 - Managing test coverage
 - Providing status reports to management

Requirements analyst

- Determine the definition of the product
- Write definition in clear, unambiguous terms
- Create customer stories
- Serve as customer representative
- Work with test engineer to verify coverage
- Sign off on requirements met before delivery

Software Developer

- Understand the product being created
- Work with analysts to create stories
- "Task out" stories to create tasks lists
- Execute tasks lists to create software
- Unit test the software to the extent possible
- Deliver unit tested software to QA testing

Test Engineer

- Design testing needed to verify requirements
- Create test plans for verifications
- When software is available, execute tests
- Verify requirements coverage as possible
- Maintain requirements coverage burndown
- Certify production readiness of the product

Operations Engineer

- Specify requirements for environments:
 - Production
 - Testing/QA
 - Development
- Create and support necessary environments
- Create and support development tools
- Manage production deployments
- Ensure security and stability of environments

Organizing Time

Every Organization Needs:

- President
 - Project manager (Scrum master)
 - Market analyst / Marketing specialist
 - Requirements analyst
 - Software Developer (2 or more)
 - Test Engineer
 - Operations Engineer
- (people may serve more than one role)

Reading

- See these pages:
 - https://en.wikipedia.org/wiki/Software_engineering
 - http://en.wikipedia.org/wiki/Engineering_ethics
- And this page:
 - http://en.wikipedia.org/wiki/Waterfall_model
- And this document:
 - <https://www.it.uu.se/edu/course/homepage/acsd/vt08/SE1.pdf>

Office Hours

- I will be setting up online office hours.
- Time suggestions?
- Instructions will be sent out.