



01/14: Project Plan

CSE 498, Collaborative Design



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S Project Plan

- Professional Document
- Describes
 - The “Problem”
 - Your Proposed Solution
- Complete
 - Functionally
 - Design-Wise
 - Technically
 - Risks
 - Schedule
- “Only” Thing Left To Do Is “Programming”
- (Ideally) Could Be Used for Out-Sourcing

S Project Plan

- Functional Specifications
- Design Specifications
- Technical Specifications
- Schedule
- Risks

S Functional Specifications

- What does it do?
(Not “how” does it do it?)
- Short List of Features
- Not Necessarily Complete
- Starting With
 - Shared Vision?
 - No Formal Documents?
 - Minimal Documents?
 - Incomplete Problem Statement?
- Understandable by End User
- Initial Problem Statement
- Usually Refined

S Building a House (1 of 4)

Functional Specifications

- 4 Bedrooms
- 2.5 Bathrooms
- Study
- 2-Car Garage
- Walk-Out Basement

Functionally, what else might you like to know?

(Note: Understandable by “User”)

S Building a House (2 of 4)

Functional Specifications Refined

- ~ 2,500 sq. ft.
- \$275,000 - \$325,000
- 4 Bedrooms
- 2.5 Bathrooms
- Formal Living Room and Family Room
- Study
- 2-Car Garage
- Walk-Out Basement

What do you need to know next?

S Interactions With Your Client →

Functional Specifications

- Derived With/From Client
- Documented For Client
- Presented to Client
- Agreed Upon With Client
- Your Job to Capture the Client's Intent!

S Project Plan →

✓ Functional Specifications

➤ Design Specifications

- Technical Specifications
- Schedule
- Risks

S Design Specification →

- How does it look and feel?
- Includes
 - “Business” Process Flow
 - Use Cases
 - Screen Mockups
 - Data Flow Diagrams
 - Data Organization
 - Etc...
- Identifies All the Parts and Their Interactions
- (Mostly) Understandable by End User
- Usually Refined

S Building a House (3 of 4) →

Design Specifications

- Mission Style, Stone Front
- Lots of Light
- Kitchen Connected to Family Room
- Master Bedroom on Main Floor
- Cathedral Ceilings
- Granite Counter Tops
- Etc...

What else will you
need to know to
build the house?

(Note: Understandable by “User”)

S Screen Mock-Ups →

- User Interface Only
 - Shows Layout, Buttons, Pull-Downs, Etc...
 - Non-Functional
 - No Back End
- Helpful for Developing
 - Look-and-Feel
 - Use Cases
- Can Create with...
 - Pencil and Paper
 - PowerPoint (Developer View)
 - Etc...

S Screen Mock-Ups →

- “Use” with Clients
 - Show to Clients
 - Go Through Use Cases with Clients
- “Cruder” may be better.
 - What?
 - Why?

S Interactions With Your Client

Design Specifications

- Derived With/From Client
- Documented For Client
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- Your Job to Capture the Client's Intent!

S Project Plan

- ✓ Functional Specifications
- ✓ Design Specifications
- Technical Specifications
- Schedule
- Risks

S Technical Specification (1 of 2)

- How does it do it?
- Identifies All the Parts and Their Interactions
- Everything a Developer Needs to Write the Code
- Includes Things Like...
 - Machine Architectures
 - Software Technologies
 - Production Environments
 - Development Environments
 - SDK's (Software Development Kits)
 - Network Topology
 - Database Schema
 - Object Models and Class Diagrams
 - Continued...

S Technical Specification (2 of 2)

- Includes Things Like...
 - UML Diagrams
 - Pseudo Code
 - Function Prototypes
 - Schedule
 - Test Plan
 - Risk Analysis
 - Etc...
- Probably Not Understandable by End User
- Possibly Not Understandable by Client
- Usually Refined

S Building a House (4 of 4)

Technical Specifications

- 20 lb Asphalt Roof Shingles
- 2" x 6" Outside Walls
- R48 Blown Attic Insulation
- Cat5E Wiring
- Pre-Made Roof Trusses
- 12" Poured Concrete Foundation
- Etc...

(Note: Probably Not Understandable by "User")

S Approach

- Break Big Problems Into Smaller Problems
- Identify Constraints
- Identify "Risks"—Things You Don't
 - Know
 - Understand
 - Know How To Do
- Consider Tradeoffs
- Select Appropriate Technologies
- Identify Core Features for a Prototype

S Interactions With Your Client

Technical Specifications

- Derived With/From Client
- Documented For Client
- Presented to Client
- Agreed Upon With Client
- Your Job to Capture the Client's Intent!

Cannot be emphasized enough!

S How To's (1 of 4)

- Quickly identify...
 - what you don't know,
 - what you don't understand, and
 - what you don't know how to do.
- Conceptually...
 - Start with functional specifications.
 - Get agreement with client.
 - Include as first part of project plan.
 - Do design specifications.
 - Get agreement with client.
 - Include as 2nd part of project plan.
 - Do technical specifications.
 - Get agreement with client.
 - Include as 3rd part of project plan.
 - Do schedule.
 - Do development, testing, and deployment.
- In CSE498, must do all three in parallel (and iterate).

S How To's (2 of 4)

- Approach
 - Make Skeleton Document Immediately
 - Will Get You Organized and Focused
 - Include "Under Construction" Sections (Totally Empty)
 - Develop In Parallel When Possible But...
 - Complete Functional First
 - Complete Design Second
 - Complete Technical Third
 - Refine As Needed
 - Assign Sections to Team Members
 - Share with Client
 - Ask For (Specific) Feedback
 - Highlight What's New
 - Tricky Balance
 - Not Enough?
 - Too Much?

Is this what you had in mind?

S How To's (3 of 4)

- Schedule
 - Dictated by Course
 - See [Other Information](#), [Major Milestones](#)
 - 01/26 Team Status Report
 - 02/02 Project Plan
 - 02/23 Alpha Demos
 - 03/30 Beta Demos
 - 04/27 Project Video
 - 04/29 All Deliverables
 - Other Milestones By Educated Guesses
 - Track To It At Least Weekly at Triage Meetings
 - Revisit Often and Revise If Necessary
 - Delivery Slippage = Graduation Slippage

S How To's (4 of 4)

"Living Document"

Make Sure Your Project Plan Has...

- Cover Page
 - Title
 - Table of Content
 - Page Numbers
 - Headers and Footers
 - Etc...
- (That is, make sure your plan looks professional.)

S Interactions With Client

Client May Specify...

- Requirements
 - Functional
 - Design
 - Technical Requirements
 - Operating Systems
 - Programming Languages and Environments
 - Web Technologies
 - Etc...
 - Legacy
 - Milestones
 - Etc...
- (You may explore and propose other ideas.)

S Nota Bene: Project Plan

- How many...
 - ...drafts will you write? Many.
 - ...drafts will you share with your client? A Couple.
 - ...final documents will you submit for CSE498? One
- Due Date
 - February 2
 - Less Than 4 Weeks
- In Class Formal Presentations
 - February 2 – February 11
 - PowerPoint Template Provided

S Resources on the Web

- [Downloads](#)
 - [Boeing](#)
 - [Microsoft](#)
 - [Motorola](#)
 - [Union Pacific Railroad](#)
- [Other Information, Resources](#)
 - [W3 Schools](#)
 - [SourceForge](#)
 - Etc...

S Project Plan

- ✓ Functional Specifications
- ✓ Design Specifications
- ✓ Technical Specifications
- Schedule } Next Meeting
- Risks }

S What's next?

- Team Photos
- Meet Team Members
- Schedule
 - First Meeting ASAP
 - Schedule Weekly Team Meeting
 - Schedule Weekly Triage Meeting with TA
- Select Client Contact Person
- Contact Client
- Setup
 - Team Machines
 - Team Website (www.cse498t01s.cse.msu.edu)
- Think About [Team Status Report](#)

S Client Contact

- Pick a Team Client Contact Today
- Send Email Immediately
- Send Contact Info for All Team Members
 - Email
 - Cell Phones
- Request
 - Contact Info for All Client Contacts
 - Time (in Next Day or So) for Meeting and/or Call
- On-Site Visit(s)
 - Do If Possible
 - Do Not Wait for On-Site to Get Started

S Team <#> Status Report (1 of 4)

- Client Contact
 - Status Point 1
 - Status Point 2
- Team Meetings
 - Status Point 1
 - Status Point 2
- Team Organization
 - Description Point 1
 - Description Point 2

- January 26
- Less than Two Weeks
- All Teams

Team <#>: <team_name>

S Team <#> Status Report (2 of 4) →

Team <#>: <team_name>

- Server Systems / Software
 - Description &/or Status Point 1
 - Description &/or Status Point 2
- Development Systems / Software
 - Description &/or Status Point 1
 - Description &/or Status Point 2
- Web Site
 - Status Point 1
 - Status Point 2

S Team <#> Status Report (3 of 4) →

Team <#>: <team_name>

- Project Definition
 - Description Point 1
 - Description Point 2
 - Description Point 3
 - Description Point 4
- Project Plan Document
 - Status Point 1
 - Status Point 2
 - Status Point 3
 - Status Point 4

S Team <#> Status Report (4 of 4) →

Team <#>: <team_name>

- Risks
 - Risk 1
 - Description
 - Mitigation
 - Risk 2
 - Description
 - Mitigation
 - Risk 3
 - Description
 - Mitigation
 - Risk 4
 - Description
 - Mitigation