

Understanding the object-oriented analysis and design processes

The Object-Oriented Design Process

- Gather requirements
 - What problems are you trying to solve?
- Describe the Application
 - Build simple narrative conversation to help people
- Identify the main objects
 - Based on the story, which things/objects that is the most important!
- Describe the interactions
 - how objects interact each other
- Create a Class Diagram

The Object-Oriented Design Process

- Not done once
- Continually revisit and refine steps over weeks or months during the development

Defining Requirements

- What must a software DO?
- Functional requirements: What does it do?
 - Features/capabilities
- Non-Functional requirements: What else?
 - Help
 - Legal
 - Performance
 - Support
 - Security

Functional Requirement Examples

- Application must allow user to create 140 characters
- System must display the heart rate, temperature and blood pressure of a patient connected to the patient monitor
- Application must allow user to search by customer's last name, telephone number or order number
- Program must allow receipts to be generated via email

Functional Requirement Examples

- System must automatically produce monthly comparative analysis (using current month and year-to-date as compared to same month last year and year-to-date last year) report by:
 - Products (units sold and dollars)
 - Product category
 - Department
 - Region
- Report must be in PDF format and automatically emailed to everyone in administrators' group on first day of month

Non-Functional Requirement Examples

- System must respond to searches within 2 seconds
- Help desk should be available, Mon-Fri 8am – 6pm
- Be available 99.99% of time during business hours

FURPS/FURPS+ (checklist)

- Functional Requirements
- Usability requirements
- Reliability requirements
- Performance requirements
- Supportability requirements

- Design requirements, implementation requirements, interface requirements, physical requirements

Sommerville: Requirements

- Business Requirements
- User Requirements
- Functional Requirements
- System requirements

Sistem Informasi Pelayanan Publik

- Business Requirements
 - Memberikan kemudahan dan kenyamanan bagi petugas kelurahan dalam melayani masyarakat
 - Mempercepat proses pelayanan terkait di kelurahan kepada masyarakat
 - Meningkatkan mutu pelayanan di kelurahan sesuai peraturan pemerintah
 - Memberikan informasi data kependudukan secara mutakhir

Sistem Informasi Pelayanan Publik

- User Requirements
 - Tampilan perangkat lunak menggunakan Bahasa Indonesia yang baik sehingga mudah dipahami
 - Menggunakan aplikasi berbasis web sehingga cukup menggunakan browser, informatif, efisien
 - Dapat dibuka di berbagai macam platform dan gawai
 - Formulir pelayanan diberikan menu bantuan
 - Terdapat menu untuk mencetak laporan

Sistem Informasi Pelayanan Publik

- Functional Requirements
 - Menampilkan data kependudukan secara lengkap
 - Mencari data kependudukan dengan cepat dan akurat
 - Menampilkan formulir terkait kependudukan atau pelayanan di kelurahan
 - Petugas kelurahan memiliki menu tersendiri sesuai dengan tugas dan fungsinya
 - Petugas dapat mencetak berbagai laporan terkait
 - Mencetak tanda terima
 - Terintegrasi dengan sistem kependudukan yang ada di Kecamatan

Sistem Informasi Pelayanan Publik

- System Requirements
 - Web based application
 - PHP
 - Apache
 - Terintegrasi dengan sistem kependudukan di Kecamatan
 - Menggunakan database MySQL