

# **Novo Home Assistant**

**252 Term Project**



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## Link to GitHub repository:

<https://github.com/r1cummings/252TermProject-NovoHomeAssistant>

# Motivation for Novo

Unique home assistant that goes beyond Alexa or Google Home's capabilities.  
Specifically for use in my household.

Examples:

- 1) Adjusting Pool Temperature(s)
- 2) Turning Crypto miners on / off
- 3) Feeding the dogs
- 4) Starting / Stopping Robot Vacuum

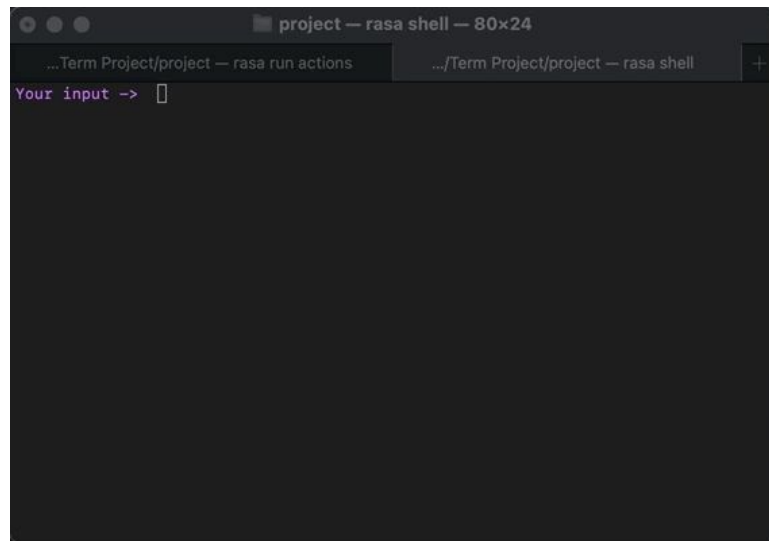
# Conversation Flows Implemented

41 intents

```
4 examples: |
5   - Hi!
6   - Hey!
7   - Hello
8   - Hi
9   - What's up
10  - How are you?
11  - How are you
12  - How you doing
13  - Hey
14  - Hellop
15 - intent: robot_joke
16   examples: |
17     - Are you a robot?
18     - Are you a robot
19     - Are you a human
20     - robot
21     - human
22     - Are you a bot?
23     - Are you a human?
24 - intent: alarm_system
25   examples: |
```

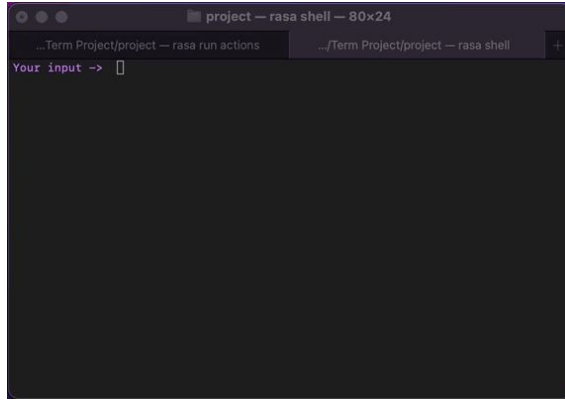


4 Multi-Turn convos

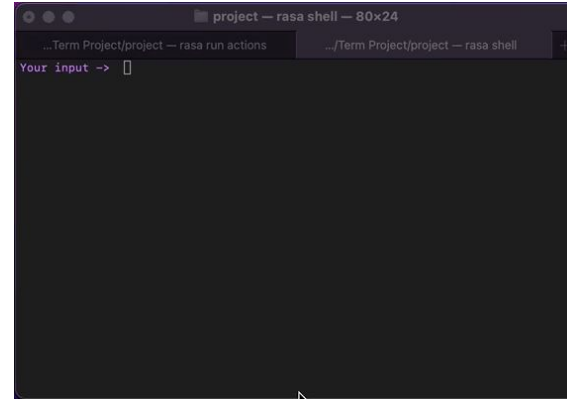


# Conversation Flows Implemented (2)

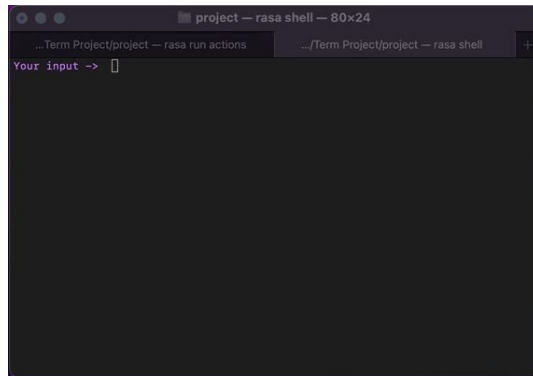
Crypto



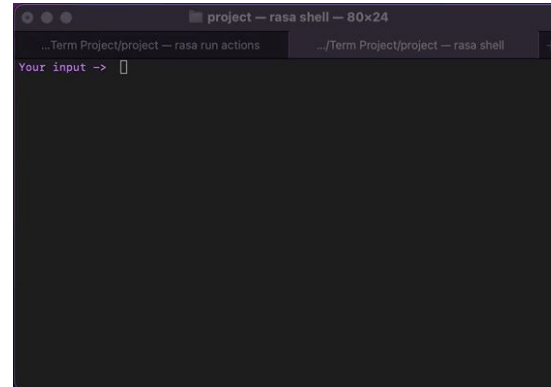
Robot Vacuum



Drive Time





Pool



# Struggles

## RASA Docs

### Introduction

### Rasa Playground

### Building Assistants

#### Installation

#### Migrate From (beta)

#### Command Line Interface

#### Best Practices

#### Conversation Patterns

## Intents

[Your input -> lights on  
Turning lights on!  
[Your input -> Lights on  
The lights are now off.

## Domain

```
version: '2.0'
config:
  store_entities_as_slots: true
session_config:
  session_expiration_time: 60
  carry_over_slots_to_new_session: true
intents:
- greet:
  use_entities: true
- inform:
  use_entities: true
- subscribe:
  use_entities: true
- robot_joke:
  use_entities: true
- alarm_system:
  use_entities: true
- pool:
  use_entities: true
- blinds_open:
  use_entities: true
- blinds_closed:
  use_entities: true
- lights_on:
  use_entities: true
- lights off:
```

# Struggles (2)

ERROR asyncio occurring on other machine

```
Bot loaded. Type a message and press enter (use '/stop' to exit).
Your input -> turn the lights off
2021-11-29 13:00:37 ERROR asyncio - Task exception was never retrieved
future: <Task finished name='Task-2' coro=<configure_app.<locals>.run_cmdline_
omeAssistant/env/lib/python3.8/site-packages/rasa/core/run.py:131> exception=T
Traceback (most recent call last):
```

```
2021-11-29 13:15:29 INFO root - Rasa server is up and running.
Bot loaded. Type a message and press enter (use '/stop' to exit):
Your input -> what's the time?
2021-11-29 13:15:58 ERROR asyncio - Task exception was never retrieved
future: <Task finished name='Task-2' coro=<configure_app.<locals>.run_cmdline_io() done, defined at /mnt/c/Users/amanb/desktop/work/Fall 2021/CMPE 252/252TermProject-NovohomeAssistant/env/lib/python3.8/site-packages/rasa/core/run.py:131> exception=TimeoutError()>
Traceback (most recent call last):
  File "/mnt/c/Users/amanb/desktop/work/Fall 2021/CMPE 252/252TermProject-NovohomeAssistant/env/lib/python3.8/site-packages/rasa/core/run.py", line 135, in run_cmdline_io
    await console.record_messages()
  File "/mnt/c/Users/amanb/desktop/work/Fall 2021/CMPE 252/252TermProject-NovohomeAssistant/env/lib/python3.8/site-packages/rasa/core/channels/console.py", line 182, in record_messages
    async for response in bot.responses:
  File "/mnt/c/Users/amanb/desktop/work/Fall 2021/CMPE 252/252TermProject-NovohomeAssistant/env/lib/python3.8/site-packages/rasa/core/channels/console.py", line 135, in _send_message_receive_stream
    async with session.post(url, json=payload, raise_for_status=True) as resp:
  File "/mnt/c/Users/amanb/desktop/work/Fall 2021/CMPE 252/252TermProject-NovohomeAssistant/env/lib/python3.8/site-packages/aiohttp/client.py", line 1117, in __aenter__
    self._resp = await self._coro
  File "/mnt/c/Users/amanb/desktop/work/Fall 2021/CMPE 252/252TermProject-NovohomeAssistant/env/lib/python3.8/site-packages/aiohttp/client.py", line 544, in _request
    await resp.start(conn)
  File "/mnt/c/Users/amanb/desktop/work/Fall 2021/CMPE 252/252TermProject-NovohomeAssistant/env/lib/python3.8/site-packages/aiohttp/client_reqrep.py", line 905, in start
    self._continue = None
  File "/mnt/c/Users/amanb/desktop/work/Fall 2021/CMPE 252/252TermProject-NovohomeAssistant/env/lib/python3.8/site-packages/aiohttp/helpers.py", line 656, in __exit__
    raise asyncio.TimeoutError from None
asyncio.exceptions.TimeoutError
```

This is currently an open Rasa issue that is occurring with some users.

<https://github.com/RasaHQ/rasa/issues/7828>

# Insights / Lessons Learned

## Insights:

- 1) Spend more time watching the videos
- 2) Dive deeper into Custom Actions and their capabilities
- 3) See about adjusting the Config.yml file that could potentially lead to better training and testing errors

## Lessons Learned:

- 1) Can use Rasa Interactive to train model rather than writing it by hand
- 2) Using Forms / Slots and Storing the info using Custom Actions
- 3) Adding more training data (NLU “examples”) had a huge impact on how accurate my model was/is.



**Live Demo**