

Implementing Voice and Chatbot UI using Dialogflow and Mycroft with Moodle resources and activities

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Overview

- Nowadays **smart speakers** are common
 - using not only the smart speaker basic features,
 - also various services and online systems via the voice UI (user interface.)

Overview

- Likewise, chatbot UI, a text version of voice UI, is also useful
- In our case, **Dialogflow** and **Mycroft** were used for implementing voice and chatbot UI with Moodle.

Quick review of my presentation at prev Moot 2019

<https://moodle.com/wp-content/events/mootglobal19/MoodleEnhancementwithVUletcforRealizingSafetyEducationinKidsSafetyChemicalExperimentsandEmergencyNursingFields.pdf>

Dialogflow



The screenshot shows the Wikipedia article for Dialogflow. The page title is "Dialogflow" and it is described as "From Wikipedia, the free encyclopedia". The article text states: "Dialogflow is a natural language understanding platform used to design and integrate a conversational user interface into mobile apps, web applications, devices, bots, interactive voice response systems and related uses." A summary box on the right provides details: Developer(s) Google, Type Conversational AI, and Website cloud.google.com/dialogflow. A table of contents is visible at the bottom of the article text, listing: 1 History, 2 References, 3 Further reading, and 4 External links.

- can be connected to the Moodle web service API via a webhook
- Users are able to access some Moodle activities and resources through the popular voice and chatbot UI supported by Dialogflow, such as Web, Google Assistant

Calendar example (Dialogflow chatbot UI)

Calendar

Detailed month view for:

← October 2021 November 2021

Mon	Tue	Wed	Thu	Fri
1	2	3	4	5
8	9	10	11	12
15	16	17	18 📅 Kita - ...	19
22 📅 Timed...	23	24	25	26

MoodleBot

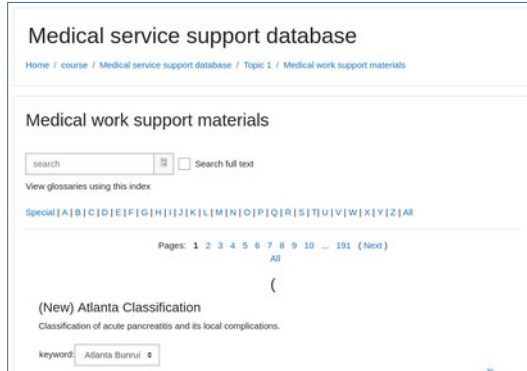
POWERED BY Dialogflow

calendar

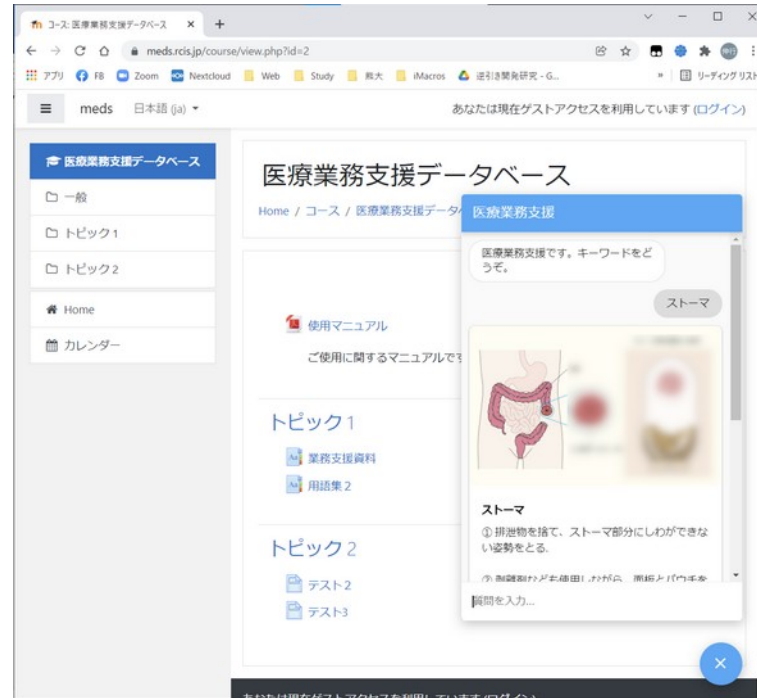
calendar upcoming events: Kita - Zoom meeting 11/18/2021 | Timed quiz (20.) opens 11/20/2021 | Timed quiz (20.) closes 11/20/2021 | Timed Assignment (22) is due 11/22/2021 🔊

Ask something...

Glossary example (Dialogflow chatbot UI)



The purpose :
quick searching of related info
when nurses are performing
their medical work



Dialogflow and other services



The screenshot shows the Wikipedia article for Dialogflow. The page title is "Dialogflow" and it is categorized as "From Wikipedia, the free encyclopedia". The main text describes Dialogflow as a natural language understanding platform used to design and integrate a conversational user interface into mobile apps, web applications, devices, bots, interactive voice response systems and related uses. A summary box on the right side of the article provides the following information:

Dialogflow
 Dialogflow
Developer(s) Google
Type Conversational AI
Website cloud.google.com/dialogflow

Below the summary box, there is a "Contents" section with a "[hide]" link, listing the following sections:

- 1 History
- 2 References
- 3 Further reading
- 4 External links

Since users' utterances and chat data need to be sent and processed on the **proprietary service** of each voice UI company, some people consider such dependency problematic

Mycroft

The screenshot shows the Mycroft AI website. At the top, there is a navigation bar with links for 'Store', 'Documentation', 'Blog', 'Contribute', and 'OEM'. On the right, there are links for 'My Orders' and 'My Mycroft'. A blue banner below the navigation bar contains the text 'Mark II orders - verify your address!'. Below this is a main heading: 'Join the Privacy-Focused Voice-Enabled Ecosystem'. The page is divided into two columns. The left column is titled 'Mycroft for your Enterprise' and features an illustration of various devices (phone, tablet, laptop, smart speaker) with a hand icon pointing to them. Below the illustration is a paragraph of text and a list of services: Home Automation, Music Streaming, VPN, Secure (and private) remote controls, and a wide variety of Skills from our Marketplace. A blue button at the bottom of this column says 'TELL US ABOUT YOUR PROJECT'. The right column is titled 'Mycroft for Everyone' and features an illustration of a smart speaker. Below the illustration is a 'PREORDER NOW' button. Below the illustration is a paragraph of text and another 'PRE-ORDER NOW' button.

MYCROFT AI Store Documentation Blog Contribute OEM My Orders My Mycroft

Mark II orders - verify your address!

Join the Privacy-Focused Voice-Enabled Ecosystem

Mycroft for your Enterprise

Our open-source, modular system can be ported to your device or environment, at any price point.

Whether you make voice-assistants, televisions, or microwaves. Whether you have a 5-room BnB or a 1000-room hotel. Your customers will get access to all the necessities of a voice assistant. Our software and essential services are free (as in freedom) and also gratis (at no cost to you or them). And especially not at the cost of their (or your) privacy!

Your customers will be able to upgrade their experience with premium content and services, such as:

- Home Automation
- Music Streaming
- VPN
- Secure (and private) remote controls
- and a wide variety of Skills from our Marketplace

[TELL US ABOUT YOUR PROJECT](#)

Mycroft for Everyone

PREORDER NOW

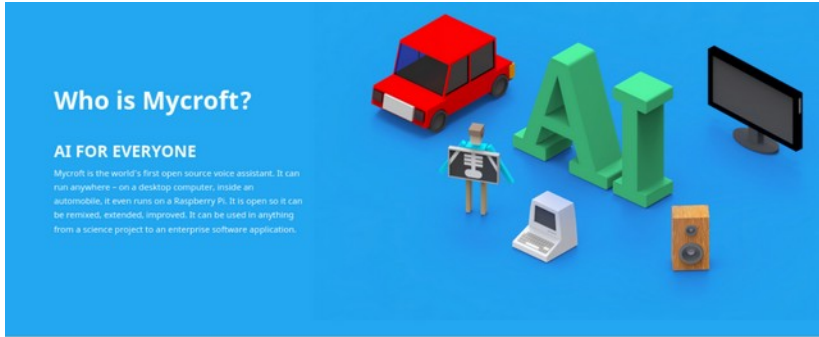
The Mark II is a state-of-the-art, privacy-respecting smart speaker designed for you and your family, from kids to grandparents. The Mark II provides a great voice experience without sacrificing privacy.

At the same time, it is open hardware and software for developers and makers and serves as a reference design for OEMs. The Mycroft Mark II is the only extensible smart speaker!

[PRE-ORDER NOW](#)

- An open source VUI
- it is possible to build an ecosystem where VUIs are available without sending users' utterance data to proprietary services

Mycroft



Who is Mycroft?

AI FOR EVERYONE

Mycroft is the world's first open source voice assistant. It can run anywhere – on a desktop computer, inside an automobile, it even runs on a Raspberry Pi. It is open so it can be removed, extended, improved. It can be used in anything from a science project to an enterprise software application.



Know-it-all

I can answer all kinds of factual questions. Like, "Hey Mycroft, what is Codex Seraphinianus?".



Practical Assistant

Classics – I can tell you the date, time, weather, set alarms, or play the news.



Media

Rock'n'roll! I love to play music, radio, podcasts, or movies and videos on your nearby display.

Mycroft's Skills

The number of things I can do is growing exponentially. If I posted them here, the list would feel like a fossil by the time you'd read it.

Our open source community are constantly working on new Skills, assuring their ongoing quality and reliability, and translating Skills to new languages.

[SEE ALL SKILLS](#)

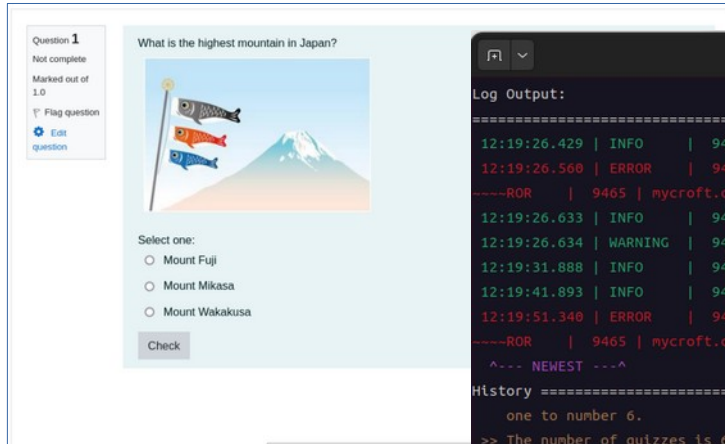
- Mycroft has several upsides:
- It's clear what's going on inside (not a black box)
- User privacy is respected. The user can choose whether or not the voice is recorded
- It is lightweight and will run on low-powered hardware

<https://mycroft.ai/about-mycroft/>

#mootglobal22



Quiz example (Mycroft voice UI)



```
t-kita@expertbook: ~
Log Output: 16-26 of 26
===== mycroft-core 21.2.2 =====
12:19:26.429 | INFO | 9465 | __main__:handle_record_begin:41 | Begin Recording...
12:19:26.560 | ERROR | 9465 | mycroft.client.speech.listener:transcribe:239 | list index out of range
----ROR | 9465 | mycroft.client.speech.listener:transcribe:240 | Speech Recognition could not understand audio
12:19:26.633 | INFO | 9465 | __main__:handle_record_end:49 | End Recording...
12:19:26.634 | WARNING | 9465 | mycroft.client.speech.listener:process:212 | Audio too short to be processed
12:19:31.888 | INFO | 9465 | __main__:handle_record_begin:41 | Begin Recording...
12:19:41.893 | INFO | 9465 | __main__:handle_record_end:49 | End Recording...
12:19:51.340 | ERROR | 9465 | mycroft.client.speech.listener:transcribe:239 | list index out of range
----ROR | 9465 | mycroft.client.speech.listener:transcribe:240 | Speech Recognition could not understand audio
^--- NEWEST ---^

History ===== Log Output Legend ===== Mic Level =====
one to number 6.
>> The number of quizzes is 6. Select one from number one to number 6.
number two
>> Question 1: What is the highest mountain in Japan?
>> Number 1: Mount Fujl. Number 2: Mount Mikasa. Number 3: Mount Wakakusa.
Input (':' for command, Ctrl+C to quit) =====
```

<https://github.com/kita-toshihiro/moodle-quiz-skill>

Note

When calling web service API in python (in Mycroft skills):

- Some function (such as "mod_quiz_save_attempt") need to be called with the POST parameters like:

```
params = { "attemptid" : int(attemptid) }  
for i in range(0,3)  
    params.update({  
        f"data[{i}][name]" : inputdata[i]['name'],  
        f"data[{i}][value]" : inputdata[i]['value'] })
```

Not like:

```
params = {'attemptid' : int(attemptid), 'data' : inputdata}
```

- For details, see <https://stackoverflow.com/questions/53161278/accessing-a-moodle-servers-api-via-pythons-request-library>

Note

We consider it is important to support both Dialogflow and Mycroft for wider choices of users.



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GLOBAL 2022

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