

Google Home Final Presentation

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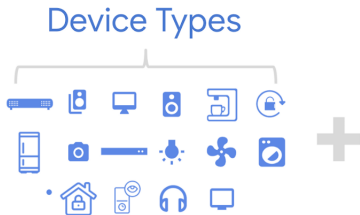
University of Innsbruck - SIT

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- 1 Overview
- 2 Execution Path
 - Intents
 - Entities
 - Architecture
- 3 Sparql Queries
- 4 Problems
- 5 Live Demo



- Founded by Google in 2016
- Development through Googles developer console and Dialogflow
- Creating skills pretty easy
- No programming skills required



Traits

Attributes - SYNC

Defines configuration options for traits.

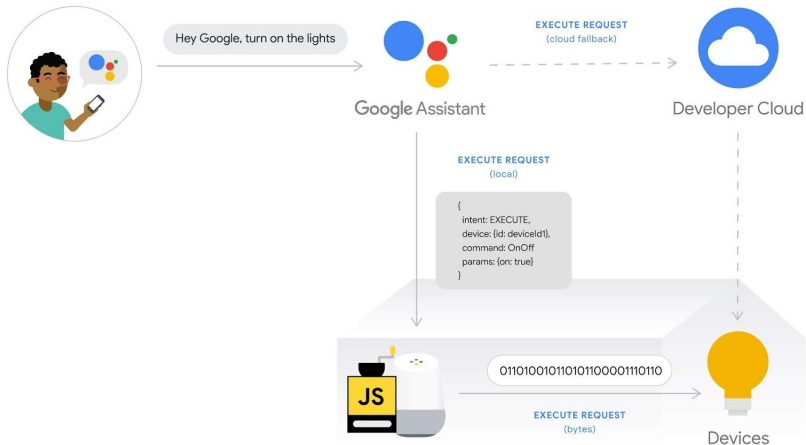
States - QUERY & EXECUTE

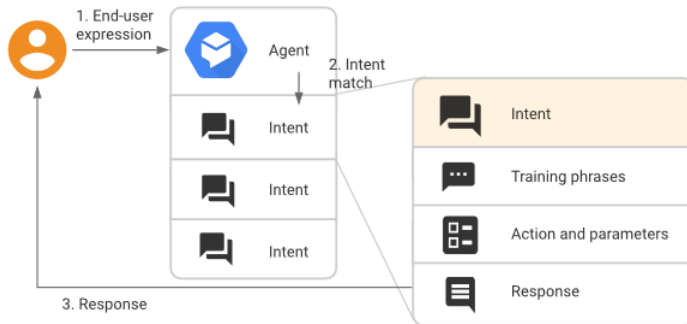
Defines the real-time state of the device.

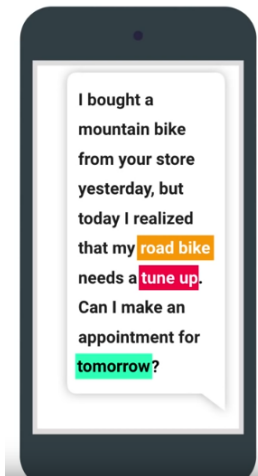
Commands - EXECUTE

Used to change the state or perform a function on the device.

- Various device types (air purifier to yogurt maker)
- Capabilities of a device \Rightarrow traits







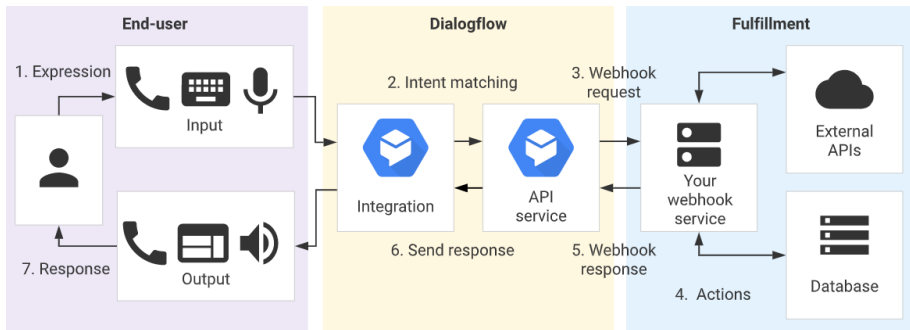
I bought a mountain bike from your store yesterday, but today I realized that my **road bike** needs a **tune up**. Can I make an appointment for **tomorrow**?

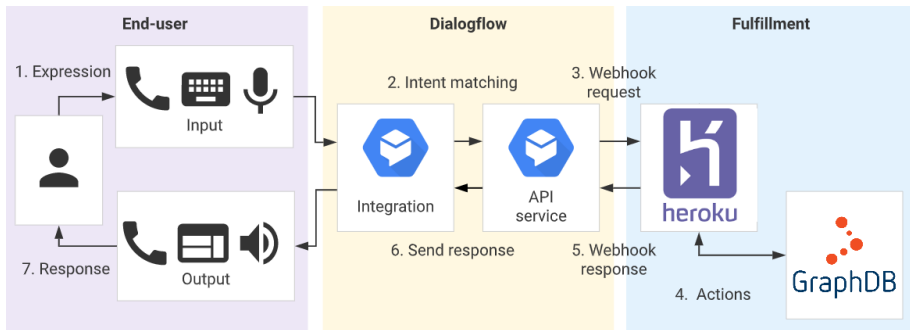
road bike
tune up
 tomorrow
 2017-11-09

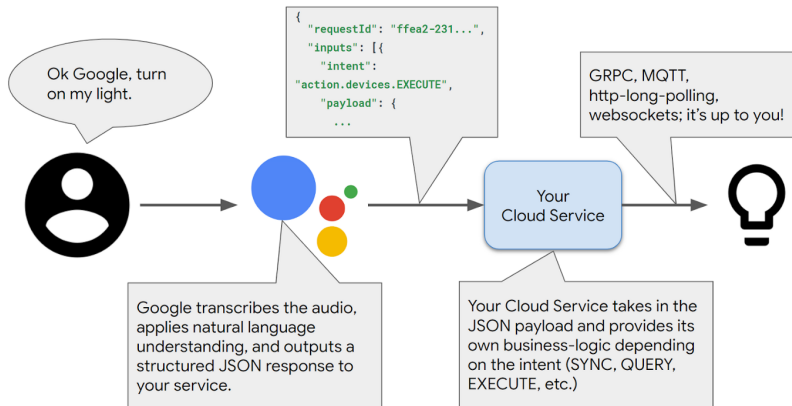
System entities
 @sys.time
 @sys.date

Developer entities
 @service-option
 • Tune up
 • Repair
 • Tire change
 • Upgrade

@bike-type
 • Road bike
 • Mountain bike
 • Beach cruiser
 • Racing bike
 • Fixed gear bike
 • Cross bike







What Type Question

```
PREFIX schema: <http://schema.org/>
```

```
PREFIX kgbs: <http://knowledgegraphbook.ai/schema/>
```

```
select ?description ?purpose where {  
  {  
    ?Concept schema:name ?name.  
    OPTIONAL { ?Concept schema:description ?description . }  
    OPTIONAL { ?Concept kgbs:purpose ?purpose . }  
    filter (LCASE(?name) = LCASE("${parameter}"))  
  }  
  union  
  {  
    ?Concept schema:alternateName ?name.  
    OPTIONAL { ?Concept schema:description ?description . }  
    OPTIONAL { ?Concept kgbs:purpose ?purpose . }  
    filter (LCASE(?name) = LCASE("${parameter}"))  
  }  
}
```

Difference Type Question

```
PREFIX schema: <http://schema.org/>
```

```
PREFIX kgb: <http://knowledgegraphbook.ai/schema/>
```

```
select ?description where {  
  {  
    ?Concept schema:name ?name  
    OPTIONAL {?Concept kgb:differsFrom ?relatesTo.}  
    OPTIONAL {?relatesTo schema:description ?description.}  
    filter (LCASE(?name) = LCASE("${first_parameter}") || LCASE(?name) = LCASE("${second_parameter}"))  
  }  
  UNION  
  {  
    ?Concept schema:alternateName ?name  
    OPTIONAL {?Concept kgb:differsFrom ?relatesTo.}  
    OPTIONAL {?relatesTo schema:description ?description.}  
    filter (LCASE(?name) = LCASE("${first_parameter}") || LCASE(?name) = LCASE("${second_parameter}"))  
  }  
}
```

```
PREFIX schema: <http://schema.org/>
PREFIX kgbs: <http://knowledgegraphbook.ai/schema/>
PREFIX skos: <http://www.w3.org/2004/02/skos/core#>

select ?description where {
  {
    ?Concept schema:name ?name
    OPTIONAL {?Concept skos:narrower ?specialization.}
    OPTIONAL {?specialization schema:name ?description.}
    filter (LCASE(?name) = LCASE("${parameter}")) .
  }
  union
  {
    ?Concept schema:alternateName ?name
    OPTIONAL {?Concept skos:narrower ?specialization.}
    OPTIONAL {?specialization schema:name ?description.}
    filter (LCASE(?name) = LCASE("${parameter}")) .
  }
}
```

Example Type Question

```
PREFIX schema: <http://schema.org/>
PREFIX skos: <http://www.w3.org/2004/02/skos/core#>
select ?description where {
  {
    ?Concept schema:name ?name.
    optional { ?Concept skos:example ?example . }
    optional { ?example schema:description ?description . }
    filter (LCASE(?name) = LCASE("${parameter}"))
  }
  UNION
  {
    ?Concept schema:alternateName ?name.|
    optional { ?Concept skos:example ?example . }
    optional { ?example schema:description ?description . }
    filter (LCASE(?name) = LCASE("${parameter}"))
  }
}
```

```
PREFIX schema: <http://schema.org/>
PREFIX kgbs: <http://knowledgegraphbook.ai/schema/>

select ?description where {
  {
    ?Concept schema:name ?name .
    ?Concept schema:step: ?Object .
    OPTIONAL { ?Object schema:text ?description . }
    filter contains (LCASE(?name), LCASE("${parameter}")) .
  }
  UNION
  {
    ?Concept schema:alternateName ?name .
    ?Concept schema:step: ?Object .
    OPTIONAL { ?Object schema:text ?description . }
    filter contains (LCASE(?name), LCASE("${parameter}")) .
  }
}
```

- Changing namespaces of Graph DB
- No javascript library for GraphDB with authentication

Live Demo

Thank you for your
attention!