

Requirements Elicitation and User Stories

Learning Goals

- Elicit requirements from stakeholders by conducting interviews.
- Write user stories according to the "INVEST" criteria.

Five Most Popular Topics

- Nutrition: 59 said "very interested"
- Exercise: 63
- Finance: 63
- Music: 72
- Sleep: 91

Eliciting Requirements

- Note: "requirements engineering" is a whole field!
- Like most other things in this course, I'll give you *just enough to be dangerous*.

Attempt # 1

- Build the app YOU want?
- You know your own needs (better than anyone)
- Oops: there are five other people on the team
- Is your goal really only to benefit yourself?

A Better Idea

- Find out what *others* need
- But how?

The Old Way

- Ponder deeply
- Build something
- Hope people buy it
- Oops! The user wasn't like me!

The New Way

- Gather data from *stakeholders*
- *Stakeholder*: "a person with an interest or concern in something, especially a business."
- Who might be stakeholders of a *sleep* app?

Methods

- Surveys: good for counting things
 - But you have to know what to count
- Better start: **interviews**

Focus Groups

- Focus group: gather 5-7 or 8-12 participants for a group interview
- Pro: more participants, less time
- Discussions reveal similarities and differences
- Con: quiet people might not get heard
- Skill is needed to manage conversation

Writing Questions Is Tough

- "A taco is a kind of sandwich, right?"
- Is a taco a sandwich?
- What food categories are the items in the picture in?
- What do you expect to see on the menu at a sandwich restaurant?
- What makes something a sandwich?



Designing Questions

- Neutral: unbiased, nonjudgmental
- Simple
- Open-ended
- Speak their language
- Ask for demonstrations or recall of concrete events

Simple Questions

- "What were the strengths and weaknesses of the compiler and IDE?"
- -> "What did you think of the compiler" & "What did you think of the IDE?"

Netural Questions

- "Did you like the language you used?"
 - -> "What did you think of the language?"
- "Why do you like this design?"
 - What if they didn't like the design?

Recording Data

- Write notes
 - Rewrite and summarize after the interview
- Record audio & transcribe

Rapport

- Be nonjudgmental — develop a poker face!

Conducting the Interview

- Start with easy questions
- Listen!
- Provide opportunities to continue: "Is there anything else you wanted to tell me?"
- Ask for clarification when needed: "What exactly do you mean when you say...?"

What Questions Should We Ask About Cooking?



Demo

Requirements, User Stories

- Question: how to express requirements?
- Answer: "As a <stakeholder>, I want <something> so that <need>."
- Example: "As a student, I want to filter recipes by cost so I can keep dinner under \$5 per person."

User Story Criteria: "INVEST"

- Independent
- Negotiable
- Valuable
- Estimable
- Small
- Testable

Independent

- Ideally: want to implement requirements in any order
- In practice, there may be dependencies

Negotiable

- Details to be negotiated during development
- Good Story captures the essence, not the details

Valuable

- This story needs to have value to someone (hopefully the customer)
- Especially relevant to splitting up issues

Estimable

- Helps keep the size small
- Need to complete each user story in 1-2 weeks (or less)

Small

- Fit on 3x5 card
- At most two person-weeks of work
- Too big == unable to estimate
- Too big == may not finish in time for delivery

Testable

- Ensures clarity
- If not testable, when do we say the task is done?

Summary

- Write open-ended, high-quality questions to elicit requirements
- Use INVEST criteria to write good user stories