



Development Process

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Software Engineering

- IEEE std 610.12:1990 “IEEE Standard Glossary of Software Engineering Terminology”:

Software Engineering

The application of a systematic, disciplined, quantifiable approach to the development, operation, and maintenance of software; that is, the application of engineering to software.



Software Engineering Process

- **Systematic**

- Pre-planned, not ad-hoc
- Thorough
- Repeatable

- **Disciplined**

- Following the plan
- Eyes on target

- **Quantifiable**

- Measurable

- **Development**

- *this

- **Operation**

- Deployment is an important part of SE, and must be planned accordingly.

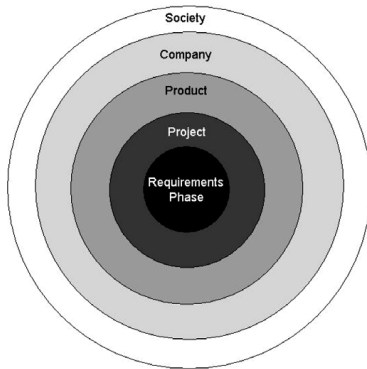
- **Maintenance**

- 80% – 90% of a system's life span is spent in maintenance.



Process vs Project vs Product

T. Gorschek, A.M. Davis, *Requirements Engineering; In Search of the Dependent Variables*, Information and Software Technology 50(2008):67–75.



(+ Process, which is not visible in this figure but neatly bisects it.)



Example of UML Process:

Dice Game Machine

- On the Machine a player may login, logout or play the game.
- When playing the game a player rolls two die. If the total number of points is greater than seven the player wins, otherwise the player loses.

Construct

- Use Case Diagrams
- Use Cases
- Conceptual Model
- Class Diagram
- Collaboration Diagram
- Interaction Diagram
- Flowcharts?
- ?? What happened to testing ??



Discussion

- What is good with waterfall?
- Where/How would you do design in Scrum?
- Where would you do design in Kanban?
- When should you use which process model?
- What are their limitations?
- Does it work to incrementally test a product like this?