# Lecture 6.j
# In Class Test 1 Review
## Web Services Introduction

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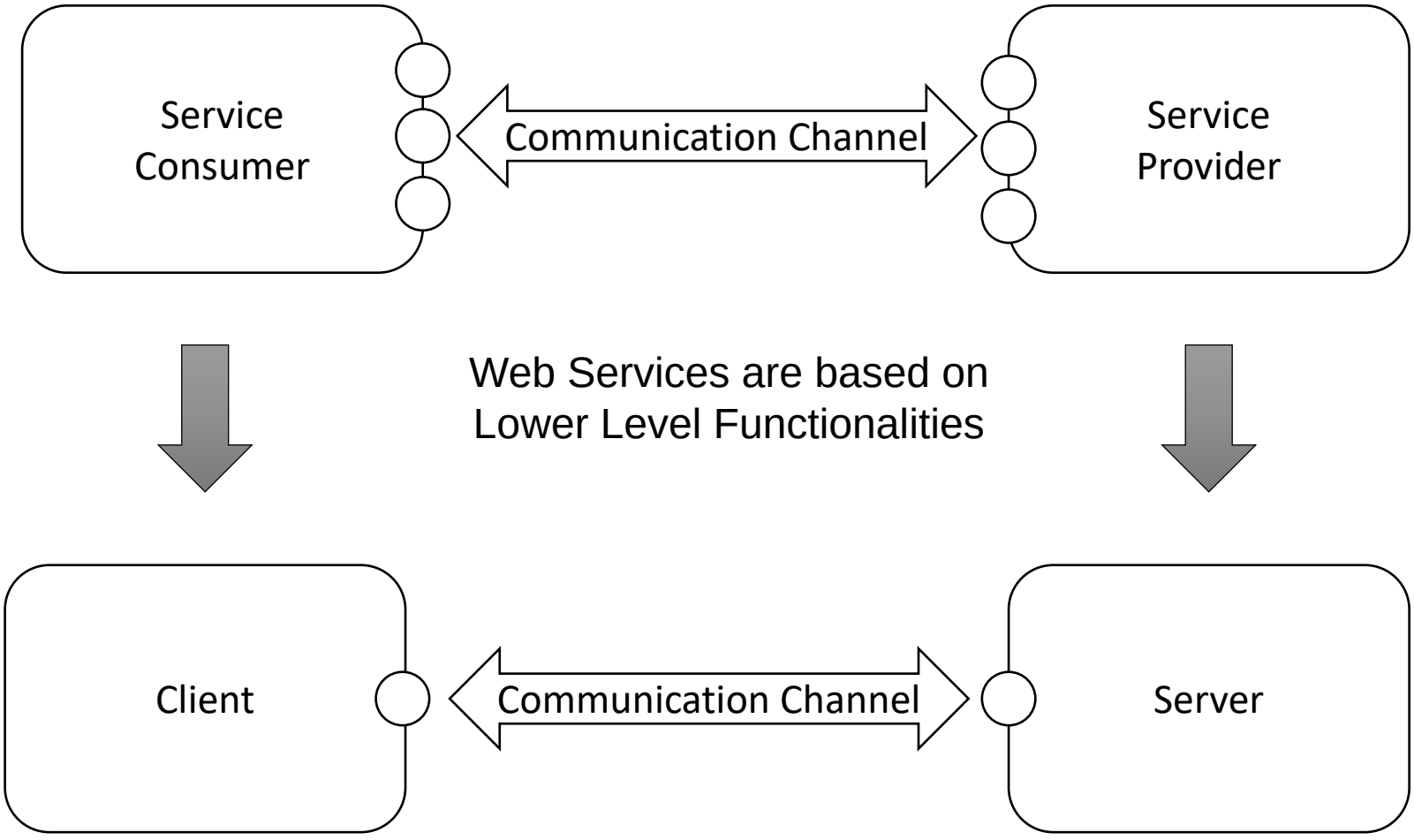
# Introduction

# Service Oriented Architecture



# Web Service

## Web Services

- **Software Applications, which are dynamic and adaptable to change and designed to support interoperable machine-to-machine (or program-to-program) interaction over a network**

- **Extensible Markup Language (XML) applications mapped to program objects, or databases or to comprehensive business functions**

# Web Service

## Web Services

- **Have modular, well-defined, encapsulated functions used for loosely coupled integration between applications or systems**
- **Have a loosely-coupled architecture contrary to applications, which are tightly-coupled collections of components well-known at development time**
- **Provide a uniform way to describe services in the network, to locate and access them**

# Web Service

## Web Services

- **Identified by a URI, whose public interfaces and bindings are defined and described using XML**
- **Its definition can be discovered by other applications that may interact with the Web Service as prescribed by its definition, using XML based messages**
- **Use an XML document as a message, a program sends a request to a Web service across the network, and optionally receives a reply as an XML document**

# Web Service

## Web Services

- **Use Standards to define the format of the message, specify the interface to which a message is sent, describe conventions for mapping the contents of the message in and out of the programs implementing the service, and define mechanisms to publish and to discover Web services interfaces**

- **Service consumers and providers exchange XML based messages using either REST or SOAP protocol:**
  - **Synchronous (RPC)**
  - **Asynchronous (messaging)**

# Service Oriented Architecture

# Web Service Example