

WELCOME ALEXA, YOUR PERSONAL ASSISTANT

JOHAN JANSSEN, INFO SUPPORT



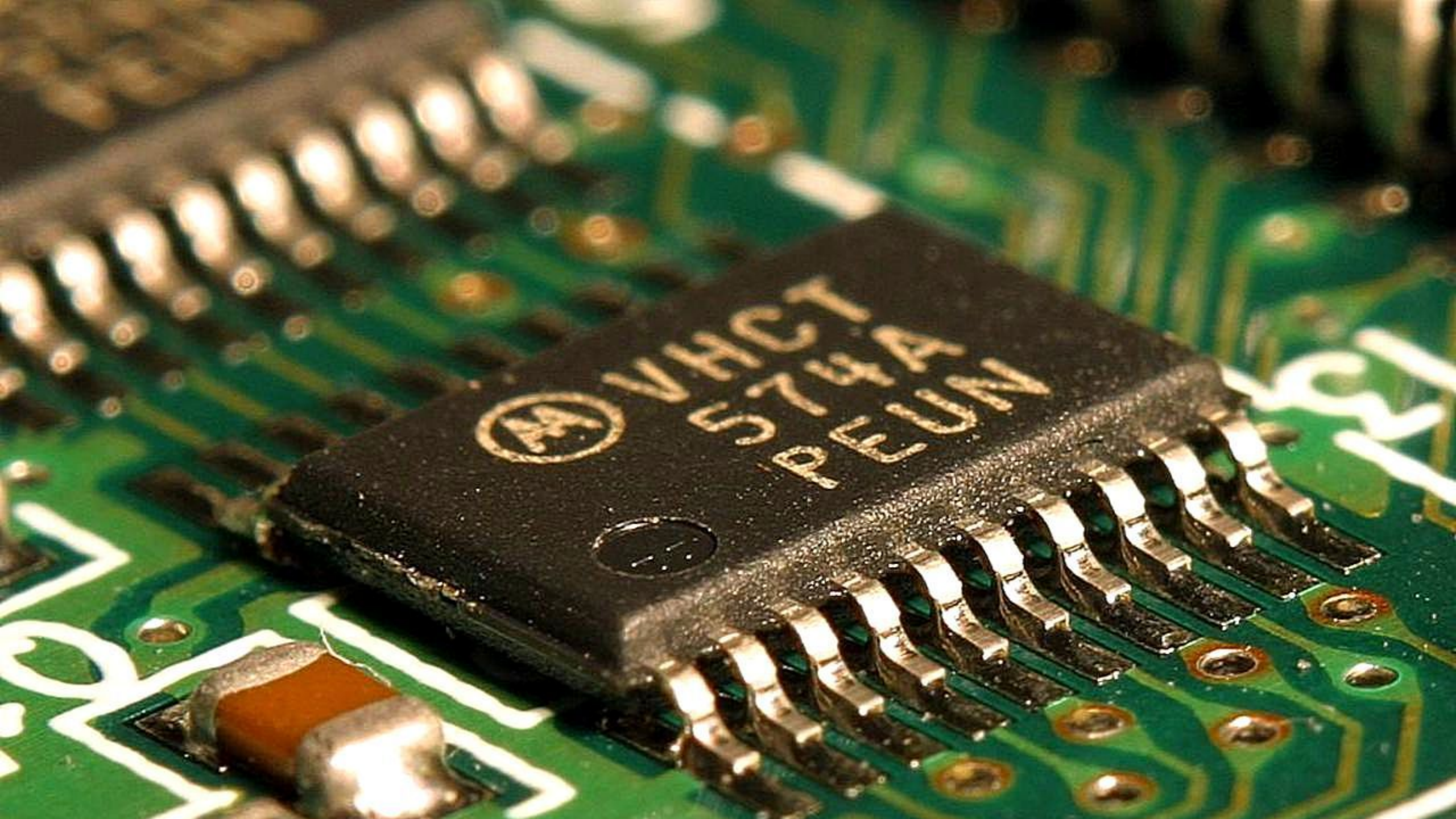
@JOHANJANSSEN42



CONTENT

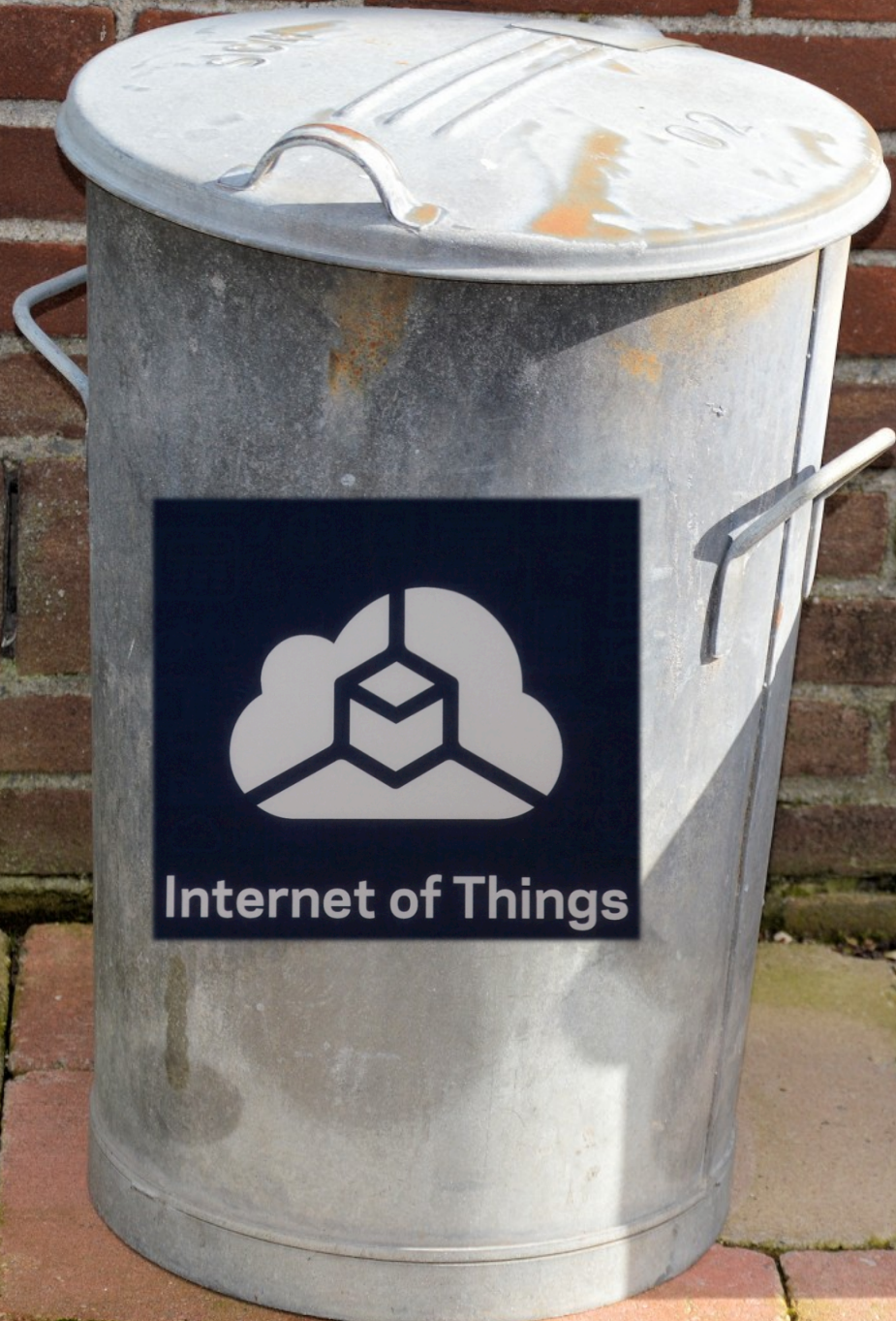
- Internet of Things
- Home automation
- Alexa
- openHAB
- Alexa skills
- Conclusion
- Questions

What's The Internet of Things (IoT)

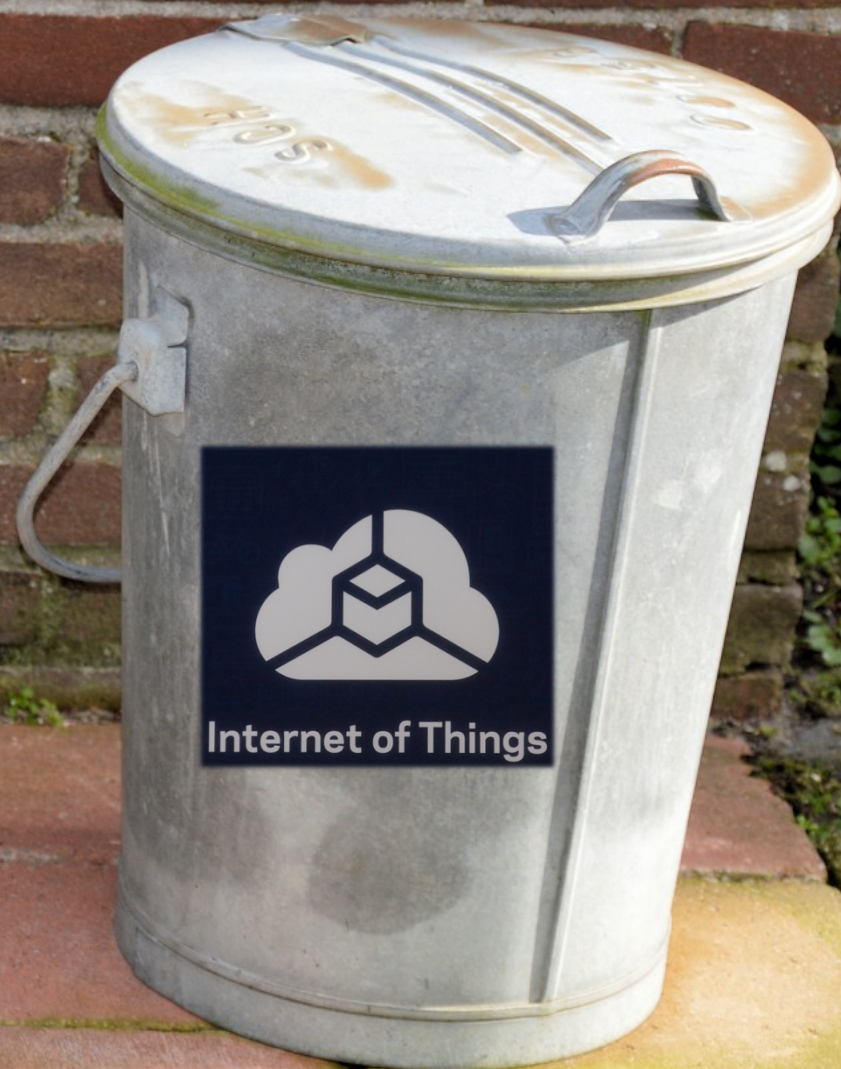


VHCT
574A
PLEUN





Internet of Things



Internet of Things

“The Infrastructure of the Information Society”

Global Standards Initiative on Internet of Things (IoT-GSI)



What's home automation?





What other things do we want to control?



DEMO TIME!



“Home automation is a subset of IoT”

Johan



Home automation challenges

















DEMO TIME!





RASPBERRY PI

Official guide from Amazon

<https://github.com/amzn/alexa-avs-raspberry-pi>

COMPARISON

RASPBERRY PI

- Around \$80-\$90
- Raspberry Pi 3
- Speaker
- Microphone
- Power adapter
- Cables

ECHO DOT 2

- \$50
- Adapter
- Dual band wifi
- Stereo (weak)
- Wake on speaking









Alexa for home automation



DEMO TIME!

OPENHAB





Woonkamer

Gezellig

X



Thermostaat

Werkweek

Uit

Werk

Aan



Onkyo Volume

-

0

5

7

9

13

20

30



Thermostaat woonkamer

20.10 °C

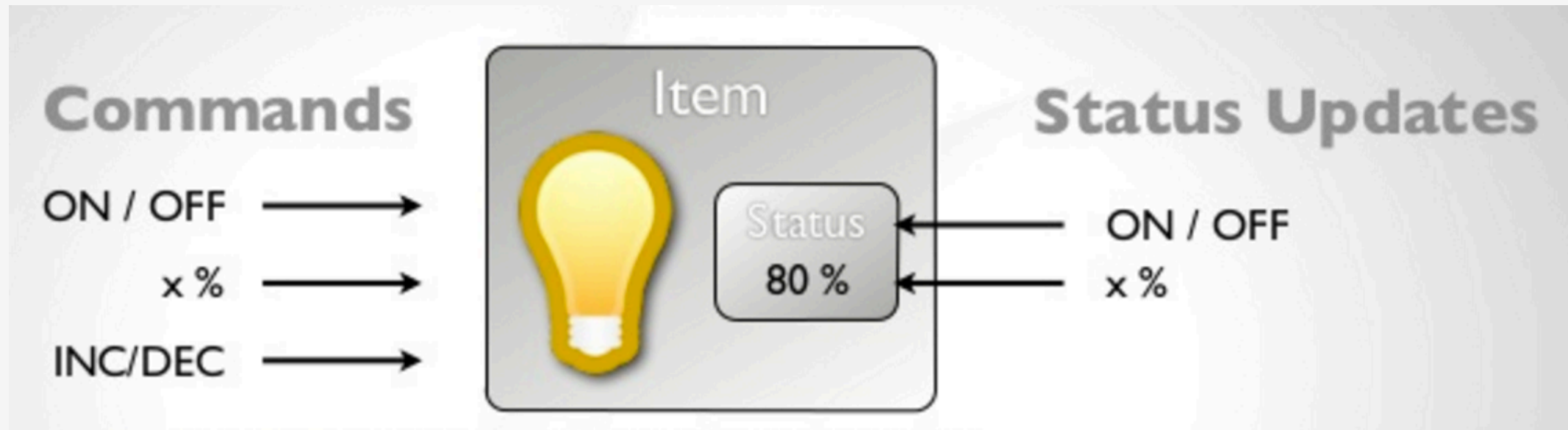


Ledstrip woonkamer



Verwarming slaapkamers

OPENHAB FUNCTIONALITY



Rules (engine)

Huis.rules

```
Rule "Deurbel? LampEntree aan"  
when Deurbel received update OPEN  
{  
    sendCommand(LampEntree, ON)  
}
```

Commands and
Status updates

Commands and
Status updates

Items

Woonkamer.item

```
Switch LampEntree "Lamp entree [%s]" {knx="1/3/20+0/3/20"}  
Contact Deurbel "Deurbel [%s]" {zwave="35:2:command=sensor_binary,respond_to_basic=true"}
```

Commands

Status updates

Commands

Status updates

Devices



Lamp entree
(via KNX binding)

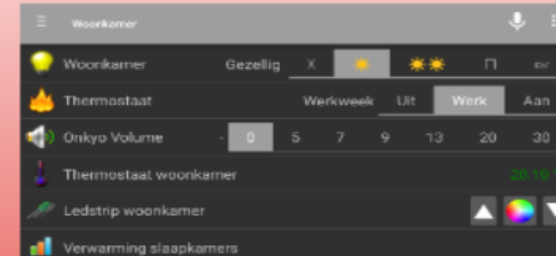


Deurbel
(via ZWave binding)

Sitemaps (User Interfaces)



Web interface (Chrome)



HABdroid (Android)





if this then that



If You say "Alexa trigger switchoff", then send a command



If You say "Alexa trigger switchon", then send a command





my



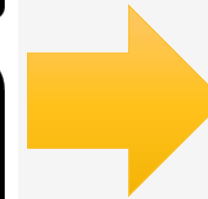
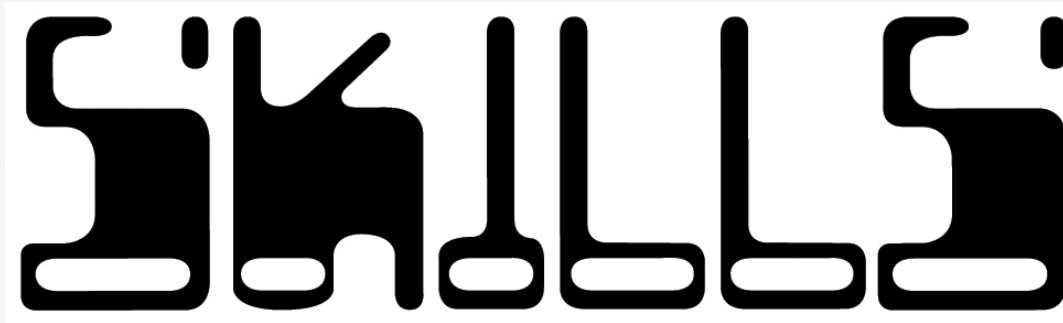


DEMO TIME!

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- 
- 
- **Retrieve information**
 - **Control devices**
 - **Call webservice**
 - **Order pizza!**

ALEXA-HA SKILL



TWO TYPE OF SKILLS

- Custom skill
- Smart home skill

TALK TO ALEXA

Alexa ask/tell

firstSkill

hello

invocation name

utterance

MAP UTTERANCE TO INTENT

MyFirstIntent

Intent

hello

utterance

DEPLOYING/RUNNING SKILLS

- **AWS Lambda**
 - Java
 - Node.js
 - Python
- **(Local) webservice**

NORMAL AWS LAMBDA DEPLOYMENT





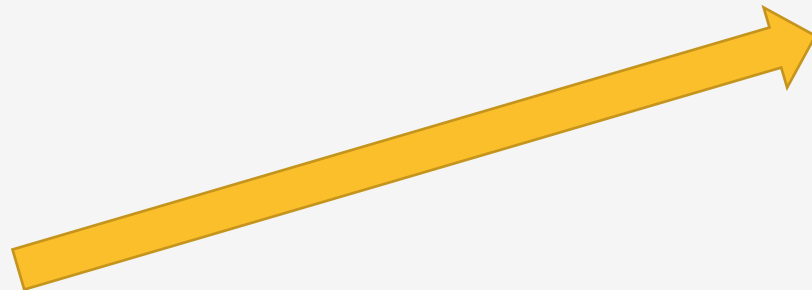
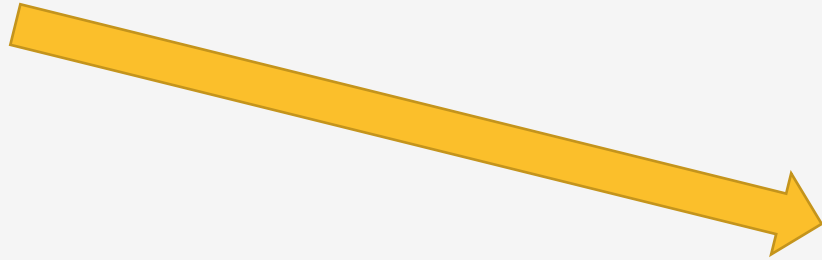
DEMO TIME!

MY SKILL





MY SKILL



NO ACCESS CONTROL

```
static {  
    System.setProperty("com.amazon.speech.speechlet.  
        servlet.disableRequestSignatureCheck", "true");  
}
```

ACCESS CONTROL

```
private static final Set<String> supportedApplicationIds =  
    new HashSet<String>();  
  
static {  
    supportedApplicationIds.add("amzn1.echo-sdk-ams.app.  
    [ see https://developer.amazon.com/ ]");  
}
```

AWS LAMBDA AUTO DEPLOY

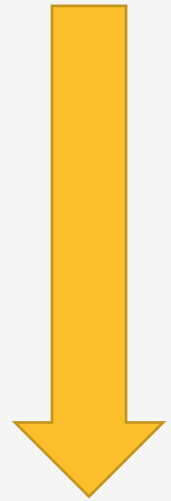
maven



Jenkins



AWS ROLE



amazon
Developer





DEMO TIME!

Possibilities

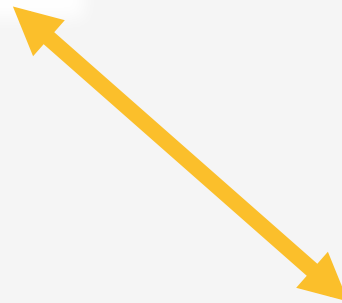














DEMO TIME!

GITHUB REPO'S

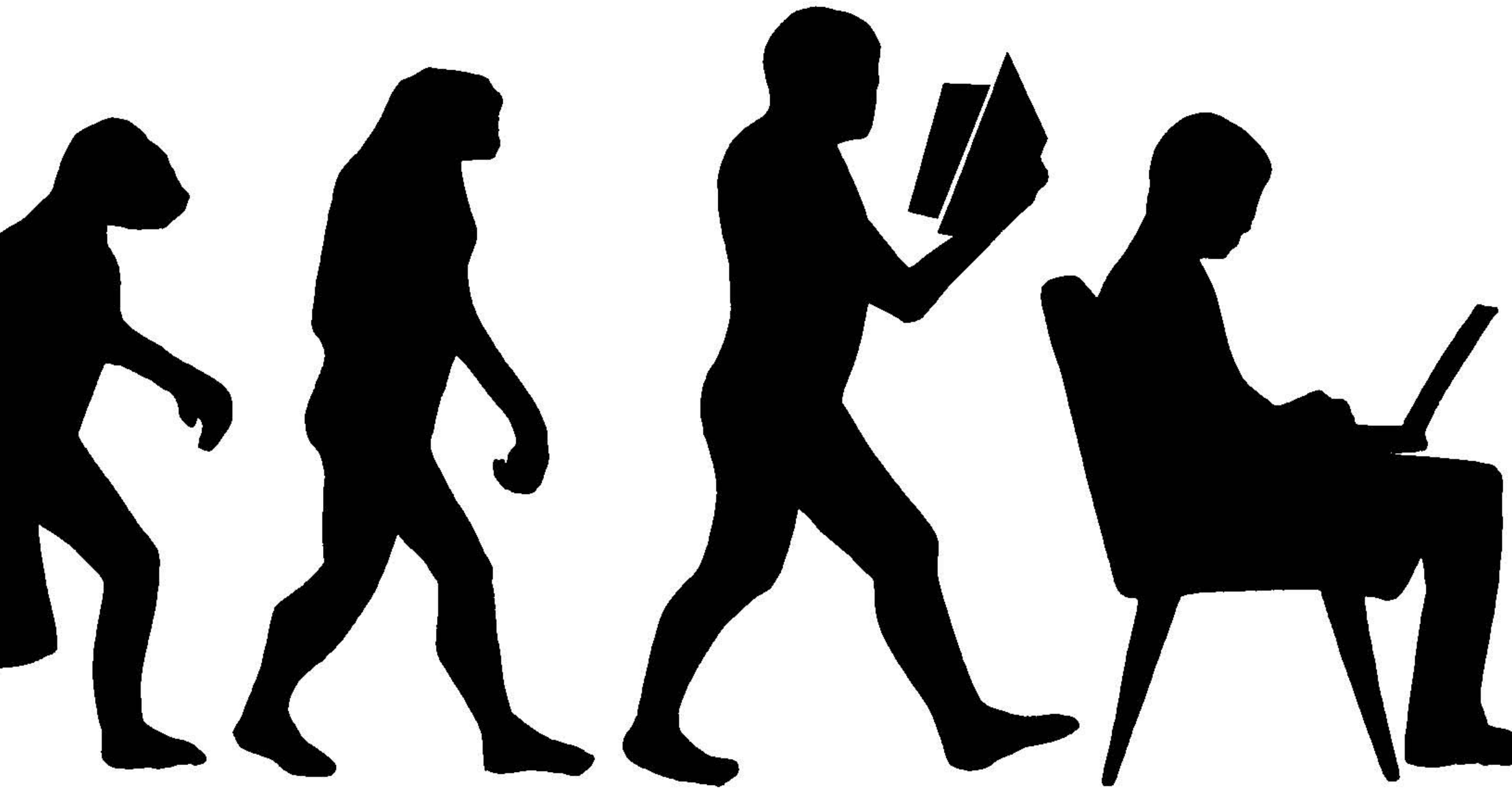
- Maven AWS Lambda integration
 - <https://github.com/johanjanssen/AlexaExamples>
- Alexa Skills Kit Java
 - <https://github.com/amzn/alexa-skills-kit-java>

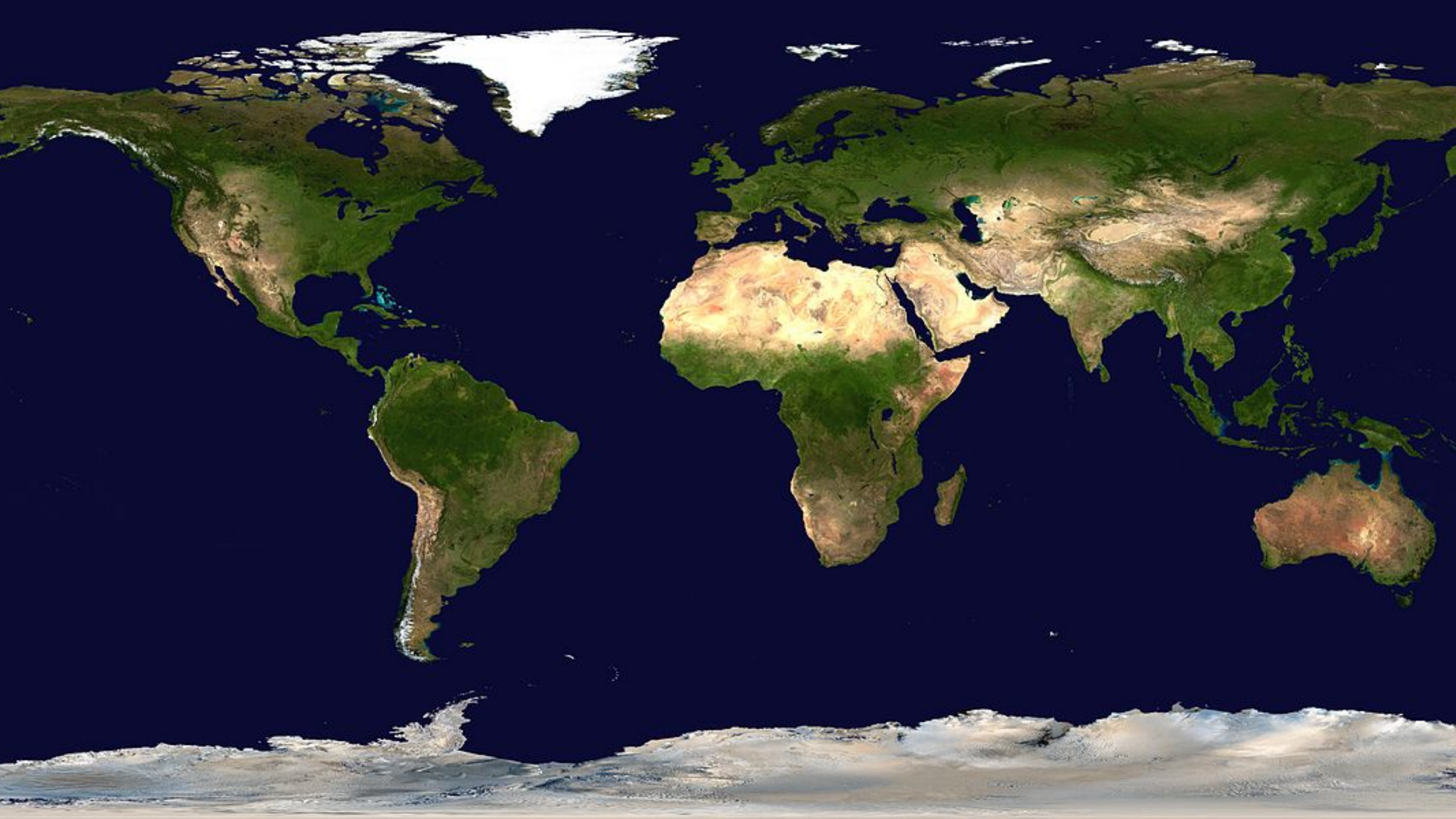
IF YOU WANT A NEW FEATURE

- Use an existing skill
- Integrate with for instance IFTTT
- Create a custom skill



Disadvantages Alexa







DO WE HAVE AN ACCENT?!









NO
TRESPASSING

RALEIGH-DURHAM
AIRPORT
AUTHORITY



Advantages Alexa

NEW!

Cool

POP 2,520

ELEV 1,518

Usefull

Useless





CONCLUSION

- **Easy to integrate with other devices / software**
- **Easy to program new features in Java**
- **You quickly get used to it**
- **Fun!**



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