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PRESENTS

Session-1:
Business Enterprise Applications- Overview

Important Points to Note

- All Participating colleges are requested to mute your telephone lines during the webinar session.

- Participants are requested to make note of questions / responses to questions, if any, and pass them on to the Class Representative who can sit closer to the system to send out the messages on behalf of the class.

- Question & Answer(Q&A) is scheduled at the end of the session and each college is given a chance to ask 2-3 questions. Answers to the questions posted by colleges through chat option will also be answered during the Q&A.

- Instructor may initiate the relevant Polls at regular intervals during the session. Institutes are requested to gain inputs from all the participants and provide your responses to these polls initiated by instructor.

- Session Feedback will be initiated at the end of the webinar. Institutes are requested to get the collective opinion from the participants and provide your responses for the feedback questionnaire.

Session-1:
Business Enterprise Applications- Overview

Session Plan

- Define enterprise applications & Classify enterprise applications
- Challenges in Building Enterprise Applications
- Key Characteristics & Applicability of Software Engineering Methodologies
- Life-cycle of raising enterprise applications
- Ingredients of an enterprise applications
- Outline knowledge and skill areas required to raise enterprise applications
- Logical architecture – layers
- Success of Enterprise Applications

What is an Enterprise Application

- The enterprise applications are the software applications that are the DNA of organizations and imbibe the business functionalities of the enterprises to catalyze their growth.

- The enterprise applications typically imbibes complex business logic, expected to be high on performance, fortified from vulnerabilities and attack vectors, expected to handle large volumes of data and concurrent users and is scalable on need basis, easily maintainable and extendable, and is able to orchestrate with the overall enterprise application landscape of the organization.

- Enterprise applications not only enhance the efficiency and productivity of the organization but also help in ensuring business continuity.

Categorization of Enterprise Applications

- Visibility to end user
- Industry domain specific application
- Type of processing supported
- Custom built or readymade application
- Host Centric or distributed applications

Categorization of Enterprise Applications(Contd....)

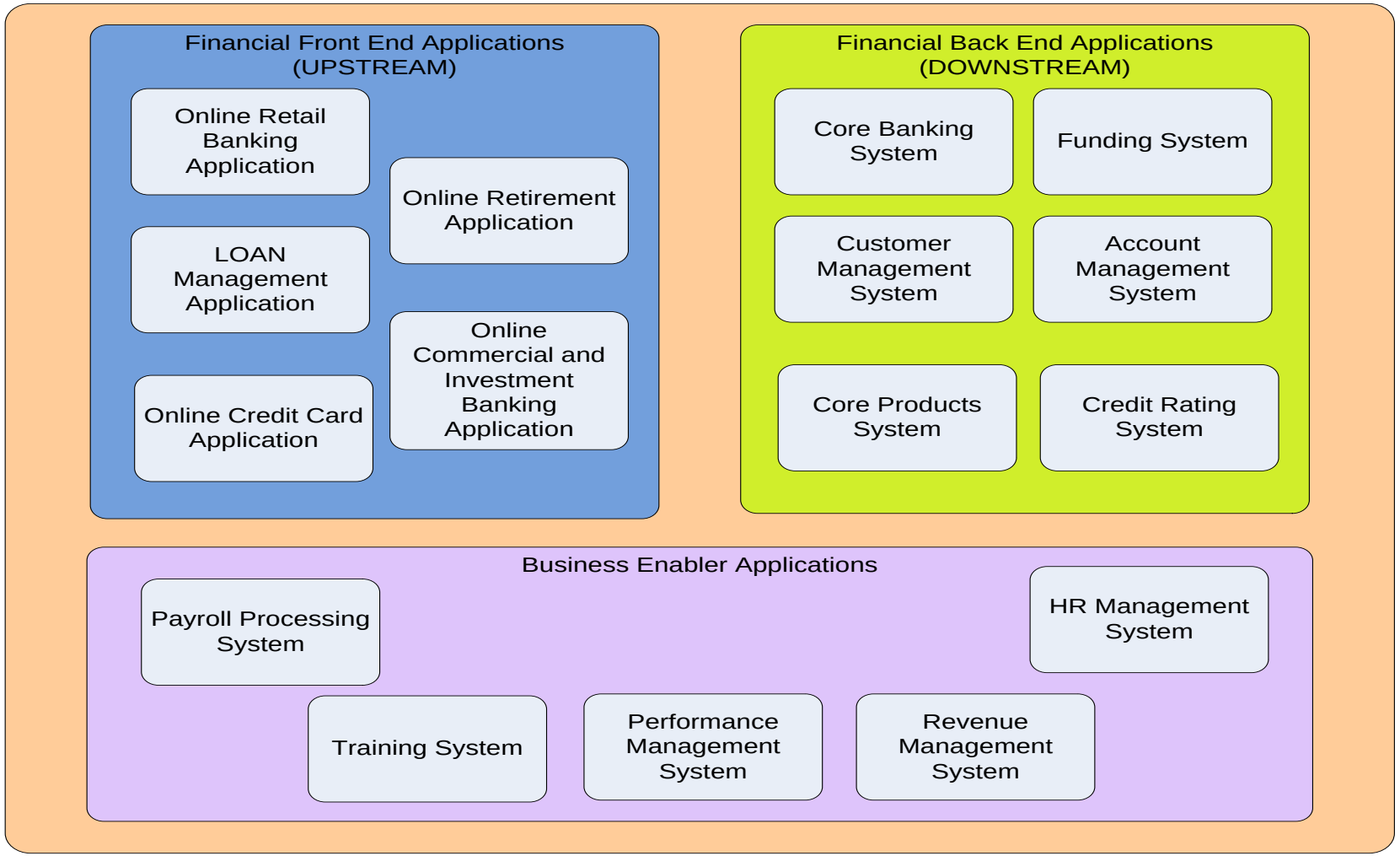
Visibility to end user:

- Customers facing enterprise applications or front-end systems of an organization are referred to as **Upstream enterprise applications**. For example, an 'order capture' application which captures online orders of customers is an upstream enterprise application.

- The back-end enterprise applications which work behind the scenes in an organization to fulfill the customers' or end users' needs are called **Downstream enterprise applications.** For example, an 'order provisioning' application can be considered as a downstream application as it helps in fulfilling and provisioning the online orders captured through the 'order capture' upstream enterprise application.

- There is a third category of applications in an organization, which fulfills the general organizational needs, and can be referred to as **Business Enabler enterprise applications** e.g. payroll and human resource management applications.

Categorization of Enterprise Applications(Contd....)



A typical enterprise application landscape (partial) in Financial domain (upstream, downstream and business enabler enterprise applications)

Categorization of Enterprise Applications (Contd....)

- Industry domain specific application
  - Categorized on the basis of industry they cater to
  - A billing application for telecom or billing application for the retail industry

- Type of processing supported
  - Categorized based on parameters like nature of processing they perform
  - Example- batch processing/ online transaction processing (OLTP) /online analytical processing(OLAP) / decision support systems (DSS)

- Custom built or readymade application

- Host Centric or distributed applications

Challenges in Building Enterprise Applications

With changing market dynamics, customer needs and technology, Enterprise applications face many challenges to stand out from the crowd. Below are the key challenges:

- Business Process Automation :
- Data Harmonization
- Application Integration
- Application Security
- Internationalization
- Transaction Management
- Rich User Experience
- Quality of Service (QoS)
- Technology Selection
- Governance and Team Productivity

Software Engineering methodologies

- **Iterative methodologies**
  - **IBM Rational Unified Process (RUP):** RUP has assembled the iterations in four phases: inception, elaboration, construction and transition.

    In each of the iteration, the unit of work is divided into 9 disciplines:

    6 of 9 are engineering disciplines are:

    1) Business modelling 2) Requirements 3) Analysis and Design 4) Implementation 5) Test 6) Deployment

    3 of 9 are supporting disciplines are:

    1) Configuration and Change Management 2) Project Management3) Environment
  - **Agile software development:** an extension to the iterative approach to build applications in a nimble fashion with a light weight process.

- **Waterfall methodology**
  - Traditional approach of software development that typically comprises of a sequence of phases —requirements, analysis, design, build and testing —wherein each phase output acts as input to the next phase.

Life Cycle of Building an Enterprise Application

Development of an enterprise application follows a life cycle with the following stages:

- Incepting
  - Typically starts as a result of enterprise analysis and business modeling activities.
  - Requirements engineering is the key activity.
  - Concludes with casting the plan and project estimation.

- Architecting and Designing
  - Takes key inputs from the enterprise architecture initiatives of an organization.

Life Cycle of Building an Enterprise Application (contd...)

Application architecture and software designing are the key activities.

- Constructing
  - starts with building the application framework components;
  - followed by construction of application components;
  - Unit testing and code review and analysis are also carried out
  - Concludes with component integration

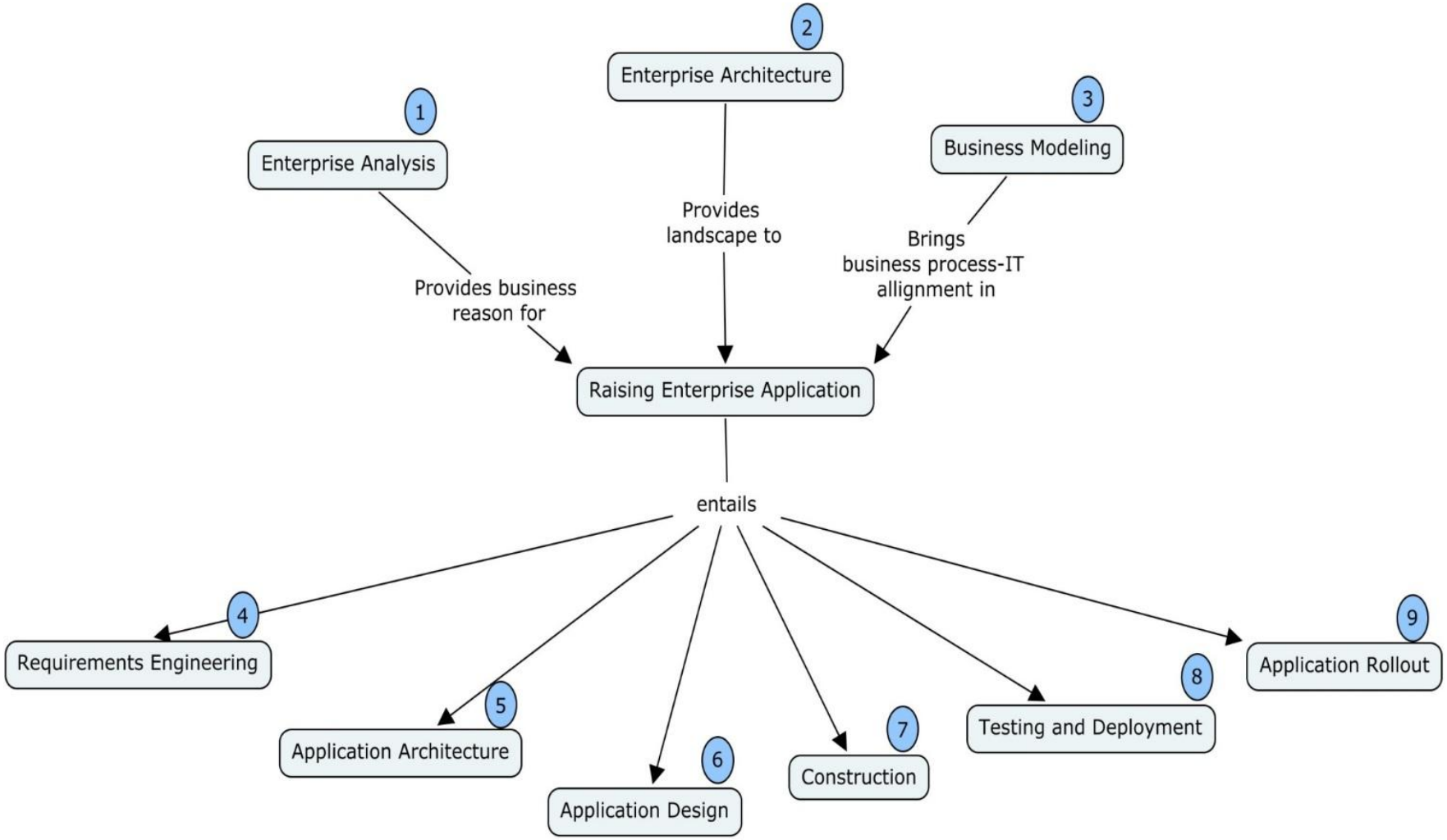
- Testing
  - includes integration testing, system testing and user acceptance testing

- Rolling out
  - successful user acceptance test leads to application rollout.

Enterprise Applications Stakeholders

- **Incepting Phase:**
  - Key stakeholders: sponsors and customers
  - Other important stakeholders: process groups, product groups, service groups, IT application groups, IT infrastructure groups, analyst groups, vendors, etc.
- **Architecting and Design Phase:**
  - Enterprise architects, data architects, integration architects, solution architects, and application architects.
  - Respective designers also join hands with architects in their respective area
- **Construction Phase:**
  - Programmers
- **Testing Phase:**
  - Testing teams such as integration testing teams, performance testing team, application security testing team, interface testing team and user acceptance testing team.
- **Rolled-out Phase:**
  - Release team and representatives of the team

Building enterprise applications



Skill requirements to Build an Enterprise Application

Following are the key skill sets required to develop an enterprise application:

- Knowledge of organizational dynamics: understand the organizational business and business needs of end users.
- Domain knowledge: comes handy especially during inception, architecting and design and testing phase of applications.
- Business analysis skills: conglomeration of domain knowledge, technical knowledge, use of business analysis related tools and practice of soft skills.

Skill requirements to raise an Enterprise Application (contd...)

- Program management skills: includes planning, estimation, budgeting, talent management, change management, positive communication and many more

- Architecting and designing skills: includes the knowledge of architecture views and view points, architectural patterns, design patterns, design paradigms like object orientation, aspect orientation and service orientation, usage of design tools, architectural and design best practices, technical frameworks, knowledge of modeling languages like Unified Modeling Language, etc.

Skill requirements to raise an Enterprise Application (contd...)

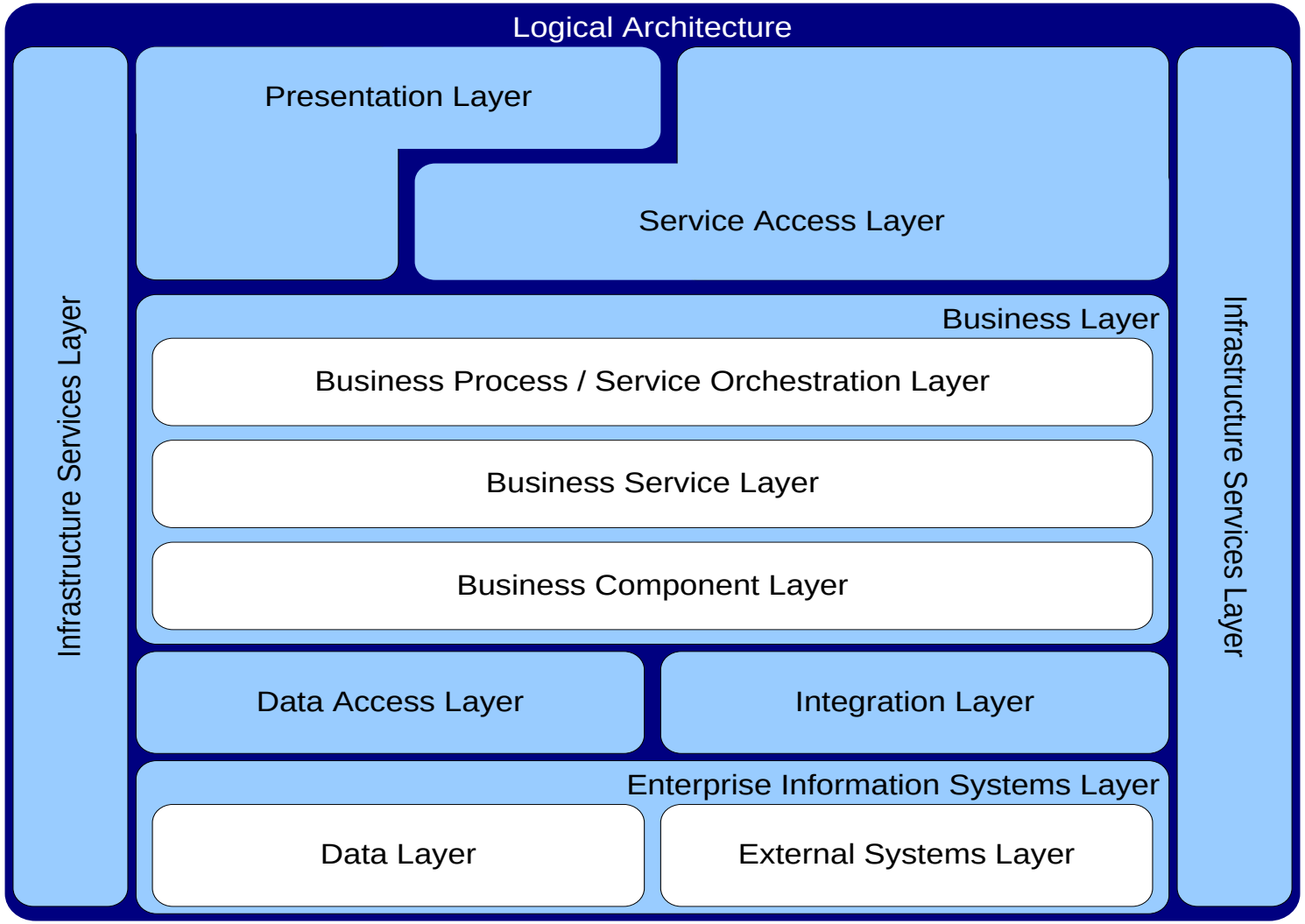
- Programming skills: includes knowledge of a programming language ,knowledge of the underlying platform, knowledge of an Integrated Development Environment (IDE) tool, programming best practices, code review skills, knowledge of unit testing tools, configuration management and build tools, static code analysis tools and dynamic code analysis tools etc.

- Testing skills: includes skills for performing integration testing, performance testing, load testing, stress testing, application security testing, interface testing and user acceptance testing.

- Knowledge of tools

Ingredients of Enterprise Application

Logical architecture – an overview



Logical architecture – layers

- **Business Layer:** Business layer can be considered to comprise of three sub layers to represent business processes, business services and business components.
  - Business Process represents the business processes implemented in the application.
  - Business processes, in turn, are composed from one or more business services and are represented in the Business Service Layer.
  - Business Component Layer represents the lowest level of abstraction of business layer in terms of underlying business entities.

Logical architecture – layers (Contd....)

- **Data Access Layer** and the **Integration Layer** provide the abstractions that hide the physical details of storage and access mechanisms from the business layer.
- **Presentation Layer** is used by the human users.
- **Service Access Layer** is used by the external systems to access the business processes or business services hosted by the enterprise application.
- **Infrastructure Services Layer** provides the reusable and general purpose components like logging, caching, auditing etc.

Measuring the success of Enterprise Applications

Once we are done with raising an enterprise application , we need to measure its success based on different parameters.

- **Effectiveness of the solution**
- **Quality of enterprise application in terms of non functional requirements.**
- **Time to production - faster the time to market , better for the organization**
- **Adherence to budget and timeliness.**
- **Cost effectiveness of application**
- **Productivity of development teams**

Summary

- Define enterprise applications & Classify enterprise applications
- Challenges in Building Enterprise Applications
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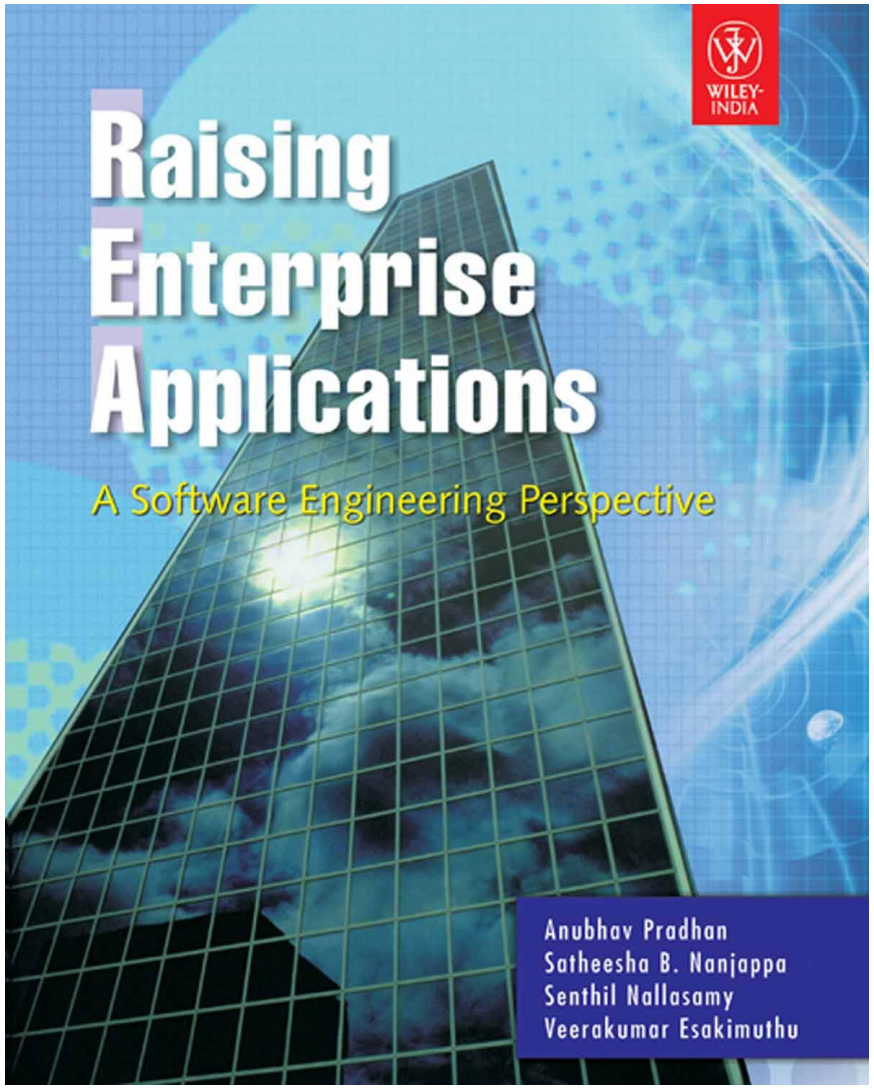

Book Details

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Thank You