Watson Build 2018

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Think.
Build.
Showcase.

IBM

Watson is AI for smarter business

Watson Business Solutions				Watson Applications			

Applications, solutions and services
Targeted solutions for enterprise businesses

Compliance Assist	Customer Care	Expert Assist	Voice of the Customer	Watson Security	Watson Financial Services	Watson Compare and comply	ISV and 3rd party apps

AI – Watson APIs
Building blocks for developers

Assistant	Discovery	Text to Speech	Personality Insights	Tone Analyzer	...more
Visual Recognition	Speech to Text	Nat Language Understanding	Nat Language Classifier	Language Translator	

API · API · API · API · API

Data – Watson Studio
Tools to prepare data for AI

Connect and access data	→	Search and find relevant data	→	Prepare data (ingest, curate and enrich)	→	Build and train AI models	→	Deploy AI models	→	Monitor, analyze and manage

Watson Machine Learning and Deep Learning as a Service

Cloud – Infrastructure
A highly scalable, security enabled infrastructure

Cloud integration		Micro-services			DevOps Tooling	
Networking	Compute	Security	Containers	Virtual Servers	Object Storage	...more

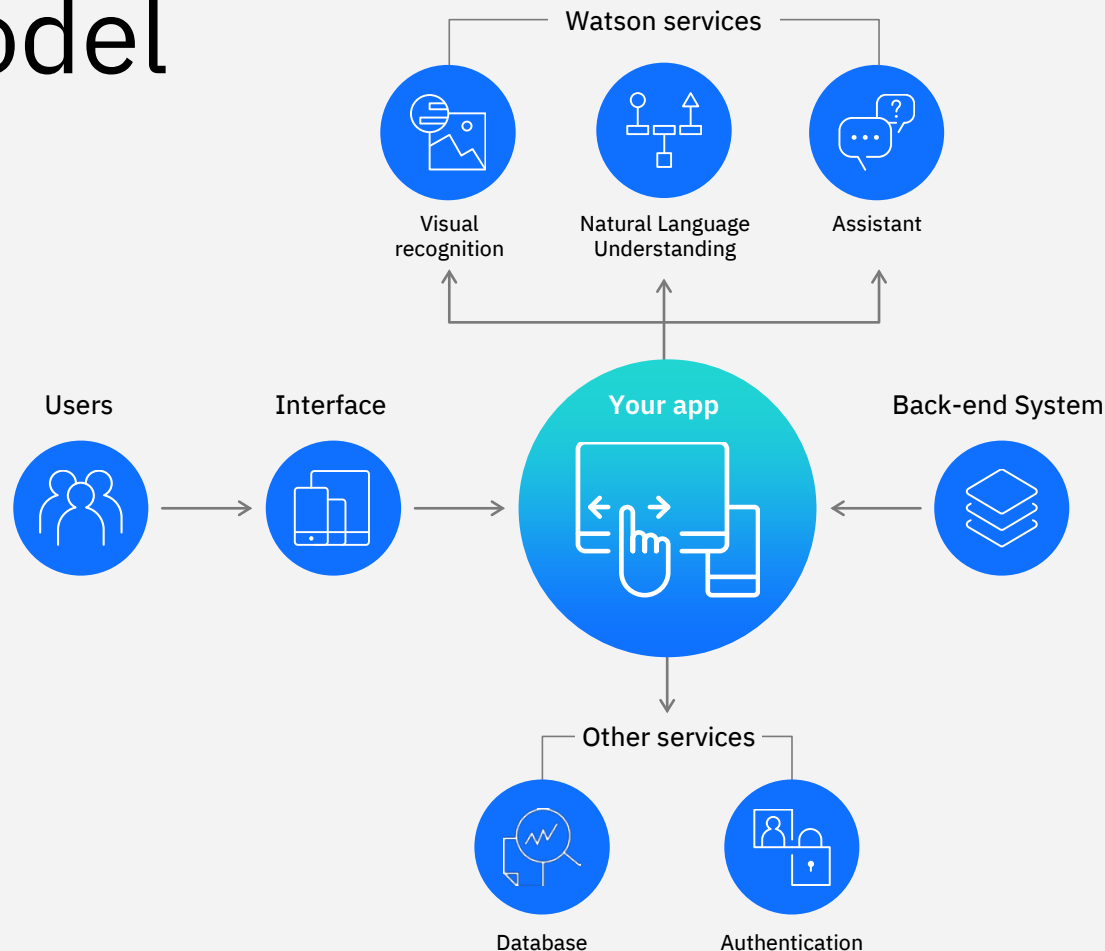| Public	Hybrid	Private

What are
Watson APIs?

– **A collection of (mostly) cloud services for developing Enterprise AI solutions**
Protects your insights

– **Services can be trained using custom models**
Learn more with less data

– **Each service has a RESTful API**
Usable from virtually any language/platform

– **Provisioned at IBM Cloud**

– **http://ibm.com/watson**
Demos, documentation, API reference, sample apps, SDKs

– **https://developer.ibm.com/code/patterns/**
Comprehensive AI code patterns
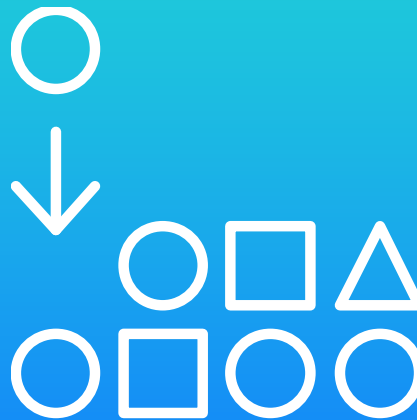
Execution model

A main application

– Hosted on IBM Cloud

– Running on servers that you manage

Watson services

Visual recognition

Natural Language Understanding

Assistant

Users

Interface

Your app

Back-end System

Other services

Database

Authentication

Watson APIs

Watson Assistant

Language Translator

Speech to Text

Tone Analyzer

Natural Language Understanding

Natural Language Classifier

Personality Insights

Visual Recognition

Discovery

Text to Speech

Assistant

- Add a natural language interface to your application to automate interactions with your end users

- Chat bots, virtual agents etc.

- Train using web tool to define intents, entities, and dialog

- Pre-built intents/entities for customer service and industry specific use cases

Natural Language Understanding

– NLU for Advanced Text Analytics

– Extracts meta-data from content including concepts, entities, keywords, categories, sentiment, emotion, relations and semantic roles

Example:

– Taxonomy (**horticulture**)

– Concepts (**farming**)

– Keywords (**tomatoes**)

– Entities (**Best-Gro Seed Company**)

– Relationships (**Best-gro**, **acquisitions**, **private farms**)

– Options for customization to specific industries and domains. Train using Watson Knowledge Studio. SMEs do not require NLP expertise

Discovery

– Identifying useful patterns and insights in structured or unstructured data

– APIs and tools to build a pipeline for ingesting, storing and enriching data – less **data janitor** work

– Ingest, Normalize, Enrich, Query, Analyze

– Compare & Comply Element Classification Enrichment for legal documents

– Query metadata across all your documents, IBM provided sources (e.g. News), and external sources via an API

– Rank most relevant documents

Language Translator

- Translate documents from one language to another (supports 16 languages)

- Language identification (supports 62 languages)

- Some languages uses Neural Machine Translation, since Q12018

- Support specific domains for News, Patents or Conversations
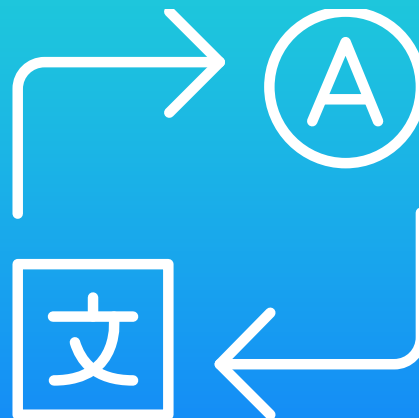
Natural Language Classifier

– Return the best matching classes for a sentence or phrase

– Create a classifier instance by providing a set of representative strings and a set of one or more correct classes for each training string
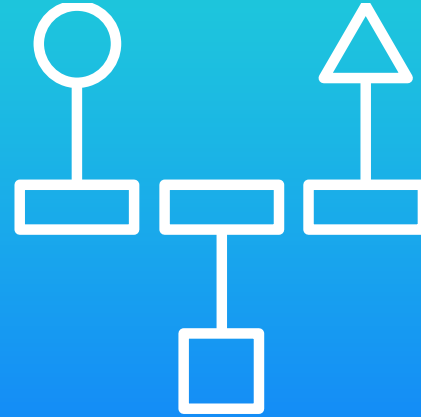
Text to Speech

- Processes natural language text to generate synthesized audio

- TTS customization API (BETA)

Speech to Text

– Converts the human voice into the written word

– Works in real time, provides meta data

– Keyword Spotting

– Speaker Diarization

– Add training data for domain specific words

Personality Insights

– Creates a personality profile based on text

Analyses:

– **Big five** personality dimensions (agreeableness, conscientiousness, extraversion, emotional range, cooperation)

– Needs (excitement, harmony, stability, challenge)

– Values (helping others, hedonism, open to change etc.)

– Determine purchase decisions, intent and behavioral traits

– Is this a good candidate for the job? Should I offer a promotion on product X?
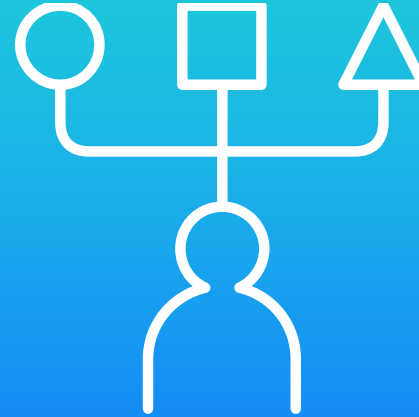
Tone Analyzer

– Uses linguistic analysis to detect three tones from text:

– Emotion (joy, sadness, fear etc.)

– Language style (analytical, confident, tentative)

– Social Tendencies (openness, extraversion, agreeableness etc.)

– Refine and improve communications – If I respond to a customer query like this, how will I be perceived?

Visual Recognition

– Analyze images for scenes, objects, faces, colors and other content

– Available models: general, face, food (beta), explicit (beta), text (beta)

– Custom classifiers