AN INTRODUCTION TO

OBJECT-ORIENTED ANALYSIS

CHAPTER 3: THE OBJECT-ORIENTED DEVELOPMENT LIFE CYCLE

OBJECT ORIENTED SYSTEM DEVELOPMENT

- ✓ Object oriented systems development is a way todevelop software by building self – contained modules or objects that can be easily replaced, modified and reused.
- ✓ In an object–oriented environment, software is a collection of discrete objects that encapsulate their data as well as the functionality of model real–world events “objects” and emphasizes its cooperative philosophy by allocating tasks among the objects of the applications.
- ✓ A classis an object oriented system carefully delineates between its interface (specifications of what the class can do) and the implementation of that interface (how the class does what it does).

WHAT IS A METHODOLOGY?

- A collection of comprehensive guidelines to follow for completing every SDLC activity
- Examples of methodologies: Structured (Traditional), Object-oriented

OBJECT-ORIENTED ANALYSIS & DESIGN

- Object-oriented analysis
  - Defines all of the types of objects that do the work of the system

- Object-oriented design
  - Shows how objects interact
  - Defines all additional object types needed to communicate with people and devices in the system
  - Refines each type of object for implementation in a specific language and environment

CHAPTER 3: THE OBJECT-ORIENTED DEVELOPMENT LIFE CYCLE (OODLC)

1. The Life Cycle
2. The Object-Oriented Analysis Phase
3. The Object-Oriented Design Phase
4. The Construction Phase
5. The Object-Oriented Testing Phase
6. The Maintenance Phase

1. THE LIFE CYCLE

- OODLC merupakan update dari SDLC (System Development Life Cycle)
- SDLC merupakan suatu proses yang yang digunakan oleh analis sistem untuk mengembangkan suatu sistem informasi, mulai dari analysis, Design,construction, testing dan implementation sistem, maintenance (support).

❶ THE LIFE CYCLE

Phase	Activity	Models Produced	Components
Analysis	OOA	Requirements Model	Project scope Feasibility study Context diagram Class diagram: Entity classes Interface classes Control classes Behavior diagrams: Statechart diagrams Collaborations and CRC cards Sequence diagrams Activity diagrams
Design	OOD	Design versions of the OO models	
Construction	OOP	Actual system	
Testing	O-O Testing	Working system	
Maintenance	All of the above	All of the above	

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2. THE OBJECT-ORIENTED ANALYSIS PHASE

- Dalam analisis, kita memodelkan kebutuhan user
- Untuk apa sistem dibuat?
- Output berupa model konseptual.
- Terdiri dari :

  1. Model kebutuhan
  2. Model Obyek

2. THE OBJECT-ORIENTED ANALYSIS PHASE

- Model kebutuhan mempunyai 5 komponen
  - Lingkup proyek
  - Context Diagram
  - Use Case Model
  - Deskripsi Interface
  - Studi Kelayakan

2. THE OBJECT-ORIENTED ANALYSIS PHASE

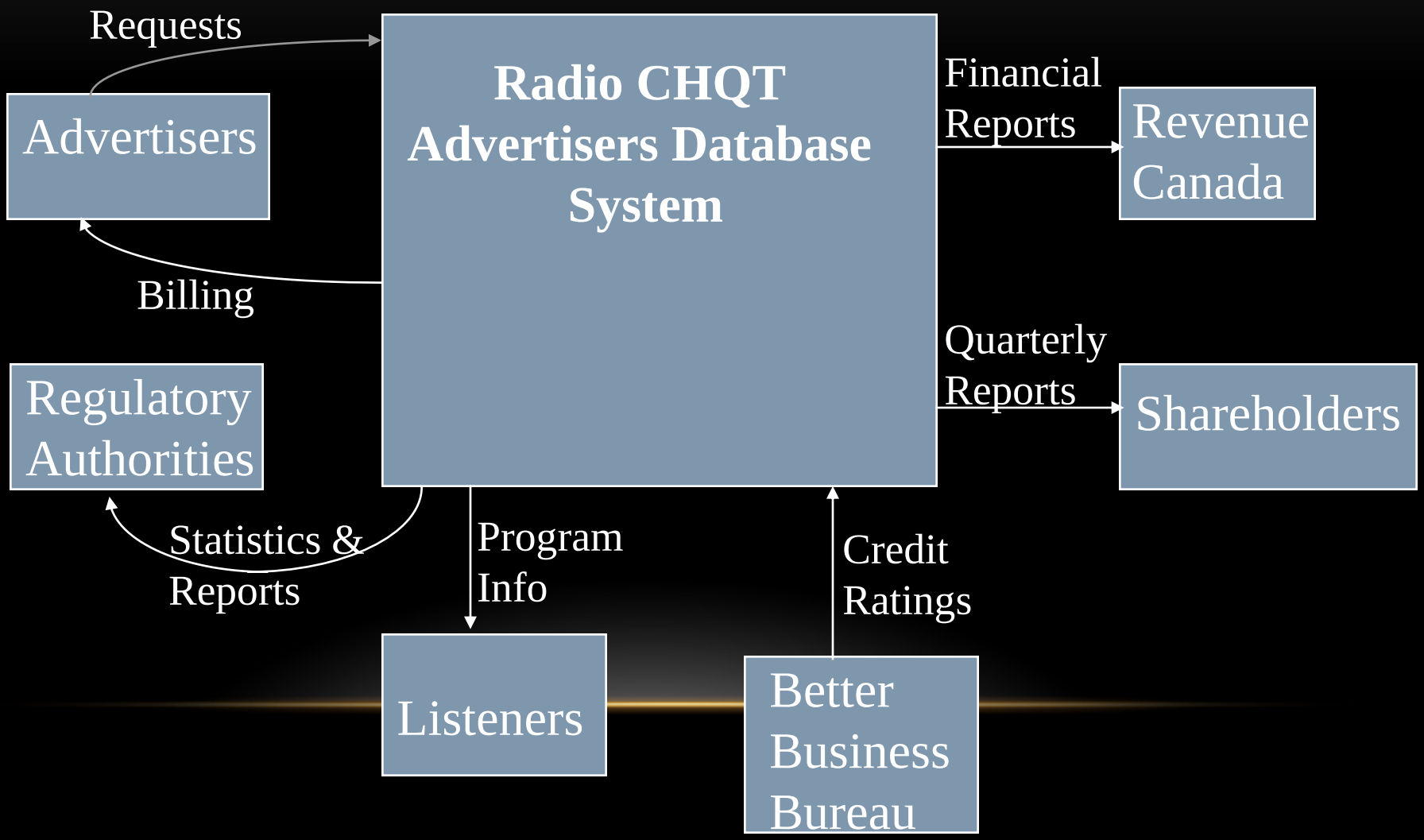
- Lingkup Proyek
  - Apa yang akan dihasilkan ?
  - Secara umum, apa yang akan dikerjakan sistem untuk user.
  - Termasuk mendeskripsikan apa yang tidak bisa dikerjakan sistem.

2. THE OBJECT-ORIENTED ANALYSIS PHASE

- Context Diagram
  - Dideskripsikan dengan kotak besar yang dikelilingi dengan kotak kecil.
  - Mewakili entitas eksternal seperti orang, organisasi, sistem, atau hal-hal lain di luar sistem yang berhubungan dengan sistem yang akan dibangun.

- REQUIREMENTS MODEL

CONTEXT DIAGRAM



2. THE OBJECT-ORIENTED ANALYSIS PHASE

- Use case Model

Mendeskripsikan tentang bagaimana user dapat menggunakan sistem dalam mengerjakan pekerjaannya.

2. THE OBJECT-ORIENTED ANALYSIS PHASE

- Deskripsi interface
  - GUI
  - Komunikasi antar interface

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❸ The Object-Oriented Design Phase

- Modify Analysis model to reflect design decisions,
- Mostly by adding information to the existing model.
- Add some new classes that do not directly model things in the real world.
- Result is a plan of *how* the system will do what the Requirements Analysis asks for

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Analysis is *what* the system must do,

Design is *how* the system will do it.

THE OBJECT-ORIENTED DESIGN PHASE

- Desain System, Custom development, package development.
- Desain Arsitektur Jaringan, Desain Hardware, Desain jaringan
- Desain Interface, Chart Struktur Interface, Desain input, Desain output
- Desain File dan Database, Pemilihan format penyimpanan data, optimasi data storage
- Desain Object, Chart Struktur Program, Spesifikasi program

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5. The Object-Oriented Testing Phase
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❹ The Construction Phase

- Coding and testing

  Should be done with an O-O language or database.
- Deployment and user training.

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5 The Object-Oriented Testing Phase

- Complete the unit testing of individual classes and programs
- Then system testing.
- Testing must be thorough and complete,
- And *automated*.

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❻ The Maintenance Phase

- Bug fixes
- Enhancements
- Viruses
- End-user computing
- Backups and restores
    - 6 levels + offsite.
- Disaster preparedness and recovery (Pencegahan dari hal yang tidak diinginkan dan pemulihan