

Product Life-Cycle: Requirements

Dewayne E Perry

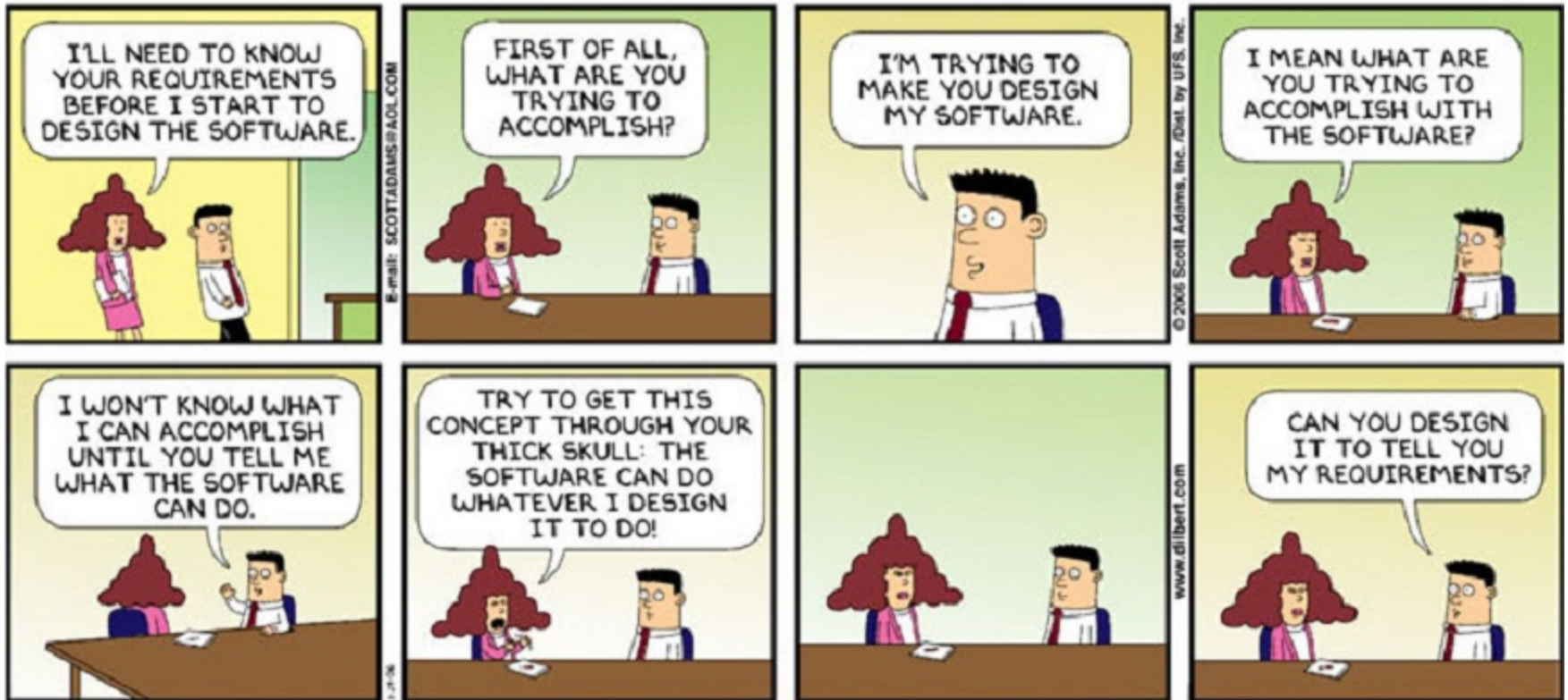
ACE 5.124

Office Hours: M/W 11:00-12:00

perry @ ece.utexas.edu

www.ece.utexas.edu/~perry/education/

Dilbert on Requirements



Introduction

⇒ We (SEs) took responsibility for both

- ↳ The problem and solution spaces
- ↳ The world and the machine

⇒ Requirements Engineering:

↳ Elicitation

- Record desired behavior of the system from the user
- Help users (if needed) in understanding the problem

↳ Description

- Document critical aspects
- Provide user friendly feedback on the elicitation process
 - ✓ Mock-ups
 - ✓ Prototypes
 - ✓ Examples

↳ Analysis

- Consistency
- Adequacy
- Completeness
- Solving the right problem

Introduction

External drivers

↳ Customer needs

- What customer is willing to pay for
- What problems the customer wants to solve

↳ Business needs

- Strategic/marketing vision
- To minimize cost and interval

↳ Project needs

- Resources

↳ Domain requirements

Internal drivers

↳ Cost

↳ Interval

↳ System characteristics -

- Functional properties
- Non-functional properties

Introduction

⇒ Basic problem: how to elicit needs of the customer

- ↳ May be computer illiterate
- ↳ May not know what they want
- ↳ May not know what they need
- ↳ May not be able to tell us what they know

⇒ Various bases for requirements

- ↳ Customer-based
 - Customer written descriptions of what they want
- ↳ Market-based
 - Set of opportunities and goals
- ↳ Entrepreneurial-based
 - A great idea that willing to bet on

⇒ Basic problems:

- ↳ Vague, ambiguous, incomplete, inconsistent, . . .
- ↳ Everything subject to change

Introduction

⇒ Documenting Requirements

↳ Record intent

- Record of desired behavior as described by the user
 - ✓ Can be reviewed
- User decisions about the desired behaviors
 - ✓ Not programmers/developers

↳ Characteristics

- Reference document
- Implementation independent
- Complete, except where incompleteness explicitly noted
- Avoid duplication and inconsistency

↳ Uses

- Basis for work estimation
- Insurance against loss of knowledge
 - ✓ Resulting from churn, turnover
- Basis for test plan development
- Constraints on future changes
- Arbiter among conflicts