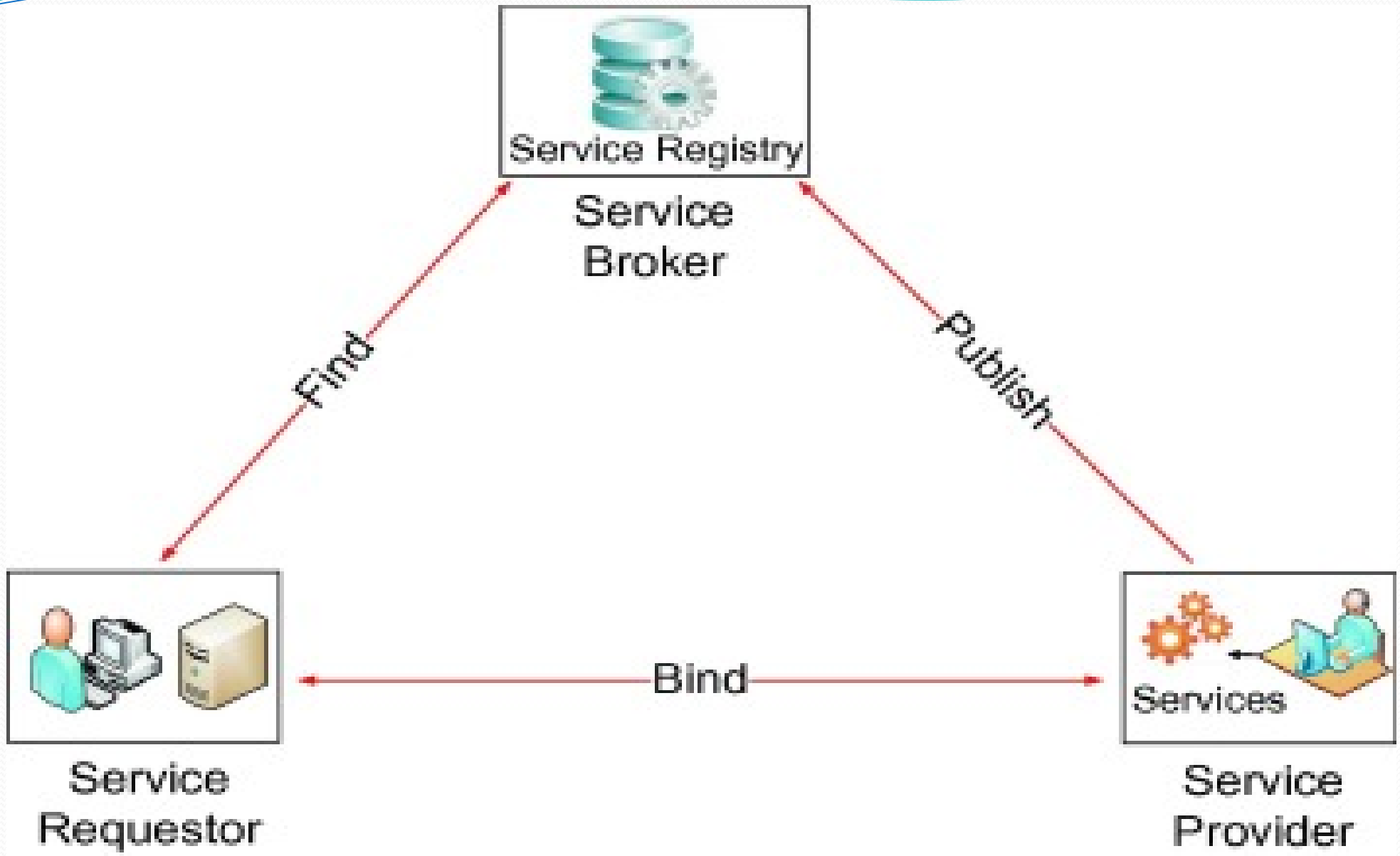
Service-Oriented Architecture (SOA)

- Service-Oriented Architecture (SOA) is a style of software design where services are provided to the other components by application components, through a communication protocol over a network.
- Its principles are independent of vendors and other technologies. In **service oriented architecture**, a number of services communicate with each other, in one of two ways: through passing data or through two or more services coordinating an activity.

- The building blocks of a service-oriented architecture are made up of 3 roles.
- **Service provider**
- A service provider creates web services and provides them to a service registry. The service provider is responsible for the terms of use of the service.
- **Service broker or service registry**
- A service broker or service registry is responsible for providing information about the service to a requester. A broker may be public or private.
- **Service requester or service consumer**
- A service requester finds a service in a service broker or service registry and then will connect with the service provider to receive the service.


Service Registry
Service
Broker
Find
Publish
Bind
Services
Service
Requestor
Service
Provider

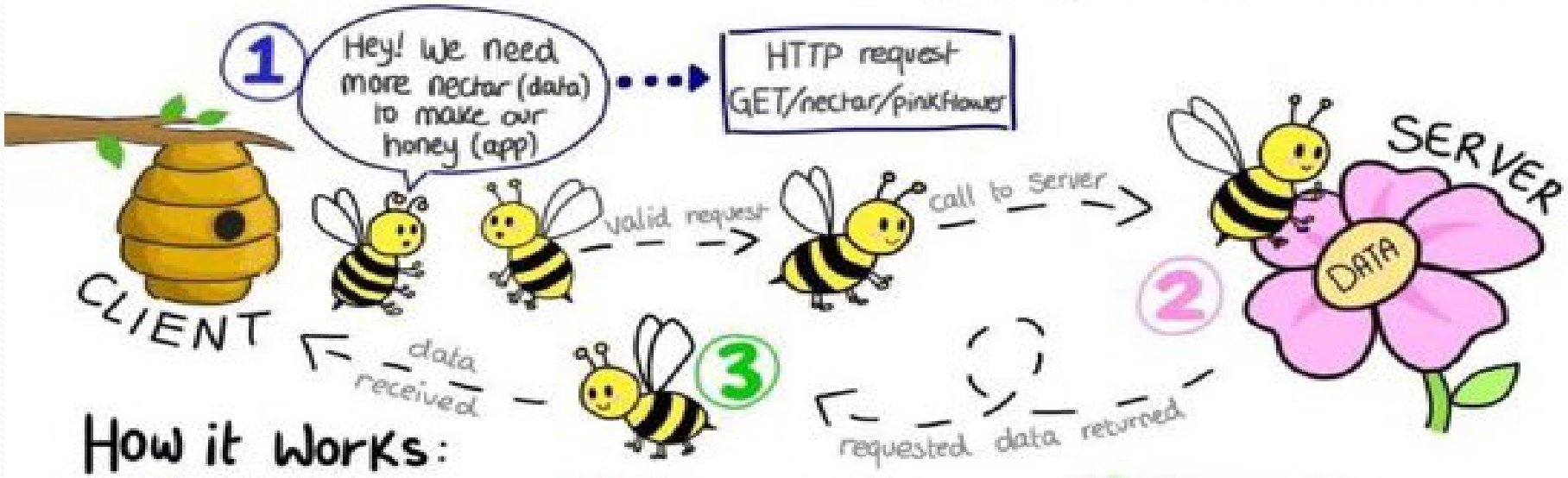
Implementing Service-Oriented Architecture

- When it comes to implementing service-oriented architecture (SOA), there is a wide range of technologies that can be used, depending on what your end goal is and what you're trying to accomplish.
- Typically, Service-Oriented Architecture is implemented with web services, which makes the "functional building blocks accessible over standard internet protocols."
- An example of a web service standard is **SOAP**, which stands for Simple Object Access Protocol. In a nutshell, SOAP "is a messaging protocol specification for exchanging structured information in the implementation of web services in computer networks.
- Although SOAP wasn't well-received at first, since 2003 it has gained more popularity and is becoming more widely used and accepted. Other options for implementing Service-Oriented Architecture include Jini, COBRA, or REST.

What is an API?

@Rapid_API

An application programming interface allows two programs to communicate. On the web, APIs sit between an application and a web server, and facilitate the transfer of data.



How it Works:

1 Request
API call is initiated by by the Client application via a HTTP request

2 Receive
Our worker bee acts as an API, going to a flower (server) to collect nectar (data)

3 Response
The API transfers the requested data back to the requesting application, usually in JSON format