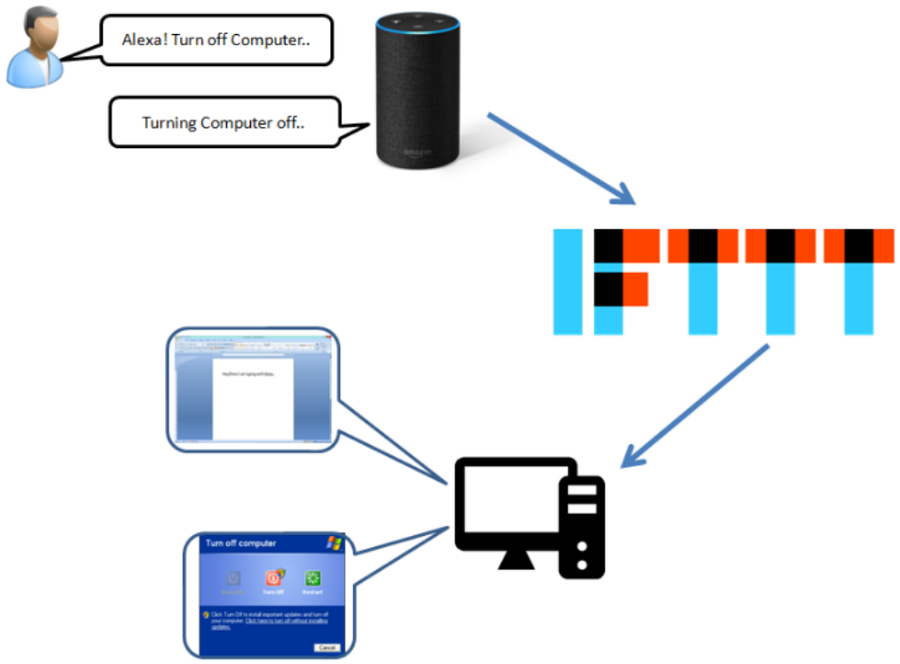

Control your PC

Special topics in Advanced Networks with Dr. Y. Liu

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Motivation

- Less infrastructure cost
- Automation
- Realtime notifications and analysis

Project Setup

Software's:

Applets:

- IFTTT
- PushBullet
- Tasker
- DialogFlow

Languages:

- Php and Python

Hardware:

- DELL Laptop
- Apple MAC Book Pro
- HP Laptop

Implementation

IFTTT and Pushbullet:

- General computer operations with backend PHP scripts (e.g. open word, type in word, sleep)

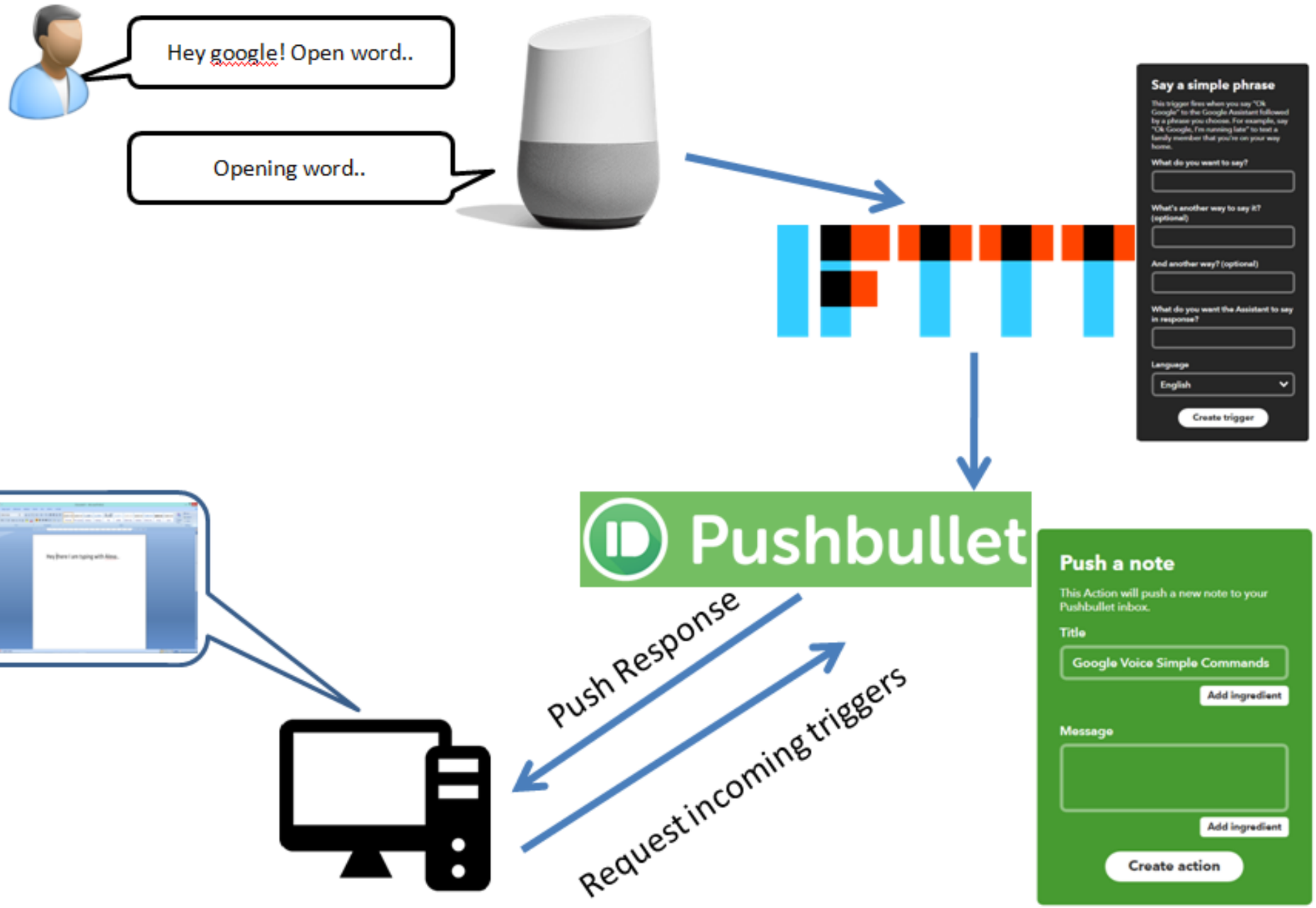
Tasker:

- Wake up Computer on LAN

Dialogflow:

- Customized interactions to perform computer operations with backend Python script
- Control multiple PCs

IFTTT and Pushbullet



Running PHP script

A Web App Approach..

Control Your PC

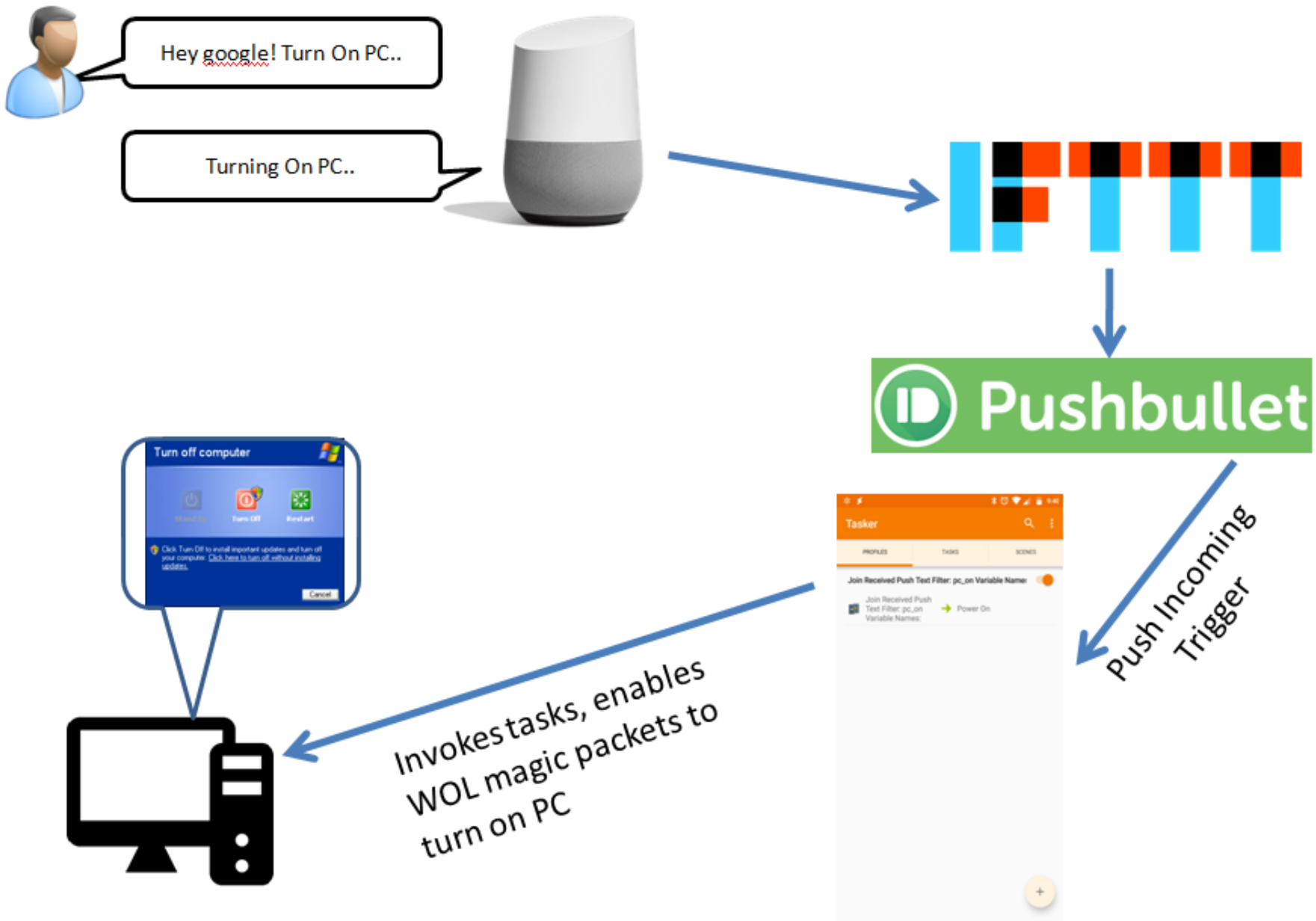
Control your complete PC or laptop functionalities such as Turn on/off, open any file or document, using smart speakers such as Amazon Alexa, Google Home, Google Mini, Google Max or smart phone running Google Assistant.

Notifications::

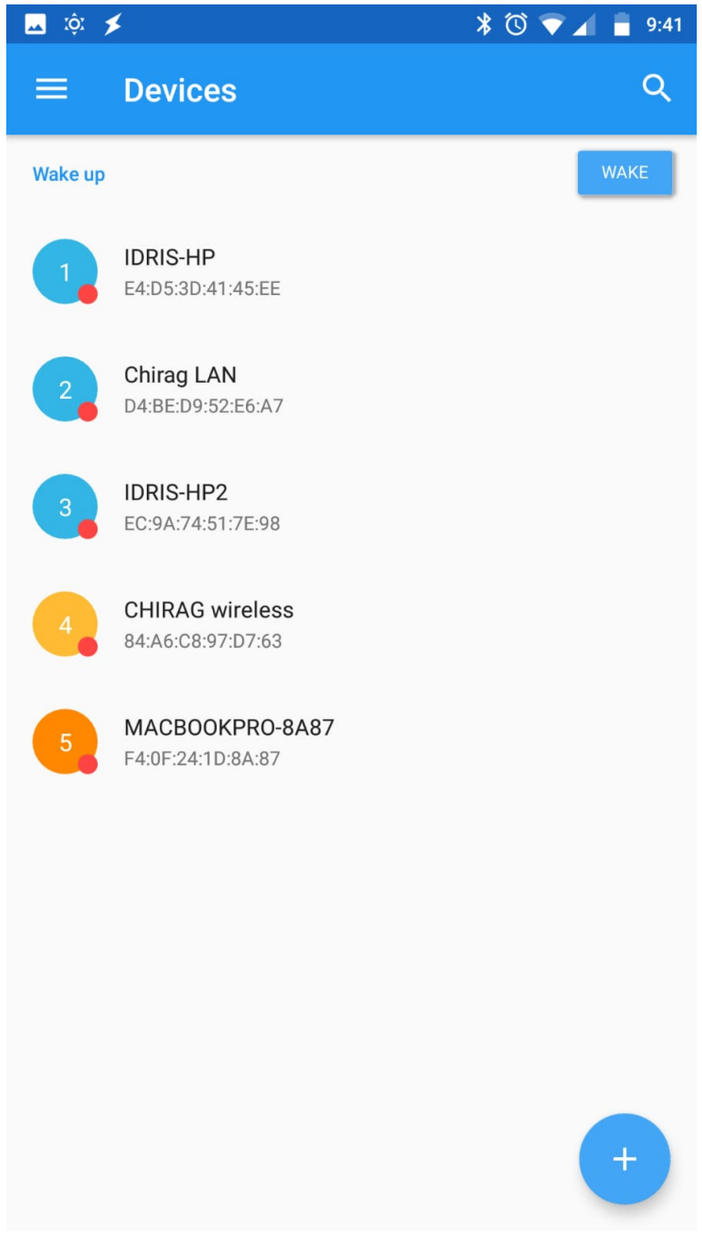
Incoming Push ...

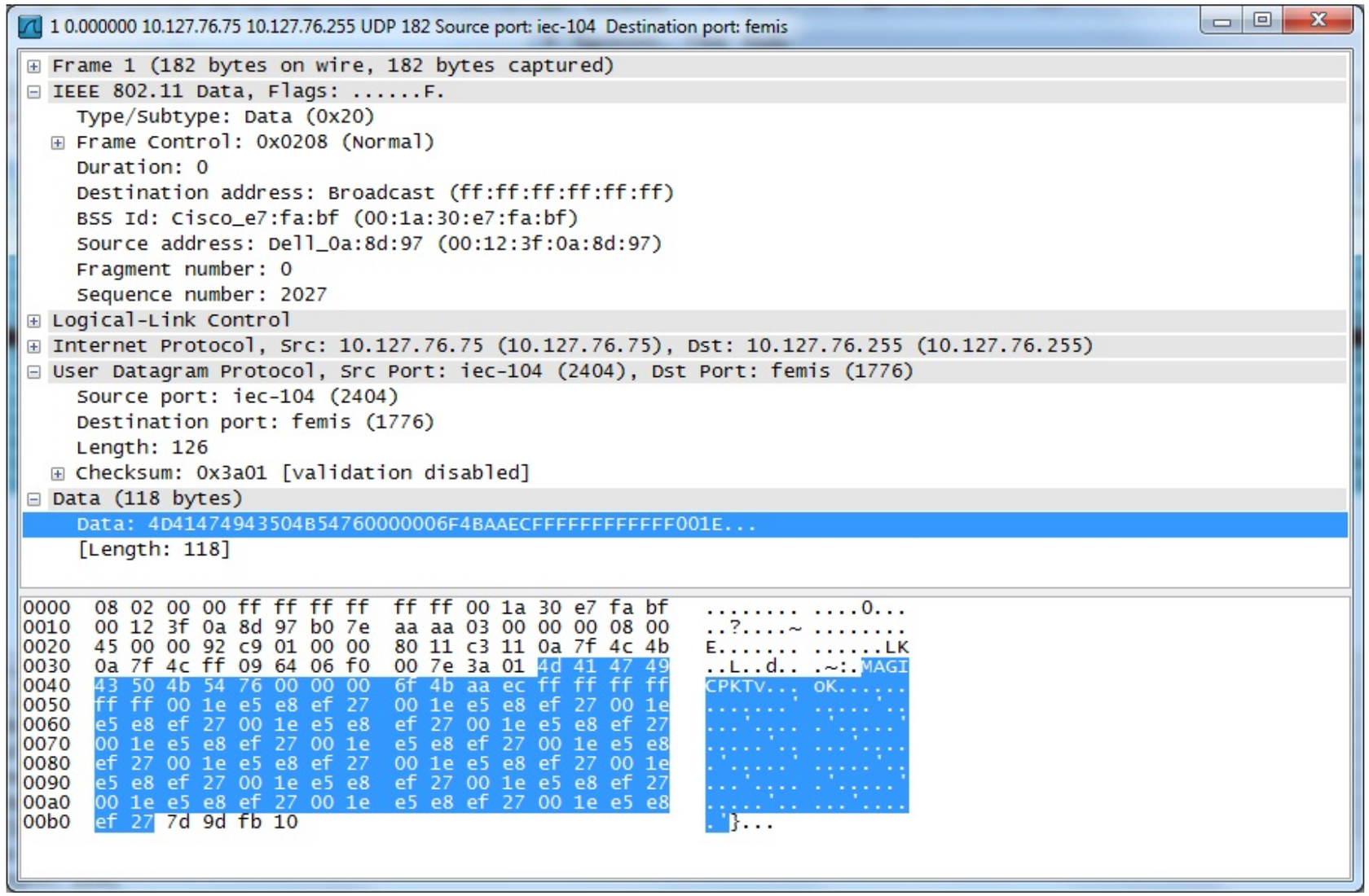
Command: open

Tasker

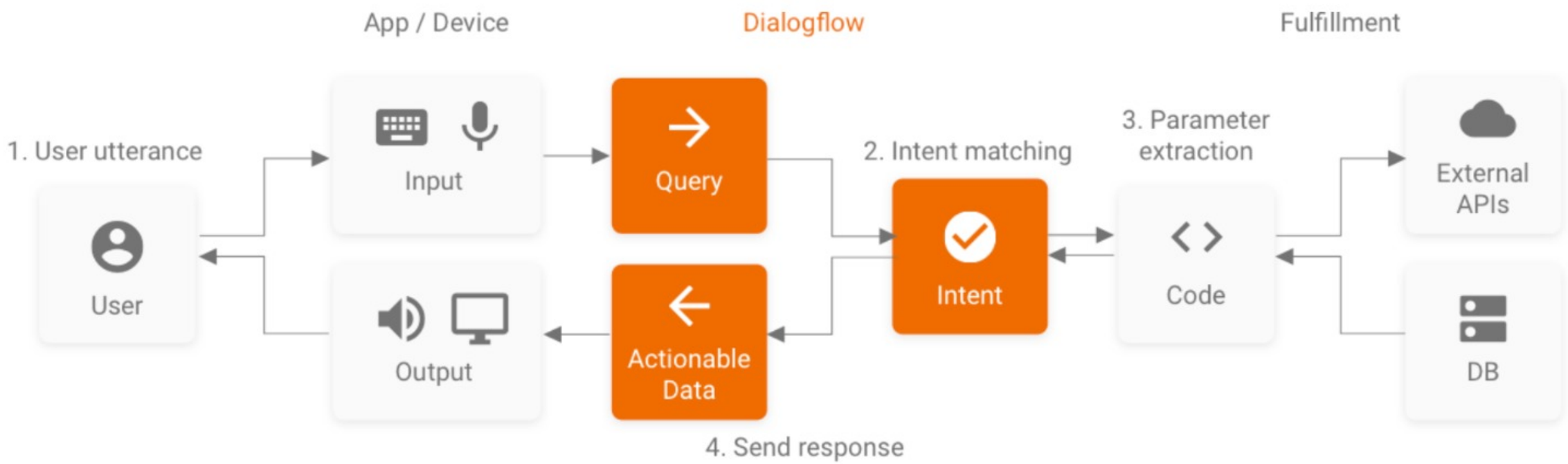

Hey google! Turn On PC..
Turning On PC..
IFTTT
Pushbullet
Turn off computer
Tasker
Push Incoming Trigger
Invokes tasks, enables WOL magic packets to turn on PC

Wake on LAN

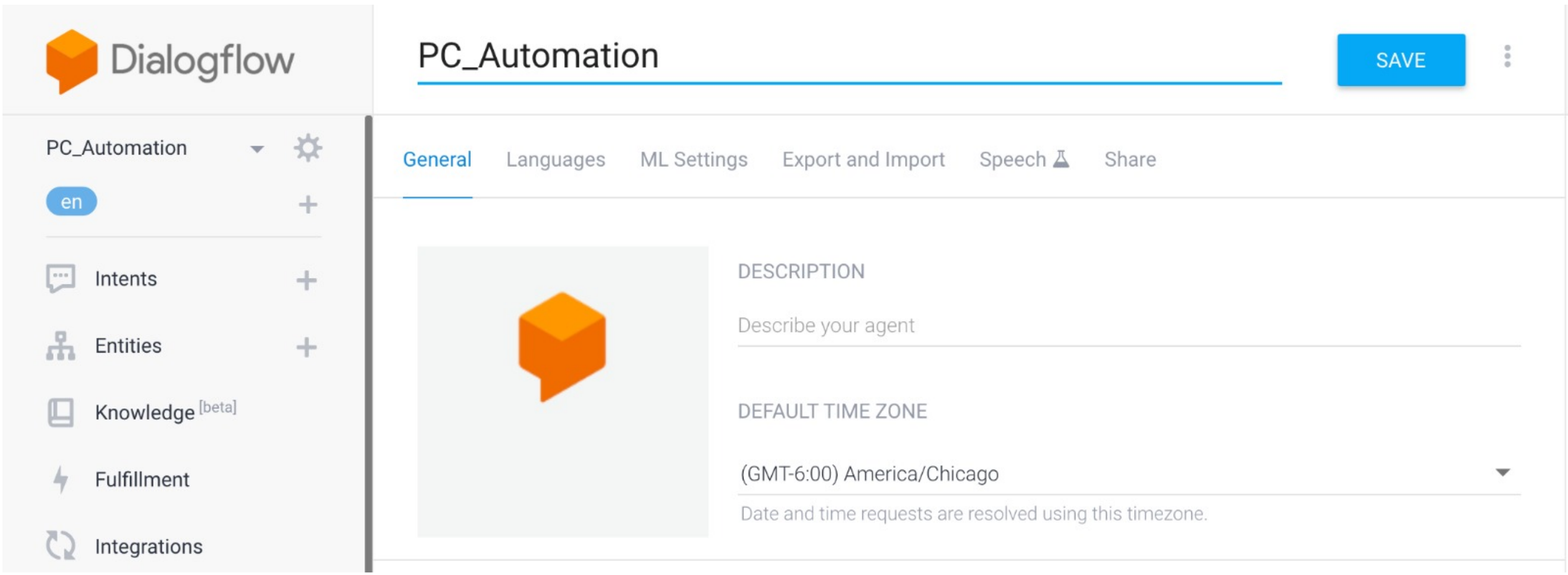

9:41
Devices
Wake up
WAKE
1
IDRIS-HP
E4:D5:3D:41:45:EE
2
Chirag LAN
D4:BE:D9:52:E6:A7
3
IDRIS-HP2
EC:9A:74:51:7E:98
4
CHIRAG wireless
84:A6:C8:97:D7:63
5
MACBOOKPRO-8A87
F4:0F:24:1D:8A:87
+


1 0.000000 10.127.76.75 10.127.76.255 UDP 182 Source port: iec-104 Destination port: femis
Frame 1 (182 bytes on wire, 182 bytes captured)
IEEE 802.11 Data, Flags: ......F.
Type/Subtype: Data (0x20)
Frame Control: 0x0208 (Normal)
Duration: 0
Destination address: Broadcast (ff:ff:ff:ff:ff:ff)
BSS Id: Cisco_e7:fa:bf (00:1a:30:e7:fa:bf)
Source address: Dell_0a:8d:97 (00:12:3f:0a:8d:97)
Fragment number: 0
Sequence number: 2027
Logical-Link Control
Internet Protocol, Src: 10.127.76.75 (10.127.76.75), Dst: 10.127.76.255 (10.127.76.255)
User Datagram Protocol, Src Port: iec-104 (2404), Dst Port: femis (1776)
Source port: iec-104 (2404)
Destination port: femis (1776)
Length: 126
Checksum: 0x3a01 [validation disabled]
Data (118 bytes)
Data: 4D41474943504B54760000006F4BAAECFFFFFFFFFFFF001E...
[Length: 118]
0000 08 02 00 00 ff ff ff ff ff ff 00 1a 30 e7 fa bf ....0...
0010 00 12 3f 0a 8d 97 b0 7e aa aa 03 00 00 00 08 00 ..?....~ ....
0020 45 00 00 92 c9 01 00 00 80 11 c3 11 0a 7f 4c 4b E....... ......LK
0030 0a 7f 4c ff 09 64 06 f0 00 7e 3a 01 4d 41 47 49 ..L..d.. .~:.MAGI
0040 43 50 4b 54 76 00 00 00 6f 4b aa ec ff ff ff ff CPKTv... oK......
0050 ff ff 00 1e e5 e8 ef 27 00 1e e5 e8 ef 27 00 1e .... ' ..... '..
0060 e5 e8 ef 27 00 1e e5 e8 ef 27 00 1e e5 e8 ef 27 ...'.... .'.....'
0070 00 1e e5 e8 ef 27 00 1e e5 e8 ef 27 00 1e e5 e8 ..... '. ...'....
0080 ef 27 00 1e e5 e8 ef 27 00 1e e5 e8 ef 27 00 1e .'..... ' ..... '..
0090 e5 e8 ef 27 00 1e e5 e8 ef 27 00 1e e5 e8 ef 27 ...'.... .'.....'
00a0 00 1e e5 e8 ef 27 00 1e e5 e8 ef 27 00 1e e5 e8 ..... '. ...'....
00b0 ef 27 7d 9d fb 10 .'}...

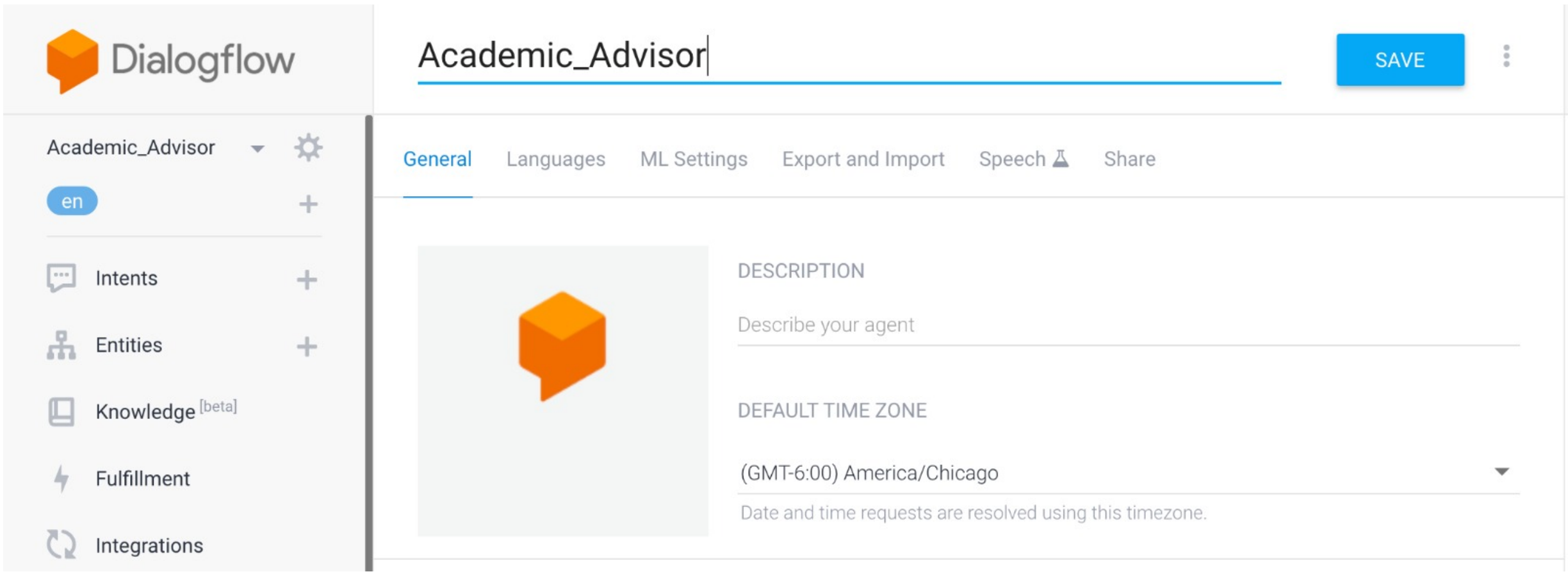
Dialogflow


App / Device
Dialogflow
Fulfillment
1. User utterance
Input
Query
2. Intent matching
3. Parameter extraction
External APIs
User
Intent
Code
Output
Actionable Data
DB
4. Send response

PC Automation



Academic Advisor



Difficulties

- IFTTT with Alexa has not options to give parameters
- Turning system on using WOL wireless has issues
- Turning system on requires pre-hand configurations

Future Work & Enhancements

- Seamless realtime Computer/Device operations
- Secure Turning On/Off Computers wirelessly
- Connecting Database with Dialogflow
- Connecting applications with Dialogflow
- Smoother NLP functionalities

Questions?

- Thank you.