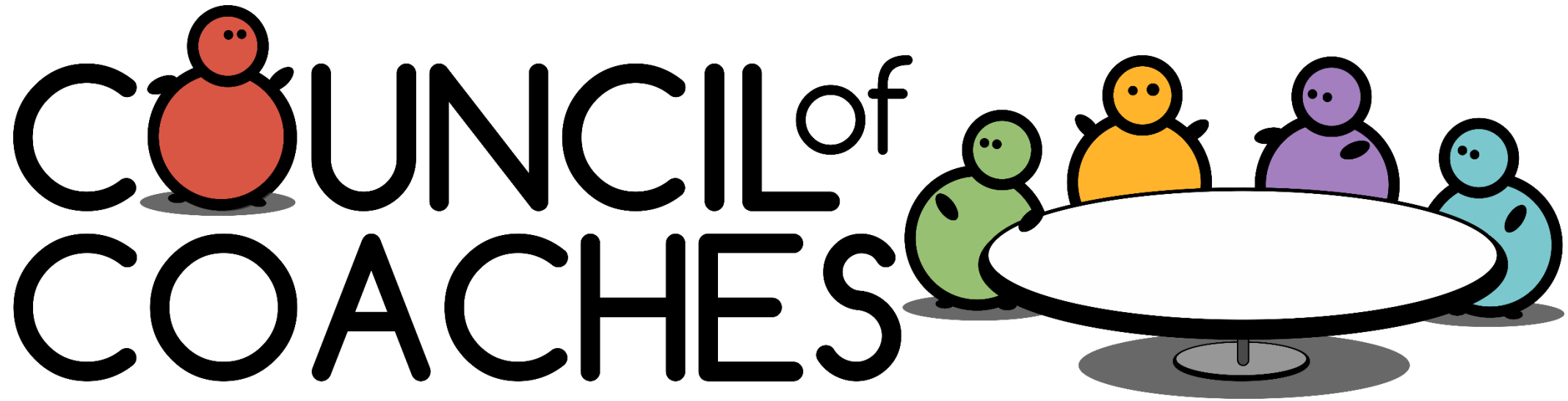# Lessons learned from...

COUNCIL of COACHES

Writing personalized, dynamic dialogue for virtual coaching using WOOL.

Harm op den Akker, PhD
Technical Coordinator
Roessingh Research and Development & Innovation Sprint

Credits…

UNIVERSITY OF TWENTE.

Roessingh
Research and Development

FONDEN TEKNOLOGI RÅDET
DANISH BOARD OF
TECHNOLOGY FOUNDATION

University
of Dundee

SORBONNE
UNIVERSITÉS

UNIVERSITAT
POLITÈCNICA
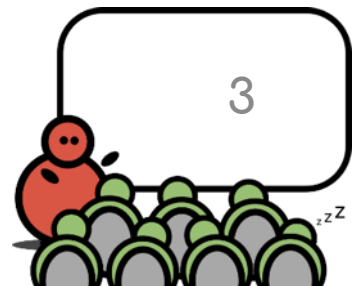DE VALÈNCIA

INNOVATION
SPRINT

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2
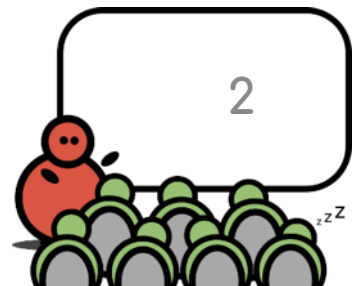
This presentation...

- What is the Council of Coaches project?
- What is Council of Coaches *app*?
- Building interactive dialogue with W**OO**L
- The Future of WOOL...

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What is the Council of Coaches Project?

Three years of work in 2 slides...

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A new approach to health coaching...

Council of Coaches provides the technology and proof of concept that using multiple virtual coaches is an engaging and effective way to support older adults including those with chronic conditions to reach a healthy lifestyle.

The project delivers an accessible prototype with a cast of 7 coaches, focusing on activity, nutrition, diabetes type 2, chronic pain, and more...

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www.council-of-coaches...
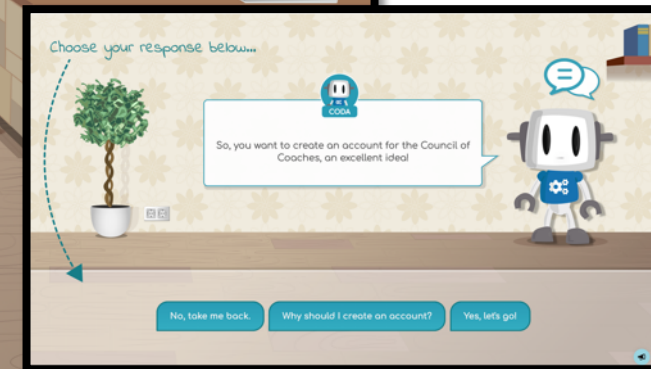
Council of Coaches: An Open Agent Platform for everyone

Additionally, Council of Coaches pushes the boundaries in Embodied Conversational Agent technology by creating an Open Source Open Agent Platform that allows you to create autonomously collaborating teams of virtual agents.

The platform enables fluent automated multi-party interaction between multiple agents and users with automated dialogue generation, group dynamics and gaze behaviour and individually designed coaches.
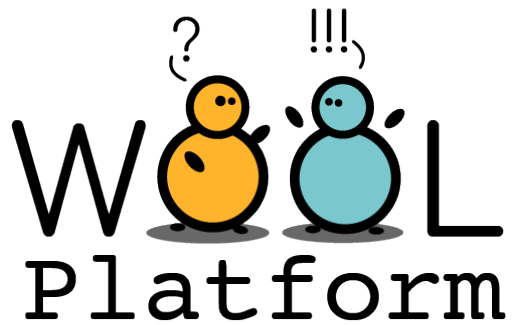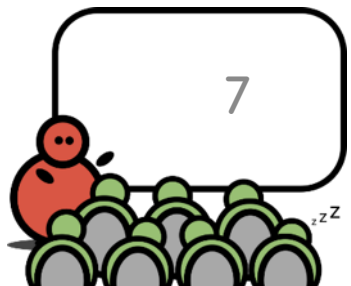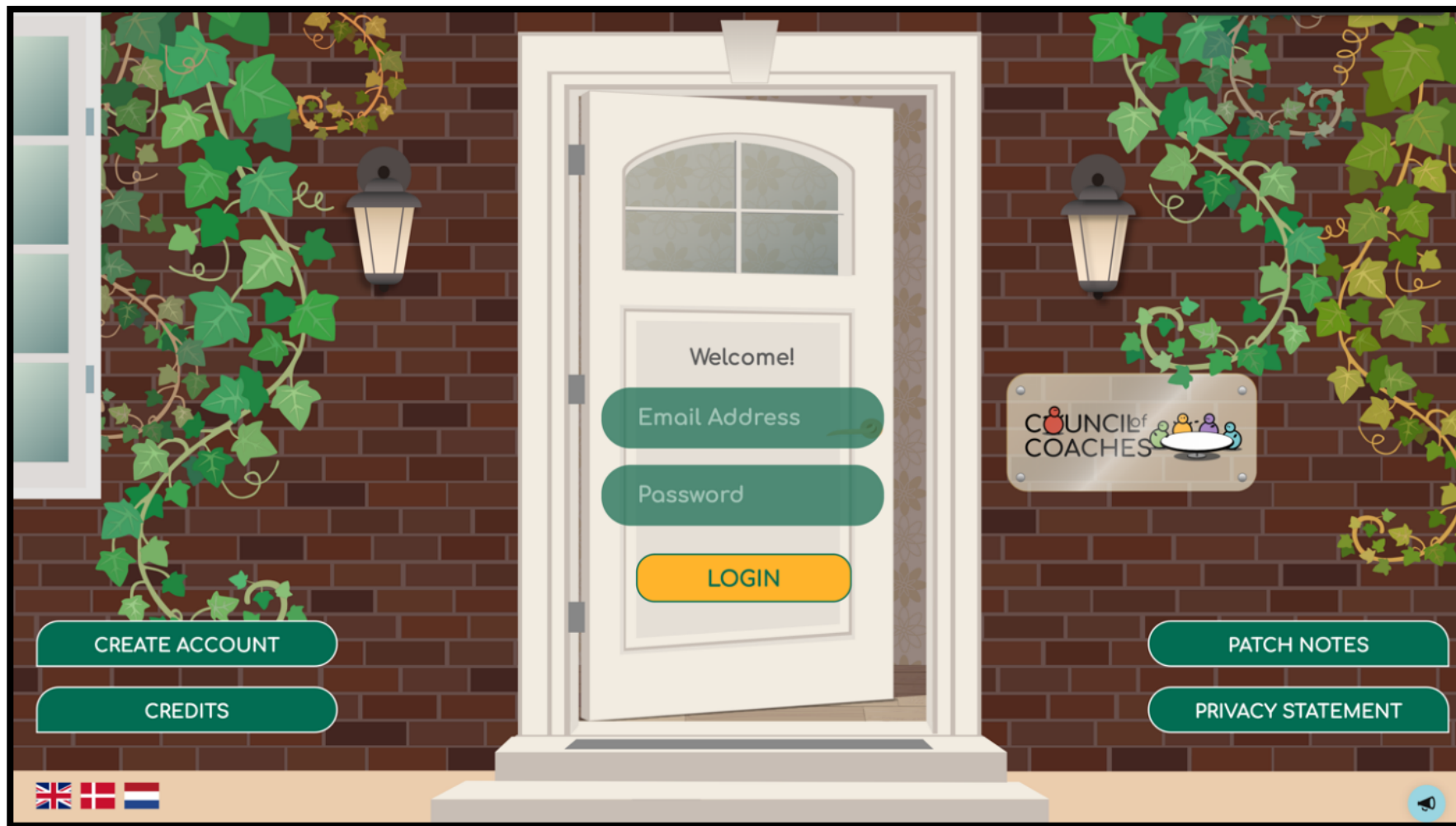
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What is Council of Coaches *app*?

A quick run-down of the demonstrator application – the focus for today.

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A polished application that runs in a web browser on tablets or desktops...

Welcome!

Email Address

Password

LOGIN

CREATE ACCOUNT

CREDITS

PATCH NOTES

PRIVACY STATEMENT

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8
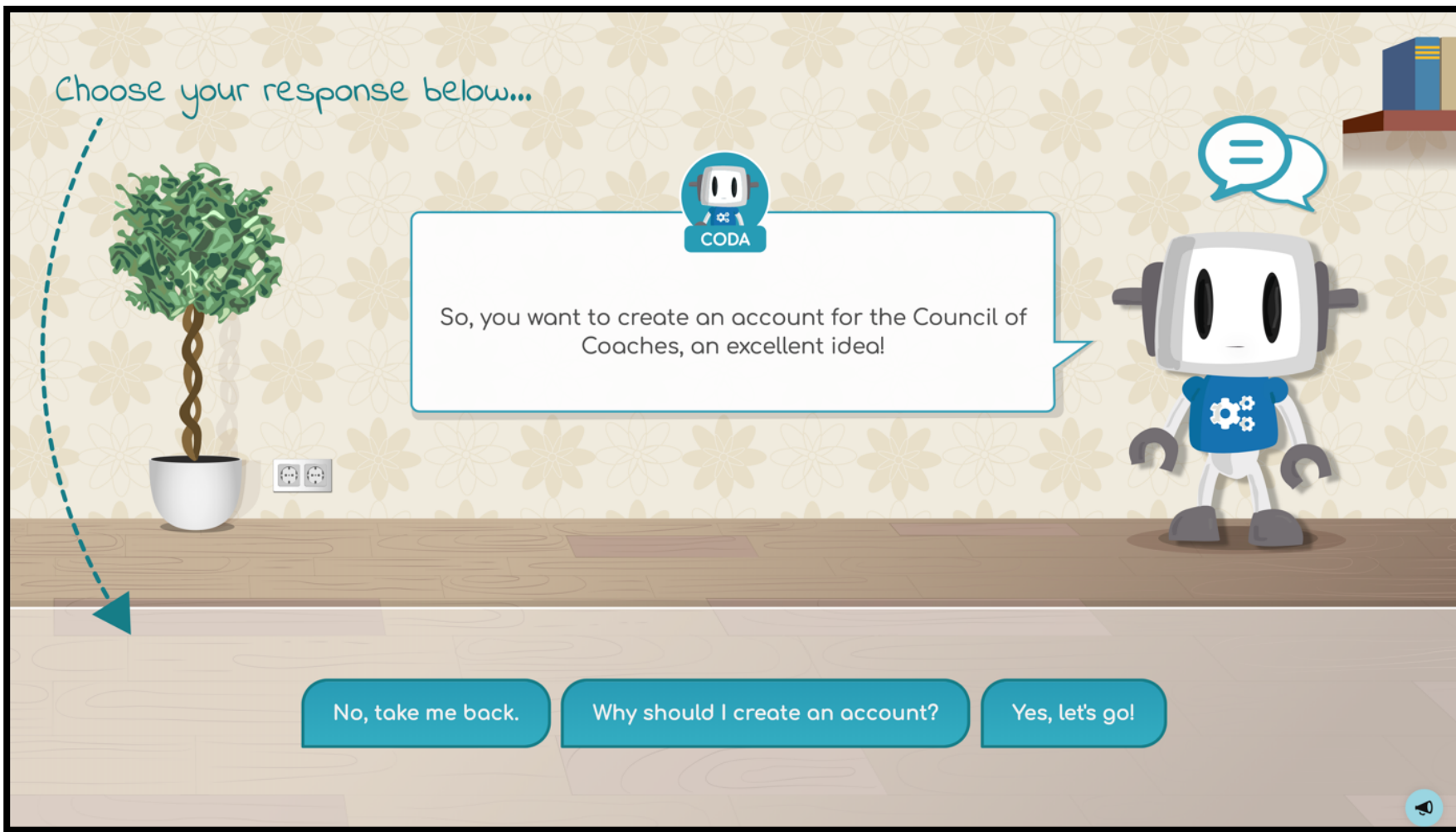
Create your own account, while we introduce you to the conversational user interface...

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Select your personal *Council of Coaches* from a set of 7 virtual agents (Nutrition, Cognition, Social, Support, Activity, Chronic Pain, Diabetes)...
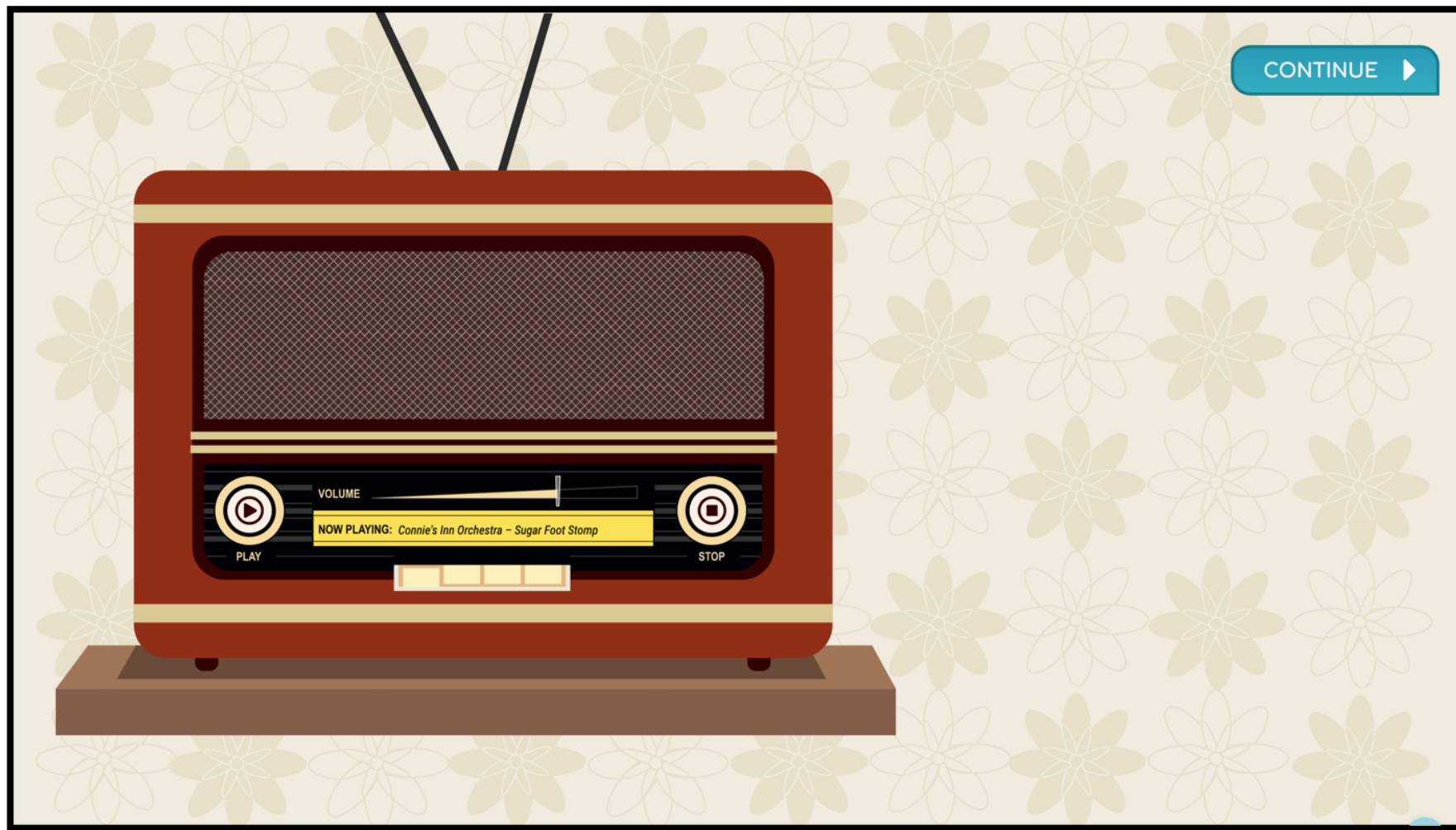
SELECT ALL

CONTINUE ▶

FRANÇOIS DUBOIS
Nutrition

HELEN JONES
Cognition

EMMA LI
Social

CARLOS SILVA
Support

OLIVIA SIMONS
Activity

RASMUS JOHANSEN
Chronic Pain

KATARZYNA KOWALSKA
Diabetes

❗ François Dubois (Based on your intake with Coda, this is a recommended coach)

Occupation: Diet Coach
Likes: Food, cheese, French music
Dislikes: Talking about himself

As a diet coach, François can help you eat and drink healthier. He can help you set dietary goals, and help you stick to them. François lets you keep track of your weekly diet, and has a large collection of recipes that he will gladly help you choose from, should you need cooking inspiration.
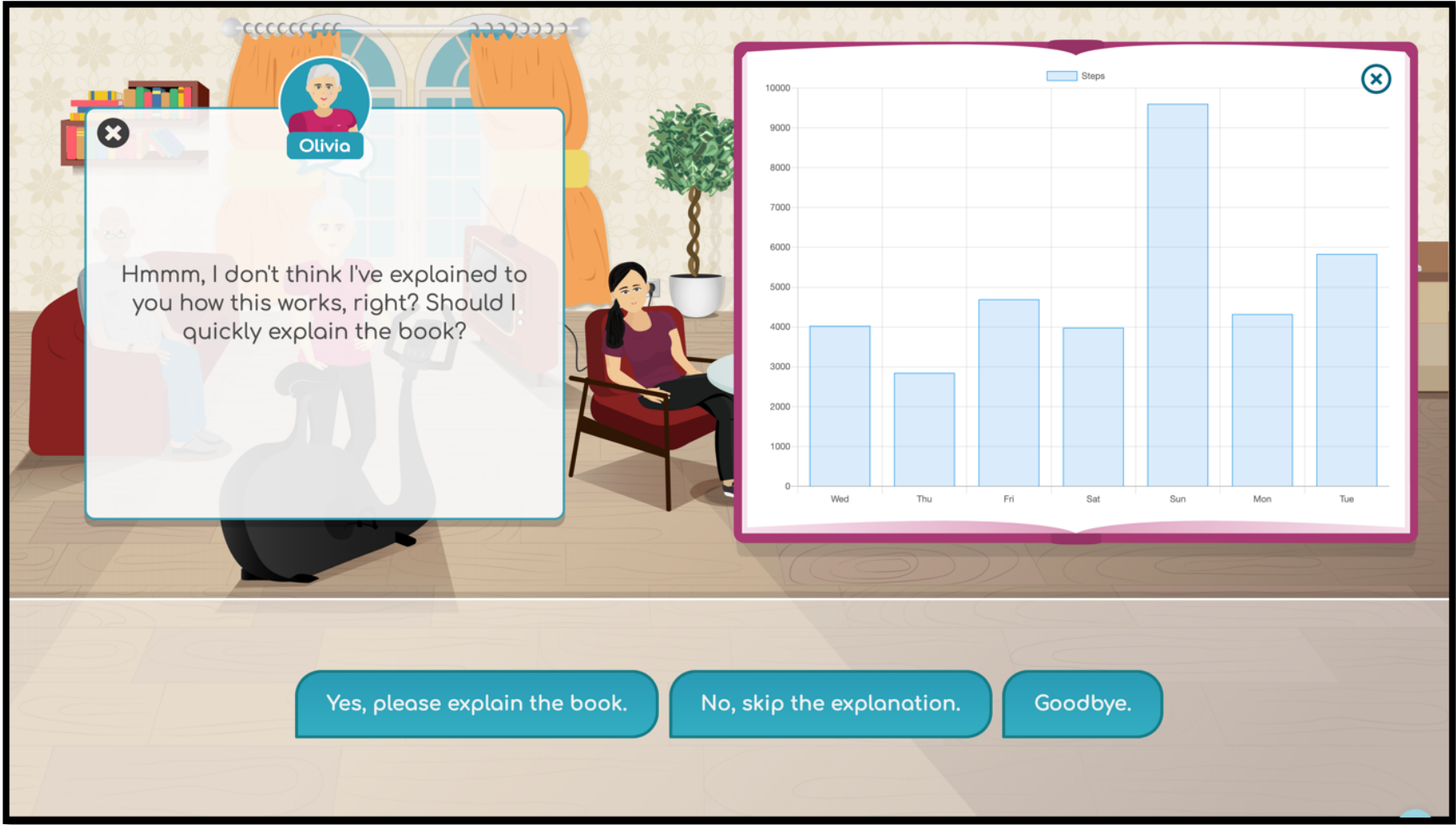
10

Enter the living room where your coaches are waiting to assist you...

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Maybe put on a little background music...?

VOLUME

NOW PLAYING: *Connie's Inn Orchestra – Sugar Foot Stomp*

PLAY

STOP

CONTINUE ▶

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Widgets enable visualising more complex information during conversation (physical activity data, recipe book)...

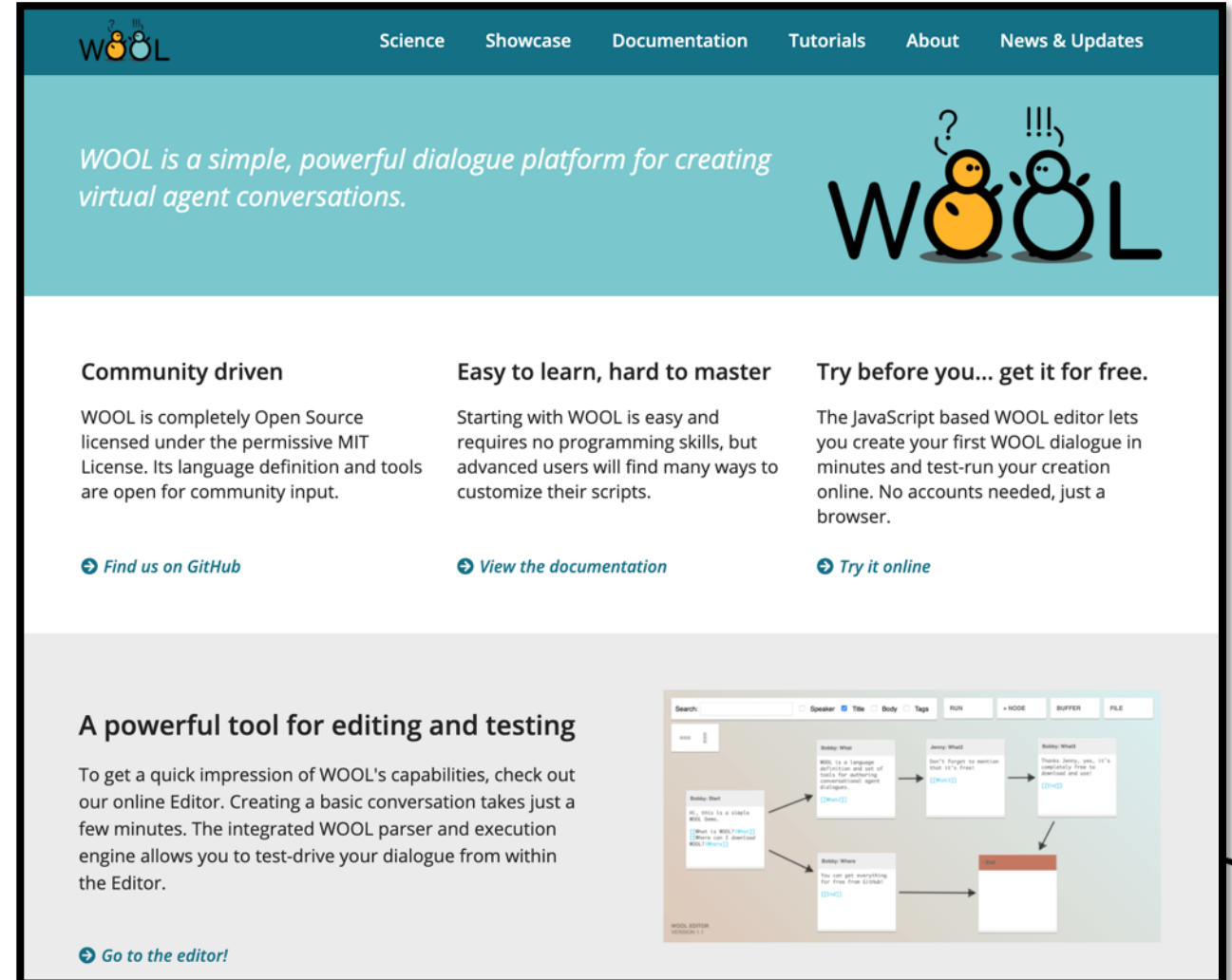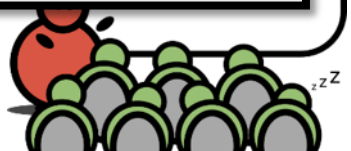But the core content is delivered through interactive dialogues, such as the one you see playing out here...

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Building interactive dialogue with WOOL

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What is WOOL?

- An open-source platform for authoring virtual agent dialogue and running those dialogues in web and mobile apps.
- Focus:
  - Simplicity in authoring dialogue.
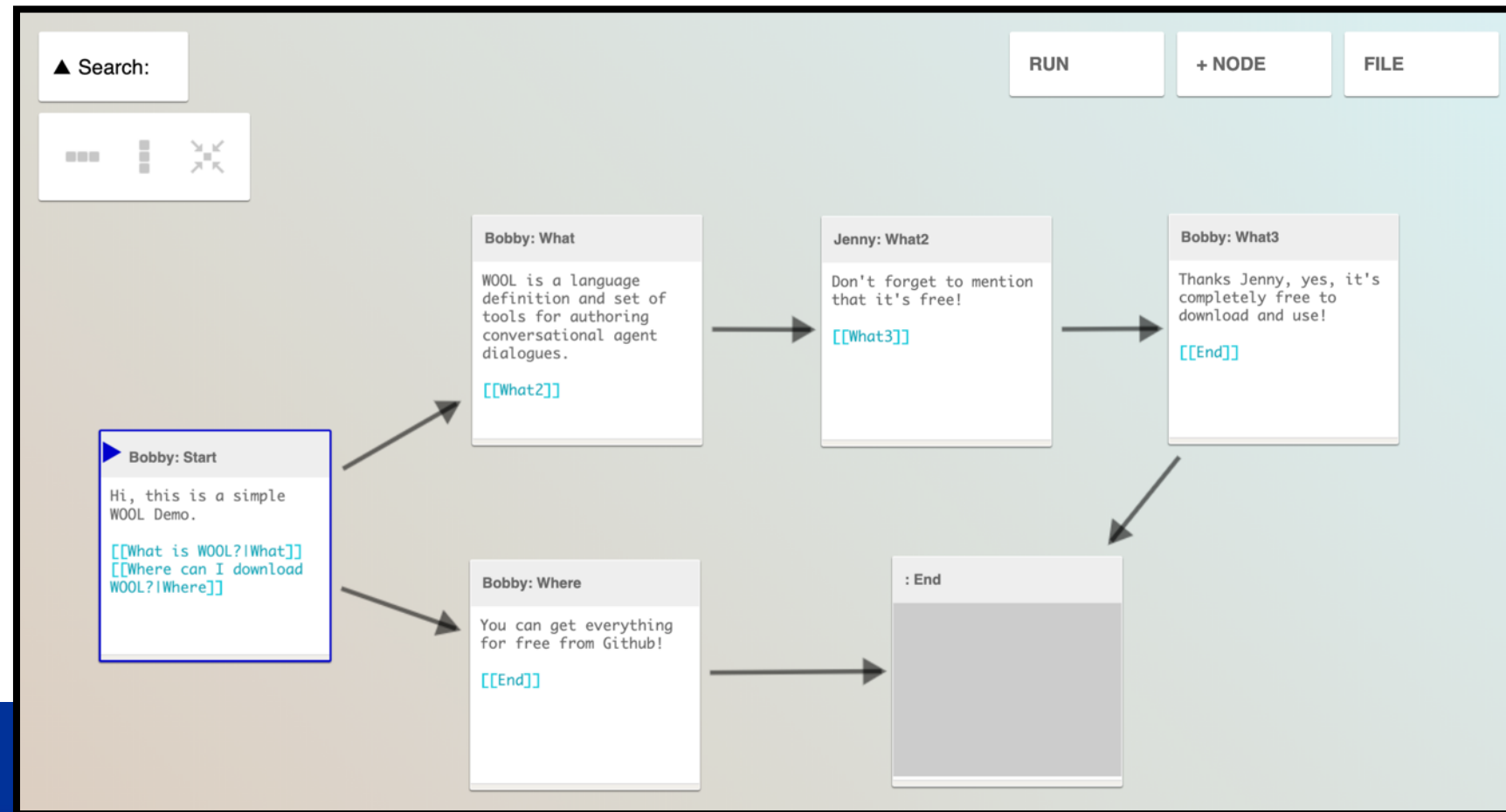 - Powerful for personalization.
  - MIT License (use however you like).

Structure of a WOOL Dialogue

- A connected graphs of Nodes (dialogue steps).
- Each node defines:
  - Speaker (agent).
  - Statements (what the agent says).
  - Replies (what the user can reply, linking to other nodes).

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Inside a Node...
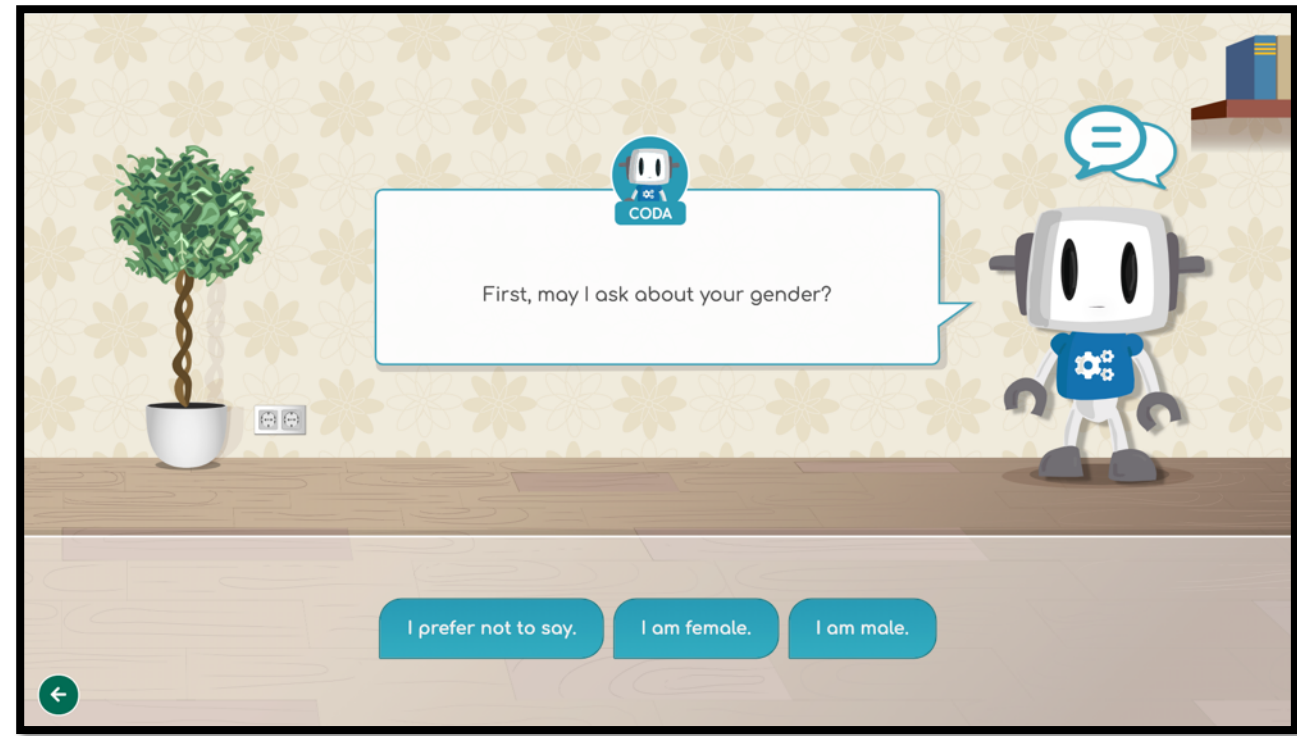
Speaker

Statement

Speaker: **Bobby**   Title: **Start**   Tags:

```
1   Hi, this is a simple WOOL Demo.
2
3   [[What is WOOL?|What]]
4   [[Where can I download WOOL?|Where]]
5
```

Length: 93   Lines: 5 | Line: 0   Col: 0

Replies

Link to other Node "Where"

18

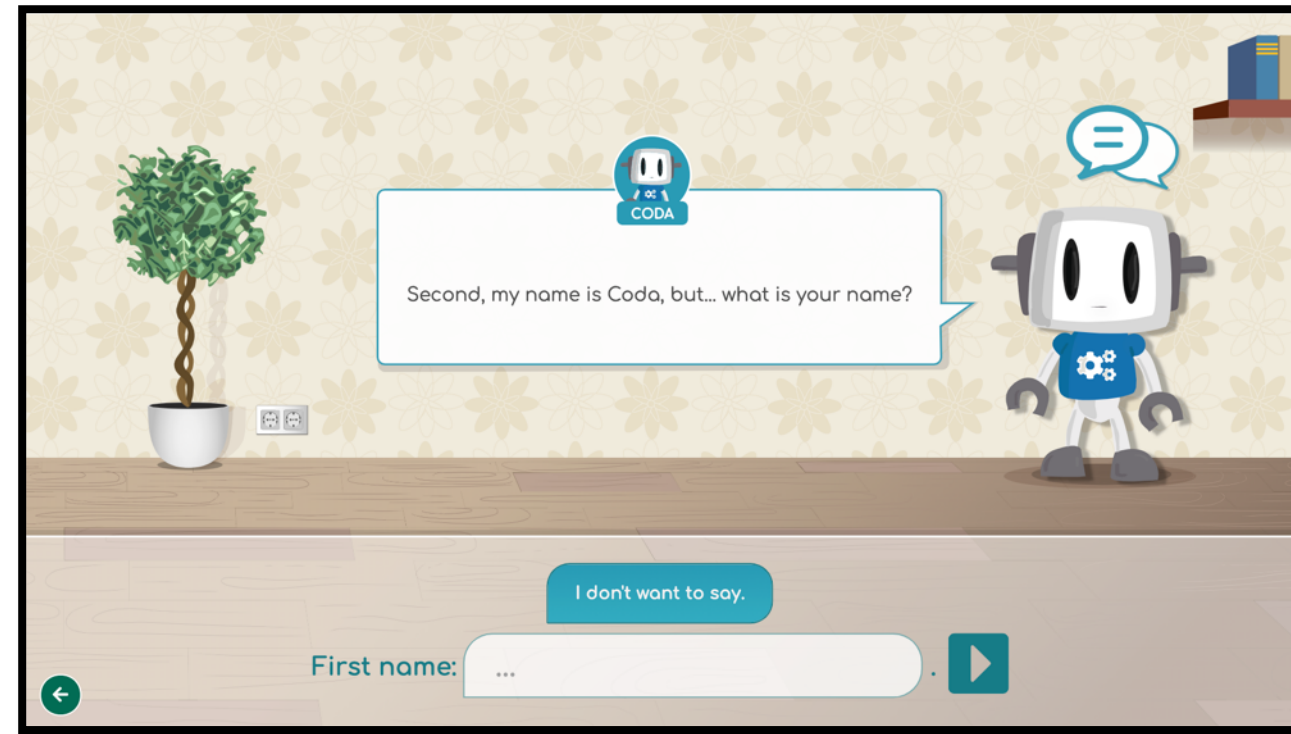# Setting variables...


```
First, may I ask about your gender?

[[I prefer not to say.|AskName|<<set $userGender = "undisclosed">>]]
[[I am female.|AskName|<<set $userGender = "female">>]]
[[I am male.|AskName|<<set $userGender = "male">>]]
```
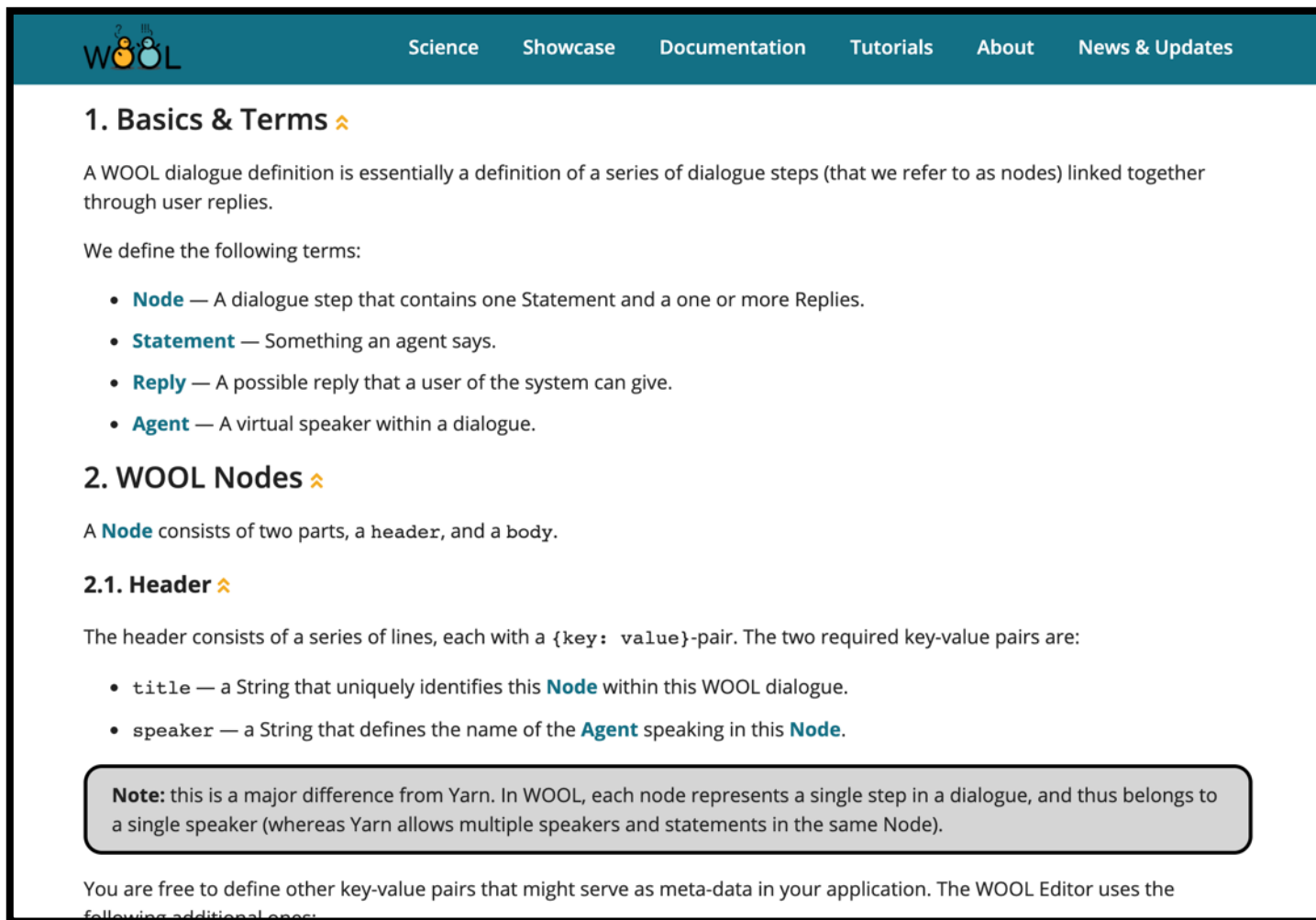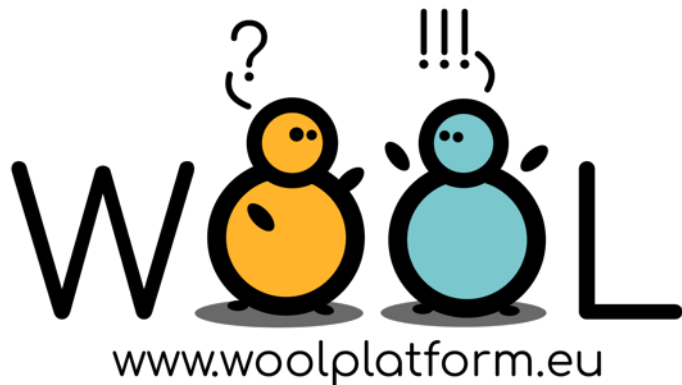
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Setting variables...


```
Second, my name is Coda, but... what is your name?

[[First name: <<input type="text" value="$userFirstName">>.|AskAge]]
```

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Using variables (and control statements)...

```
<<if $userGender == "female">>
   Hello miss $userFirstName!
<<elseif $userGender == "male">>
   Hello mister $userFirstName!
<<else>>
   Hello $userFirstName!
<<endif>>
```

Full language documentation available on the WOOL Platform website.

www.woolplatform.eu

1. Basics & Terms ⌃

A WOOL dialogue definition is essentially a definition of a series of dialogue steps (that we refer to as nodes) linked together through user replies.

We define the following terms:

- **Node** — A dialogue step that contains one Statement and a one or more Replies.
- **Statement** — Something an agent says.
- **Reply** — A possible reply that a user of the system can give.
- **Agent** — A virtual speaker within a dialogue.

2. WOOL Nodes ⌃

A **Node** consists of two parts, a `header`, and a `body`.

2.1. Header ⌃

The header consists of a series of lines, each with a `{key: value}`-pair. The two required key-value pairs are:

- `title` — a String that uniquely identifies this **Node** within this WOOL dialogue.
- `speaker` — a String that defines the name of the **Agent** speaking in this **Node**.

> **Note:** this is a major difference from Yarn. In WOOL, each node represents a single step in a dialogue, and thus belongs to a single speaker (whereas Yarn allows multiple speakers and statements in the same Node).

You are free to define other key-value pairs that might serve as meta-data in your application. The WOOL Editor uses the following additional ones:
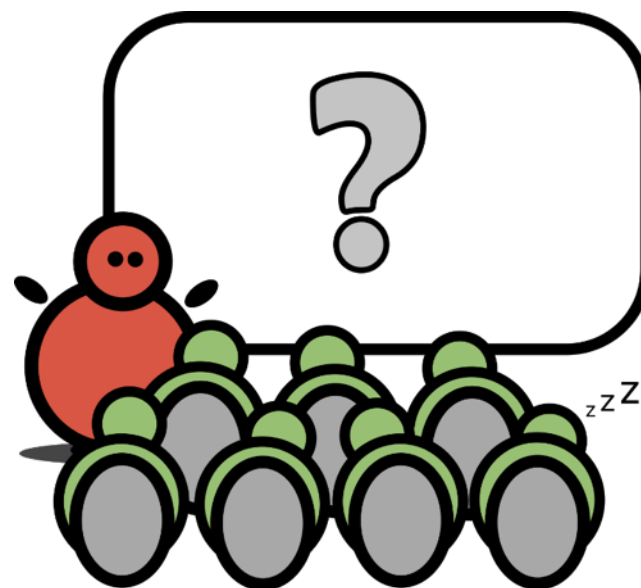
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The Future of WOOL...

- Support for WOOL provided by Roessingh Research and Development and Innovation Sprint.

- Platform is used in various running EU projects...

leaves-project.eu

smartworkproject.eu

pharaon.eu

ihelp-project.eu

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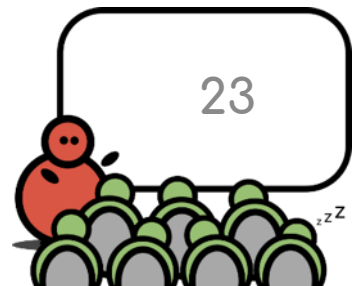
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