

Lesson 1

Key-Terms for Applications, Services and Business Processes

Application

- Application software
- A collection of software components for an application
- Enables a user perform a group of coordinated activities, functions and tasks

IoT Application Examples

- Streetlights control and monitoring Application
- Application for tracking and inventory control using RFID device as tags on the parcels

IoT Application Examples

- Application for enabling a user withdrawal of cash using an ATM (Automatic Teller Machine)
- Automobile maintenance service
- An application for Health monitoring
- An application for Traffic lights control, their synchronisation and monitoring

IoT Applications Example

- An application for umbrella receiving weather information and sending warning messages for the weather
- An application for The waste container management

Service

- Enables use by interested application or clients
- A mechanism which enables the provisioning of access to one or more capabilities

Service

- An Interface provisioning for the the access to capabilities
- The access consistent with service description for the constraints and policies
- Enable application registration or subscription after a service level agreement

Service Capabilities

- Examples:
- Security provisioning
- bank transactions,
- device IDs management or tracking
- Devices location detection and tracking service

IoT Service Examples

- Home security breach detection and management service
- Waste container substitution service
- Health alerts service

Service Software

- A collection of self contained, distinct and reusable components for provisioning the logically grouped and encapsulated functionalities

Service Oriented Architecture (SOA)

- A software architecture model which consists of Services, Messages, Operations and Processes

SOA Components

- Distributed over a network or Internet in a high level business entity
- Used for developing for new business applications
- Used for developing an Applications Integration Architecture in an Enterprise

Message

- A communicating entity, such as data, piece of information

Operation

- Action or set of actions, for example, actions during a bank transaction

Transaction (trans + action)

- Two interrelated sets of operations or actions or instructions

Transaction Example 1

- A command 'connect' transferring from a database management system (DBMS) software to a Database, and Database in return connecting with the DBMS.

Transaction Example 2

- A query transferring from a system to a Database and
- Database in return transferring the answer to the query using the Database

Process

- A composition of a group of structured activities or tasks or services that leads to a particular goal
- Examples: Streetlights control process
- The purchase process of airline ticket

Process

- Specification of activities with relevance rules based on data or inputs in the process

Process matrix

- A multi-element entity
- Each element relating to a set of data or inputs to an activity (or subset of activities).

Business Process

- An activity or series of activities or a collection of interrelated structured activities, tasks or processes

Business Process

- Serving a particular goal or specific result or service or product
- A representation or *process matrix* or flowchart of a sequence of activities with interleaving decision points

Business Intelligence

- A process which enables a business service to extract new facts and knowledge and then undertake the better decisions
- The new facts and knowledge following from the earlier results of data processing, aggregation and analysis of the results.

Summary

We learnt

- Application and Applications Integration
- Service and SOA
- Transaction
- Process and Process Matrix
- Business Process and Business Intelligence

End of Lesson 1 on Key-Terms for Applications, Services and Business Processes