Agent & Messaging

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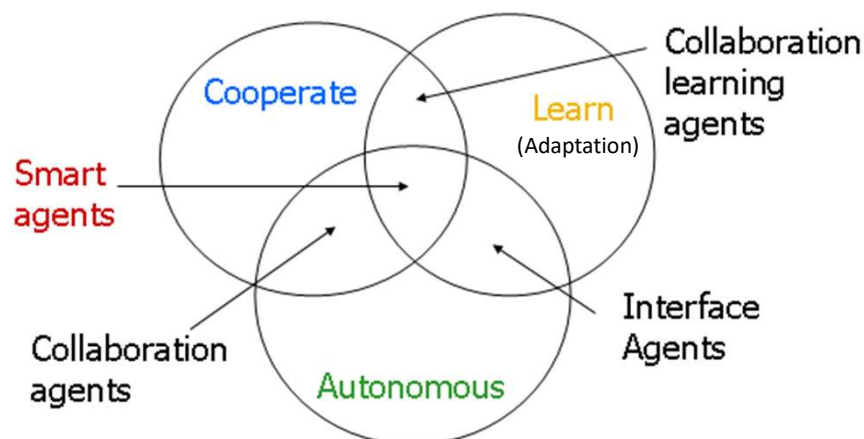
Software Agent

A software agent is an piece of software that functions as an agent for a **user** or **another program**, working **autonomously** and continuously in a particular environment. It is inhibited by other processes and agents, but is also able to **learn** from its experience in functioning in an environment over a long period of time.
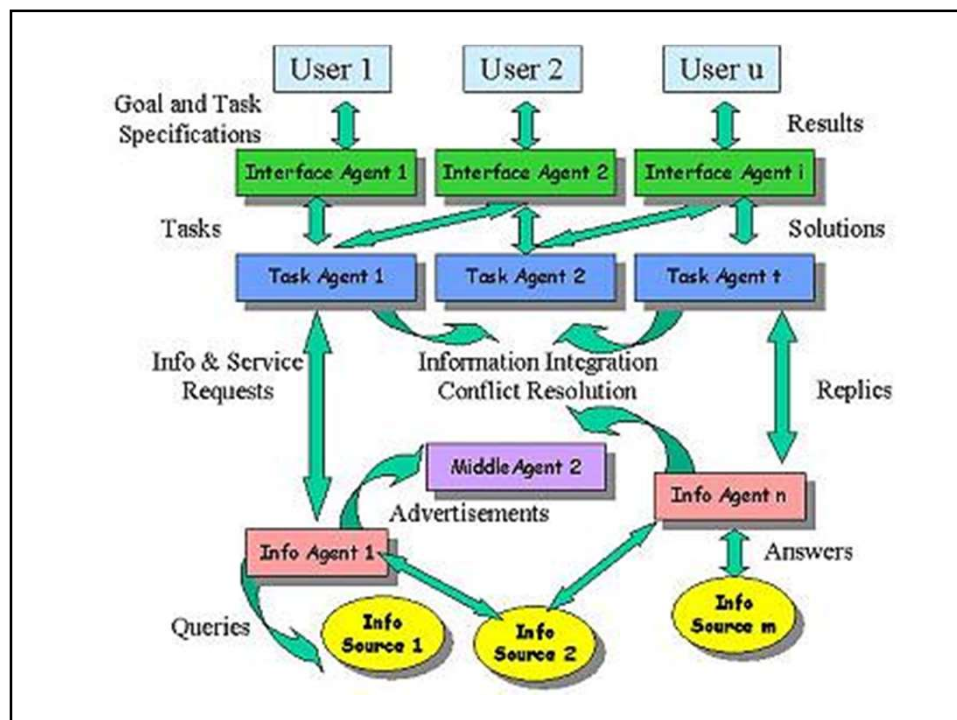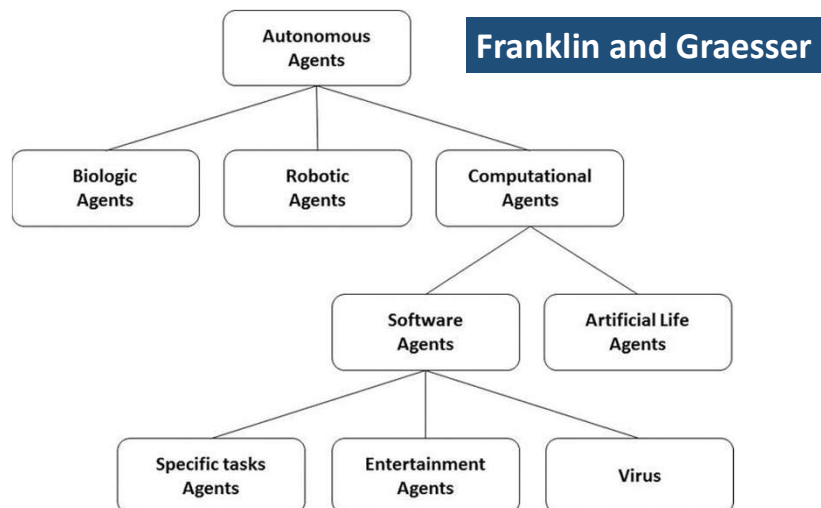
Software Agent

Based on Nwanna's primary attribute dimension

Software Agent

Franklin and Graesser

Autonomous Agents
- Biologic Agents
- Robotic Agents
- Computational Agents
  - Software Agents
    - Specific tasks Agents
    - Entertainment Agents
    - Virus
  - Artificial Life Agents

User 1   User 2   User u

Goal and Task Specifications — Results

Interface Agent 1   Interface Agent 2   Interface Agent i

Tasks — Solutions

Task Agent 1   Task Agent 2   Task Agent t

Info & Service Requests   Information Integration Conflict Resolution   Replies

Middle Agent 2

Advertisements

Info Agent n

Info Agent 1

Answers

Queries

Info Source 1   Info Source 2   Info Source m

Examples

- Google uses software agents (spiders/robots) to periodically visit web sites to index them in google search engine. An e commerce agent finds the best price for a phone model on e commerce sites

- A chatbot is a a computer program designed to simulate an intelligent conversation with human users. Most chat bots simply scan for keywords within the input and pull a reply with the most matching answer from a database.

Messaging

Instant messaging (IM) technology is a type of online chat that offers real-time text transmission over the Internet. A LAN messenger operates in a similar way over a local area network. Short messages are typically transmitted between two parties, when each user chooses to complete a thought and select "send". Some IM applications can use **push technology** to provide real-time text. More advanced instant messaging can add file transfer, clickable hyperlinks, Voice over IP, or video chat.

Messaging Protocols

Protocol	Publisher
IRC	Jarkko Oikarinen
MSNP	Microsoft
OSCAR (AIM, ICQ)	AOL
Signal Protocol	**Signal Messenger**

Protocol	Publisher
SMS/MMS /EMS/Call	**Friedhelm Hillebrand**
Skype	Skype
YMSG	Yahoo!
Gadu-Gadu	GG Network

Messaging Clients

Client	Creator
AOL Instant Messenger (AIM)	AOL
Google Allo	Google, Inc.
ICQ	Mail.Ru
Facebook Messenger	Facebook, Inc.

Client	Creator
Line	LINE Corporation
WeChat / QQ	Tencent Holdings
Skype	Skype Technologies
FaceTime	Apple Inc.

Firebase

Firebase is Google's mobile platform that helps you quickly develop high-quality apps and grow your business.
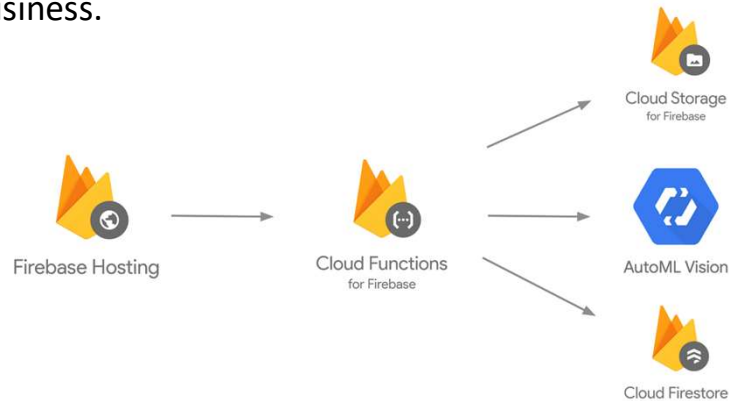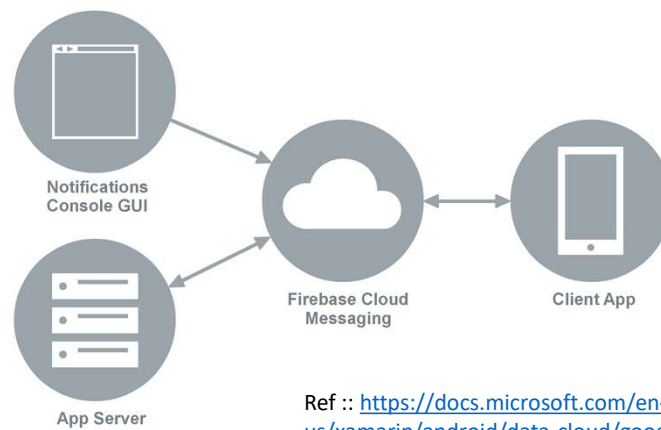

Firebase Cloud Messaging

Firebase Cloud Messaging (FCM) is a cross-platform service that handles the **sending, routing,** and **queueing** of messages between server applications and mobile client apps. FCM is the successor to Google Cloud Messaging (GCM), and it is built on **Google Play Services.**
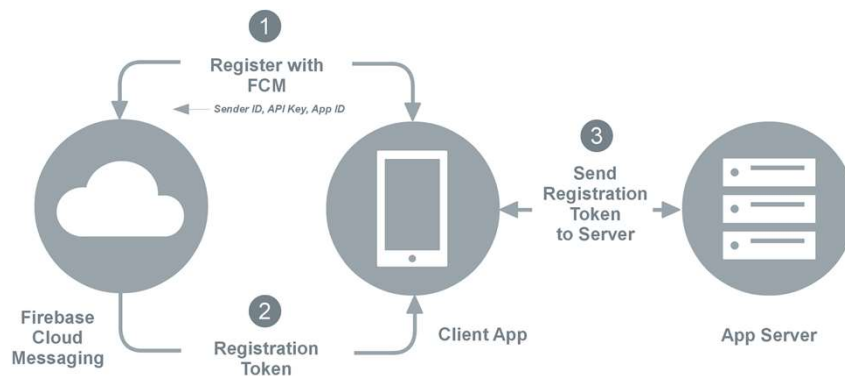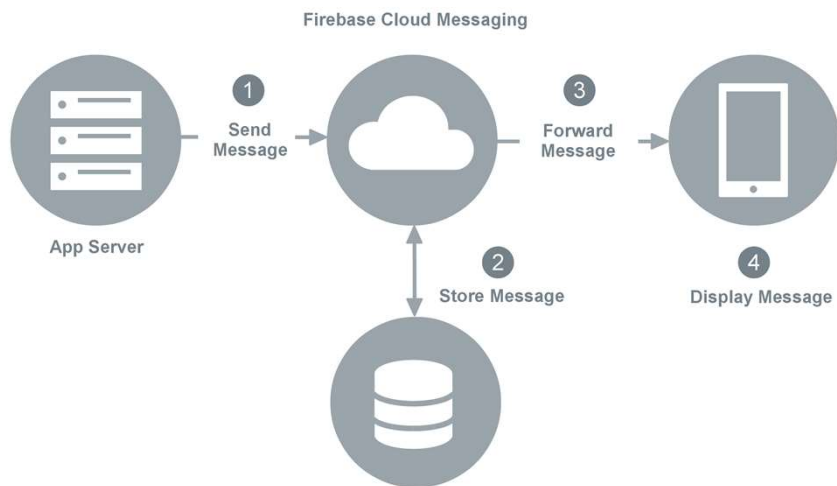
FCM Architecture

Ref ::

Registration

Sender ID	**:** 496915549731
API Key	**:** AJzbSyCTcpfRT1YRqbzjIwp1h06YdauvewGDzk.
App ID	**:** 1:415712510732:android:0e1eb7a661af2460
Registration Token	: fkBQTHxKKhs:AP91bHuEedxM4xFAUn0z ... dsaeZ (a very long string).

Downstream messaging

Firebase Cloud Messaging

1 Send Message

2 Store Message

3 Forward Message

4 Display Message

App Server

Topic messaging

FCM

Client App

App Server

1 Subscribe to Topic

3 Forward Message to Client

2 Broadcast Message to Subscribed Clients

Q & A