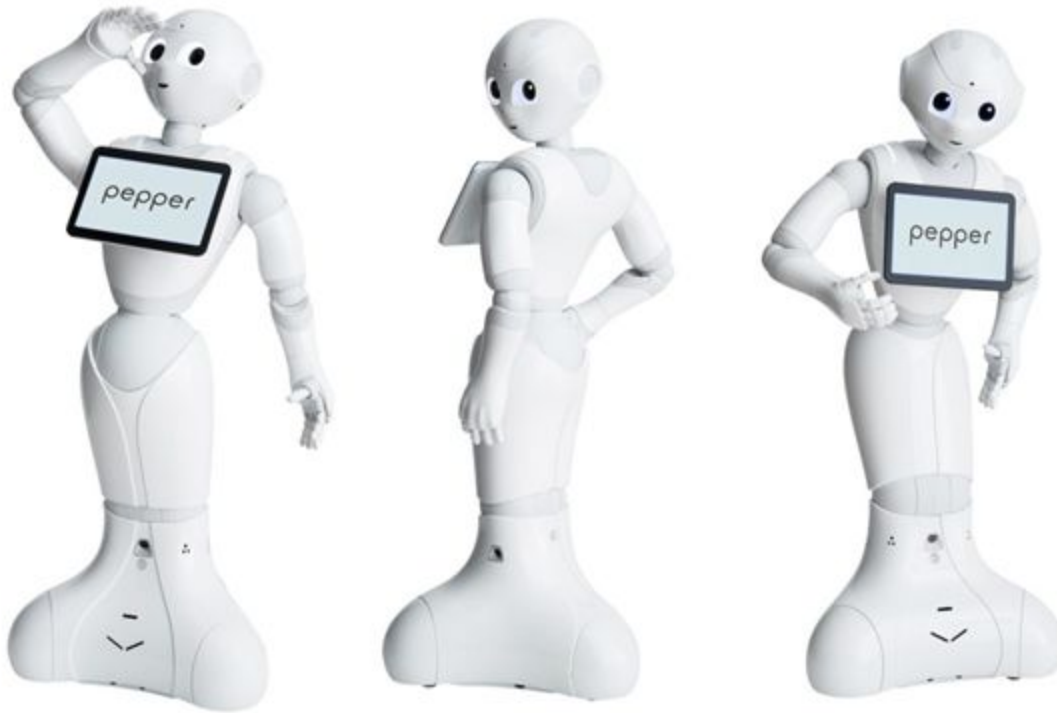# Pepper Assistant

Mykhailo Kuvshynov, Oliver Szollosi, Daria Poimanova

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Created with Choreographe 2.5

Abilities?

1. *Read and show the news.*

2. *Show weather forecast.*

3. *Tablet games.*

4. *Play music by genre.*

5. *Determine the user's mood.*

6. *Dance*

After launch

The robot introduces itself and it greets the user. The user can use all robot functionality from now on.

ROBOT: *"Hello, I am <name>! Ask me 'What can you do?' if you want more info".*

USER: *"What can you do?"*

ROBOT: *"I can play music, read the news, determine your mood, tell you the weather forecast, start simple games, or dance. Tell me if you want to play games, hear recent news or prepare to go outside by listening to the recent weather forecast or simply say I want to listen to the radio if you up to some music or tell the 'end program' to turn off."*
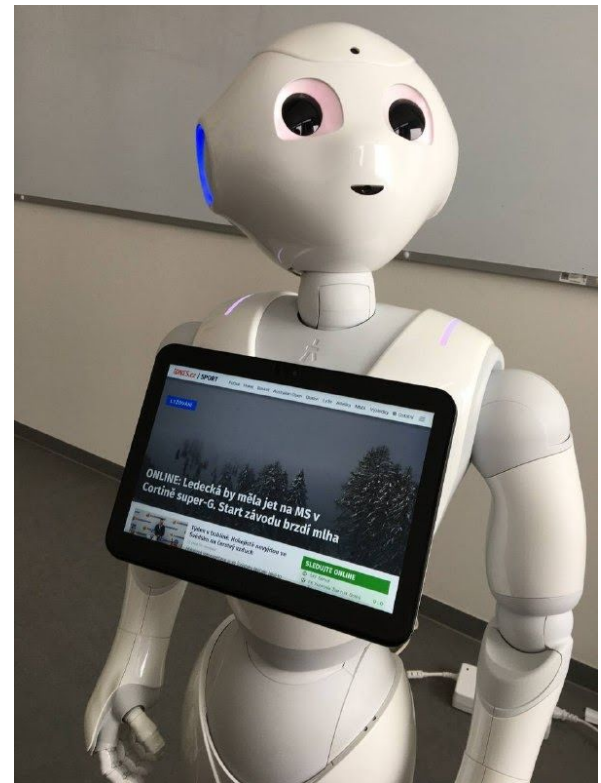
If the word recognition was successful, the robot continues the program, if it fails, the robot keeps listening for the next commands.

News

The user can listen to recent news by saying "I want to listen to the news", "Show me the news" or simply "News" The robot also offers a choice of news among 4 topics: sports, economics, culture, or general news.

ROBOT: *"What news do you want? sports, culture, economy, or general news?"*

USER: *"Sports/Culture/Economics/General"*

Once the user selects one of the options, the robot shows news on the tablet and starts to read them one by one. When the robot reads a few of the news, it asks the user whether to continue or not.

ROBOT: *"Do you want me to keep reading the news?"*

USER: *"Yes/No"*

For reading the news feedparser Python library was used - feedparser.py. [https://pypi.org/project/feedparser/]

```python
import feedparser
import qi
import time
NewsFeed = feedparser.parse(NEWS_TYPES[str(news_type)])

entries = NewsFeed.entries

counter = _from = self.memory.getData("news_counter")
_to = _from + 7

any_more_news = True

if _to >= len(entries): _to = len(entries) - 1
for entry in entries[_from:_to]:
    counter += 1
    if counter >= len(entries) - 1:
        self.tts.say("Toto jsou všechny noviny.")
        any_more_news = False
        break
    else:
        self.tts.say(entry.title.encode('utf-8'))
    #tts.say(entry.title)
    time.sleep(3)

if any_more_news:
    self.tts.say("Chceš abych přečetl další noviny?")
    self.memory.insertData("news_counter", counter)
    self.more_news(news_type)
else:
    self.onInput_onStop()
```
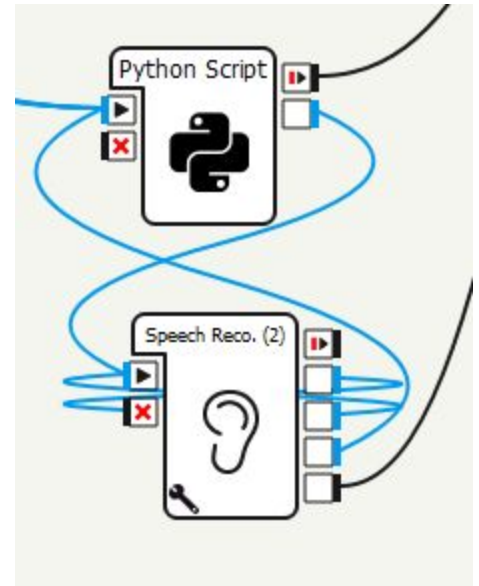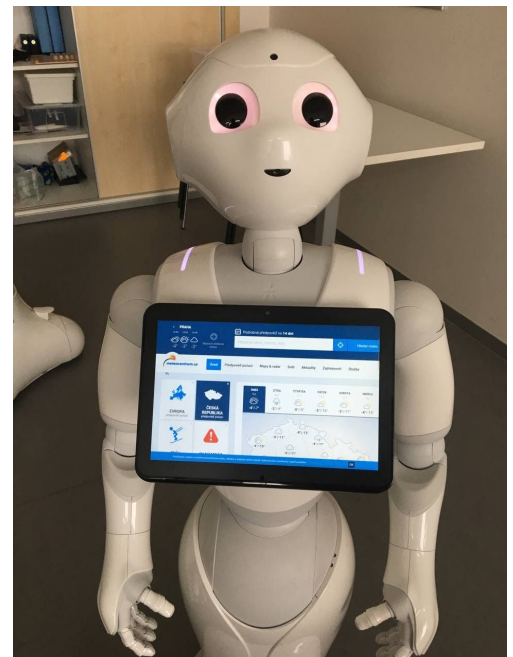

Weather

The Weather function displays the weather page for the Czech Republic and the robot reads the weather forecast. The function can be started with the command "*Show weather*" or simply "*Weather*" from the main loop.

The web page is shown with Show Web View block in Choreographe. [https://www.meteocentrum.cz/]

To read the weather forecast Python library "urllib2" was used to obtain a plain text version of the website.

Less significant information is then filtered from the text and characters such as "°C" or "/" are transcribed into the word form. Using the Text To Speech function, the robot converts text to speech.

Games

The user can play games on the robot's tablet. He/she could choose Flappy Bird or Pexeso.
It works using the Show Web View block, which displays the game in the browser.

USER: *"I want to play games"*

ROBOT: *"Flappy bird or pexeso?"*

USER: <Flappy bird/Pexeso>

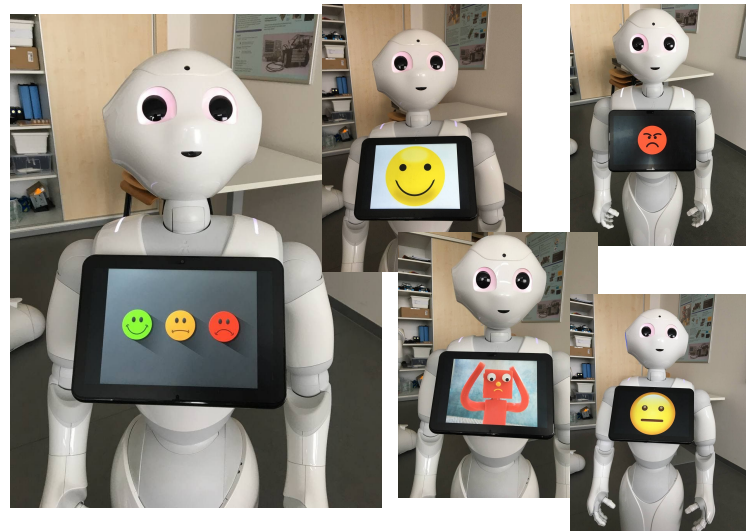The user can end the gaming session by touching the robot's head.

Play music

The robot provides the following genres of radio to choose from: rock, pop, blues, jazz, techno.

USER: *"I want to listen to the radio"*

ROBOT: *"What kind of music would you like?"*
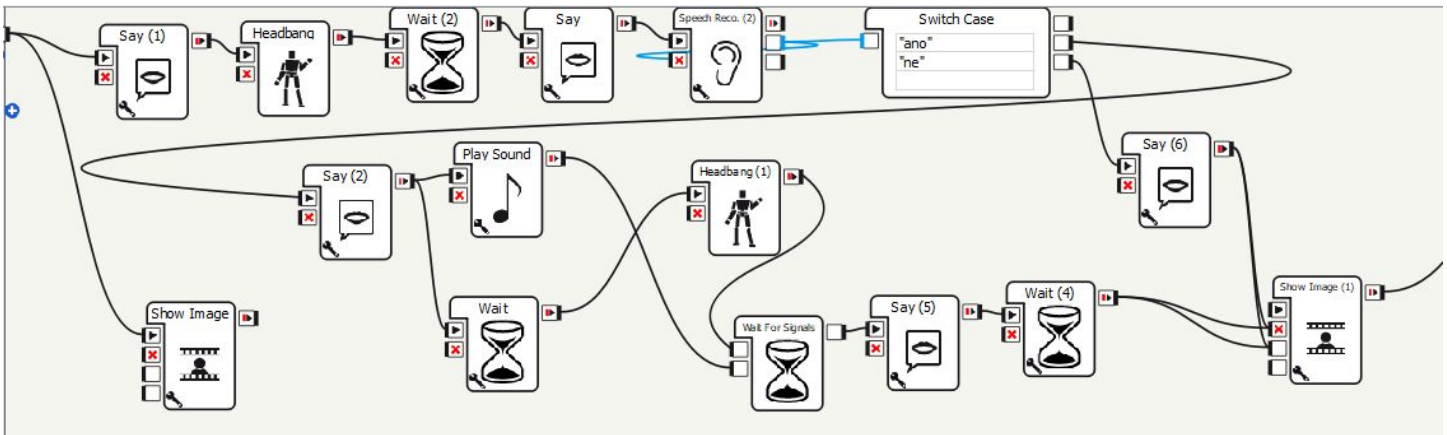
USER: *"rock/pop/blues/jazz/techno"*

Detect mood

If the user wants the robot to detect his mood he can say any of the following commands "Find out my mood" or simply "Mood" and look directly at the robot. When the robot recognizes the mood, it tells the result to the user and shows the appropriate image.

Dance

Here the user will be able to practice dancing with the robot. The blocks from Choreographe have been used for dance movements (Headbang), but in the future it will be possible to expand by adding new ones or creating your own movements.
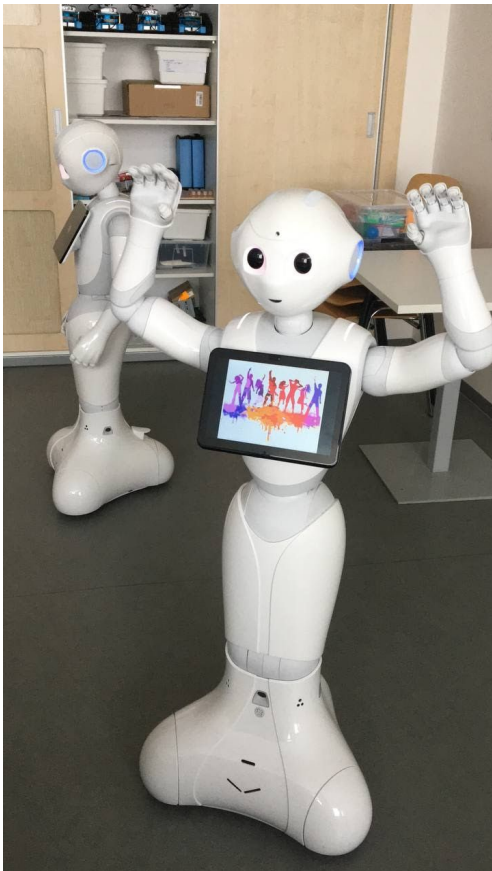

USER: *"I want to dance"* or *"Dance"*

ROBOT: *"If you want to be a professional repeat after me."*

The robot will perform a simple dance and will ask the user if he/she wants to continue with music.

ROBOT: *"Do you want to continue with music?"*

If the answer is "Yes" then it starts the music and dances again and then returns to the main loop, when he says "No" then he returns to the main loop without starting another dance.

Possible future additions:

- Customization of news portal regarding user's preferences.
- Weather for different regions which will be automatically detected based on robot geolocation oer could be chosen by the user.
- More games
- More music
- More possibilities for interaction with the user
- More autonomy
- More functions

Conclusion

As part of the project, we created an application for the Pepper robot, in which we tried to make a useful companion for people who would need it. We have added the following functions such as playing the radio, launching games, reading news and weather forecasts, guessing the user's mood. This project has great potential and we would be pleased to keep working on it.

Reference

[1] Python 2.7, library urlib2. https://docs.python.org/2.7/library/urllib2.html

[2] Weather forecast webpage Meteocentrum. https://www.meteocentrum.cz/

[3] Python 2.7, library feedparses https://pypi.org/project/feedparser/

[4] Pepper documentation. http://doc.aldebaran.com/2-5/index_dev_guide.html