Feasibility → Requirements

Contract Negotiations

I want you to build a game...

Customer

Game developer

Contract Negotiations

I want an RPG better than anything seen before!

Customer

Game developer

Contract Negotiations

It needs to be ready in 3 months!

Customer

Game developer

Contract Negotiations

Oh yeah, I only want to pay you $3000 to build it.

Customer

Game developer

Constraint Triangle

Cost

Quality

Time
Contract Negotiations

I want an RPG better than anything seen before!

It needs to be ready in 3 months!

So how much will it cost?

Just write a blank check. I’ll fill in the amount when I’m done!

Feasibility: Can we meet the constraints?

Just about everything we said about the difficulty of software development in general is magnified for feasibility testing.

The greatest aid is experience!
**Feasibility**

- Understand the capabilities of your team and tools
- Understand the proposed system
- Explore gaps

**Life Cycle Model**
- feasibility
- requirements
- design
- implementation
- testing
- maintenance

**Waterfall Model**

- Requirements specifications at the start of the project
- Design
- Implementation
- Testing

**Requirements in Iterative Development**

- What the system should do.
- What the system does.
- Requirements evolve over the course of the project.

**Rational Unified Process**

(a form of controlled iteration)

- Process Workflows
  - Business Modeling
  - Requirements Analysis & Design
  - Implementation
  - Test

- Requirements specified throughout project

**XP**

- Release v.i & plan v.i+1
- Iteration
- Release v.i+1 & plan v.i+2
- Requirements for release v.i+1
- Requirements for iteration
- Requirements specified throughout project
Types of Requirements: FURPS+

Functional: features, capabilities
Usability: human factors, help, documentation
Reliability: frequency of failure, recoverability, predictability
Performance: response times, throughput, accuracy, availability, resource usage
Supportability: adaptability, maintainability, configurability

Functional Requirements

- Use cases - RUP
- User stories - XP

Definition of “Use Case”

“The specification of sequences of actions that a system, subsystem, or class can perform by interacting with outside actors”


RUP

- Casual to “fully dressed” use cases
- Use case diagrams
- Use case model
- Books have been written...

XP

Each user story should be briefly recorded on a 3x5 card.

RUP Casual Use-Case = XP User story

Pink Monster

Play Game: Player starts game. Quad scene appears with pink monster at bottom of screen and various targets moving across screen. Player moves pink monster and launches fruit. Hitting target increases score. Hitting CS cart causes player to lose.
Pink Monster

**Play Game:** Player starts game. Quad scene appears with pink monster at bottom of screen and various **targets moving** across screen. **Player moves pink monster and launches fruit.** Hitting target increases score. Hitting CS cart causes player to lose.

**Move Pink Monster:** Player moves pink monster along bottom of screen with left and right arrows. Pink monster stops at screen boundaries.

**Change fruit:** Space bar changes fruit. Fruits include bananas, watermelon, oranges, apples, and pears.

---

**Feasibility**

Understand the capabilities of your team and tools

Understand the proposed system

---

**Use Case Realization**

Feasibility: The technology to realize this use case exists. Give supporting evidence.
Use Case Realization

**Use Case**
Move Pink Monster: Player moves pink monster along bottom of screen with left and right arrows. Pink monster stops at screen boundaries.

**Realization Analysis**
The same control is used in space invaders.

Feasibility

Understand the capabilities of your team and tools
Understand the proposed system

Gaps

Explore Gaps: Risk Analysis

- What are the greatest risks to the project?
- What can we do to resolve or reduce these risks in the time allotted?
- Who is going to do it? How will they demonstrate they’ve done it?
- What are our backup plans?

Assignment

Concept Assessment:
Is it a good concept?
Criteria and evaluation
Is it feasible?
Use Cases
Use Case Realization
Risk analysis
Evaluation