Alexa joins the reference desk
Developing an Alexa skill for the library

Michael Skarupianski
Welcome

Alexa, ask k.i.t library to start presentation
Amazon Ec(h)osystem

Amazon Echo: [Amazon.com Link](https://www.amazon.com)
Amazon Echo Show: [Amazon.com Link](https://www.amazon.com)
Amazon Echo Dot: [Amazon.com Link](https://www.amazon.com)

Computer Mouse, Echo Dot (2nd Generation), Echo (2nd Generation), Echo Plus (1st Generation)
Headphones: [Amazon.com Link](https://www.amazon.com)
Alexa-Enabled 2-Port USB Car Charger: [Amazon.com Link](https://www.amazon.com)
Amazon Fire Tablet: [Amazon.com Link](https://www.amazon.com)
BMW’s Alexa integration gets it right: [Amazon.com Link](https://www.amazon.com)
What Alexa can do for you

Wake-up-word & Action
Build in functionality (Time, Weather, News, Wikipedia)
Play Radio
Access Amazon Services (Amazon Music, Audible, Orders)
Limitations

Can’t speak multiple Languages
Doesn’t work without stable internet
Does something you didn’t want
No list of all commands it understands
Can’t distinguish between persons (not now)
Extending Alexa - Skills (Apps)

*Alexa, what are your top skills?*

- “Alexa, what’s my Flash briefing?”
- “Alexa, play Jeopardy!”
- “Alexa, open Thunderstorm Sounds”
- “Alexa, what’s my Flash briefing?”
- “Alexa, ask Jumanji: Dunk to Bank”
- “Reuter TV U.S.”
- “Jeopardy!”
- “Ambient Sounds: Thunderstorm Sounds”
- “Fox News: Question of the Day”
- “Jurassic Park”

Staff Picks

- “Alexa, ask AnyPod to play The Big Day”
- “Alexa, start! SpongeBob Challenge”
- “Alexa, open the Wayne Investigation”
- “Alexa, ask chess-board to Delta 4”
- “Alexa, open Sesame Street”
- “Alexa, open Box Fan Sounds”
- “AnyPod”
- “The SpongeBob Challenge”
- “The Wayne Investigation”
- “Chessboard”
- “Sesame Street”
- “Sleep Sounds: Box Fan Sounds”

*Alexa, let’s go back to school.*

- “Alexa, play Geo Quiz”
- “Alexa, ask SAT Word of the Day what is the word of the day.”
- “Alexa, start Vocabulary Builder”
- “Alexa, play Word of the Day Quiz”
- “Alexa, open State Capital Game”
- “Alexa, start Amazon Math”
- “National Geographic Geo Quiz”
- “SAT Word of the Day”
- “Magoosh Vocabulary Builder”
- “Word of the Day Quiz”
- “State Capital Game”
- “Amazon Math”

*Alexa, what are your smart home skills?*

- “Alexa, turn on Christmas Tree Light”
- “Alexa, turn on the porch light”
- “Alexa, turn on the living room lights”
- “Alexa, tell Wink to lock my doors”
- “Alexa, turn on the Kitchen lights”
- “Alexa, ask Roomba to start cleaning.”
- “VonSheen”
- “Wink”
- “Casita and RAZ Select”
- “Vivint Smart Home - Complete”
- “UI/UX Optimized for Smart Home”
- “Robot Home”

Screenshot - Alexa Skill Store (U.S. Version)
Extending Alexa - Hardware

Smart Plug: Amazon.com Link
Smart Thermostat: Amazon.com Link
Netgear Arlo Camera: Amazon.com Link
Philips Hue: Amazon.com Link
Extending Alexa - Hardware

LG TV with Alexa: Amazon Link
AmazonBasics Microwave: Amazon.com Link
NissanConnect Services Skill with Amazon Alexa: NISSAN U.S.A.
The First Intelligent Heated Jacket: Kickstarter
Own Library Skill
How Alexa Skills work

User → Speech

Echo Device

Speech

Speech & Display

Converts Speech to text and identifies Skill → Text

Alexa Cloud

Text

Speech & Image

Converts text to speech

Text & Image

Library Skill
Language & Invocation Name

Choose language to add:

- English (US)
- English (AU)
- English (CA)
- English (IN)
- English (UK)
- French (FR)
- Italian (IT)
- Japanese (JP)
- Spanish (ES)
- Spanish (MX)

Skill Invocation Name

k.i.t. library

k.i.t. bibliothek
<table>
<thead>
<tr>
<th>NAME</th>
<th>UTTERANCES</th>
<th>SLOTS</th>
<th>TYPE</th>
<th>ACTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BookJokeIntent</td>
<td>4</td>
<td>-</td>
<td>Custom</td>
<td>Edit</td>
</tr>
<tr>
<td>CountAllItemsIntent</td>
<td>4</td>
<td>1</td>
<td>Custom</td>
<td>Edit</td>
</tr>
<tr>
<td>EventsInLibraryIntent</td>
<td>11</td>
<td>1</td>
<td>Custom</td>
<td>Edit</td>
</tr>
<tr>
<td>LocationInfoIntent</td>
<td>10</td>
<td>3</td>
<td>Custom</td>
<td>Edit</td>
</tr>
<tr>
<td>SeatFinderIntent</td>
<td>9</td>
<td>3</td>
<td>Custom</td>
<td>Edit</td>
</tr>
<tr>
<td>BookSubjectSearchIntent</td>
<td>5</td>
<td>1</td>
<td>Custom</td>
<td>Edit</td>
</tr>
</tbody>
</table>
## Utterances / SeatFinderIntent

### intents / SeatFinderIntent

#### Sample Utterances (8)

What might a user say to invoke this intent?

<table>
<thead>
<tr>
<th>Utterance</th>
</tr>
</thead>
<tbody>
<tr>
<td>find a place to read</td>
</tr>
<tr>
<td>find a place to learn</td>
</tr>
<tr>
<td>find a place to work</td>
</tr>
<tr>
<td>are there free seats</td>
</tr>
<tr>
<td>where are free seats</td>
</tr>
<tr>
<td>where can I read</td>
</tr>
<tr>
<td>where can I learn</td>
</tr>
<tr>
<td>where can I work</td>
</tr>
</tbody>
</table>
## Sample Utterances (4)

What might a user say to invoke this intent?

<table>
<thead>
<tr>
<th>Utterance</th>
<th>Default Slot</th>
</tr>
</thead>
<tbody>
<tr>
<td>find a place to {thingsToDoInLibrary}</td>
<td></td>
</tr>
<tr>
<td>are there free seats</td>
<td></td>
</tr>
<tr>
<td>where are free seats</td>
<td></td>
</tr>
<tr>
<td>where can I {thingsToDoInLibrary}</td>
<td></td>
</tr>
</tbody>
</table>
### Slot Types

**Slot Values (3)**

<table>
<thead>
<tr>
<th>VALUE</th>
<th>ID (OPTIONAL)</th>
<th>SYNONYMS (OPTIONAL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>work</td>
<td>Enter ID</td>
<td>Add synonym</td>
</tr>
<tr>
<td>learn</td>
<td>Enter ID</td>
<td>Add synonym</td>
</tr>
<tr>
<td>read</td>
<td>Enter ID</td>
<td>Add synonym</td>
</tr>
</tbody>
</table>
"request": {
  "type": "IntentRequest",
  "requestId": "amzn1.echo-api.request.7518eb8f-744e-408c-b0b8-b84e",
  "timestamp": "2018-10-01T13:32:40Z",
  "locale": "en-US",
  "intent": {
    "name": "SeatFinderIntent",
    "confirmationStatus": "NONE",
    "slots": {
      "thingsToDoInLibrarySlot": {
        "name": "thingsToDoInLibrarySlot",
        "value": "learn",
      }
    }
  }
},

"response": {
  "outputSpeech": {
    "type": "PlainText",
    "text": "In the K.I.T. Library South are no more free places. I
  },
  "card": {
    "type": "Simple",
    "title": "Freie Lernplätze",
    "content": "In the K.I.T. Library South are no more free places"}
}
In the K.I.T. Library South are no more free places. In the K.I.T. Library North are enough free seats available.
Finalising

- Logo
- Description
- Example Sentences
- Disclaimer (optional)
- Submit for Approval
KIT-Bibliothek
von KIT-Bibliothek

Kostenlos aktivieren

"Alexa, sag mir die Veranstaltungen für morgen von der k. i. t. bibliothek."

"Alexa, frage k. i. t. Bibliothek wo ich lernen kann."

"Alexa frage k. i. t. Bibliothek wo der LST ist."

Beschreibung
Der offizielle Alexa Skill der KIT-Bibliothek unterstützt sie bei folgenden Fragen:

* Freie Lern- und Arbeitsplätze*
# Analytics

## Sessions

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total for Custom Range</td>
<td>▲ 58</td>
</tr>
<tr>
<td>(previous 273 days had 0)</td>
<td></td>
</tr>
<tr>
<td>Maximum per Hour</td>
<td>9</td>
</tr>
<tr>
<td>on 02/26/2018 at 11:00 UTC</td>
<td></td>
</tr>
<tr>
<td>Average per Hour</td>
<td>0</td>
</tr>
</tbody>
</table>

## Unique Customers

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total for Custom Range</td>
<td>▲ 19</td>
</tr>
<tr>
<td>(previous 273 days had 0)</td>
<td></td>
</tr>
<tr>
<td>Maximum per Hour</td>
<td>1</td>
</tr>
<tr>
<td>on 02/13/2018 at 07:00 UTC</td>
<td></td>
</tr>
<tr>
<td>Average per Hour</td>
<td>0</td>
</tr>
</tbody>
</table>

## Utterances

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total for Custom Range</td>
<td>▲ 88</td>
</tr>
<tr>
<td>(previous 273 days had 0)</td>
<td></td>
</tr>
<tr>
<td>Maximum per Hour</td>
<td>18</td>
</tr>
<tr>
<td>on 07/05/2018 at 20:00 UTC</td>
<td></td>
</tr>
<tr>
<td>Average per Hour</td>
<td>0</td>
</tr>
</tbody>
</table>

## Intents

- **BookJokeIntent**: 3.3%
- **EventsInLibraryIntent**: 24.6%
- **AMAZON.CancelIntent**: 4.9%
- **CountAllMediaIntent**: 8.2%
- **AMAZON.StopIntent**: 9.8%
- **LocationInfoIntent**: 24.6%
- **SeatFinderIntent**: 24.6%
Main Lessons learned

- 6 Months online
- GDPR Restrictions
- Debugging is a pain
- “Library”
Outlook

New Devices
Location API
People are buying and using voice devices like crazy
Summary

Pros
- very cheap devices (or already included)
- fast development
- simple question
- future versions
- developer support

Cons
- developer support
- no multiple language support
- every language needs own configuration
- only text and images
- unclear gdpr
Questions

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