Manual for Pepper- Health Software

This is a manual for how to use the software for controlling Pepper.

Before using the robot please read the manual. Especially the section about “Emergency stop” and “Before Starting”.

Innhold

Emergency Stop

Important:

The software is experimental. If the operator loses control over the robot, press the stop button on Peppers chest. Such faults can occur if internet connection is lost during transport control. That can make Pepper move forward constantly. Button placement showed below in figure 1. If the stop button is hard to reach there is an emergency button located in Pepper’s neck (see figure 2). The emergency button can be pushed through the rubber cover (NB: To start Pepper after using emergency stop, open the rubber cover and turn the button as showed in figure 2).

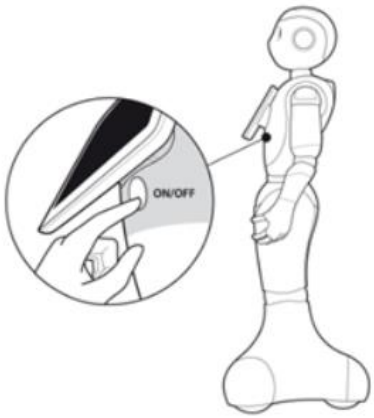


Figure 1 - On/off-button

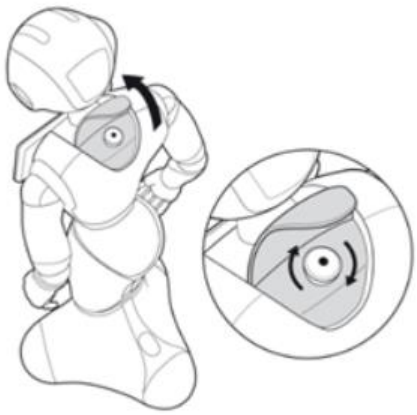


Figure 2 - Emergency button

Pushing the emergency Button:

Before Starting

In addition to the emergency stop there are some additional information that is important to know.

Moving the robot

Pepper cannot drive over door sills (NOR: dørstokker). He can only drive on plane surfaces. During transport (controlling him from keyboard) he stops automatically if an obstacle is to close. If you for some reason want to move Pepper without the keyboard, open the charging lid behind Pepper (by his feet).

Warnings

On Peppers shoulders, there is two LEDs. These will let you know if there is an error or warning on Pepper.

- Yellow light: There is a warning indicating that something is wrong with the hardware (i.e. joints are warm). Turn off the robot, and turn it on again.
- Red light: There is a fault/error on the robot. It will automatically turn off. Turn it off and on.

Joints stuck

If a joint (arm or hip) is stuck in a position and will not go down. Try pushing the "reset joints"-button in the GUI. If it doesn't work try to play an animation. If it doesn't work, turn off and on the robot.

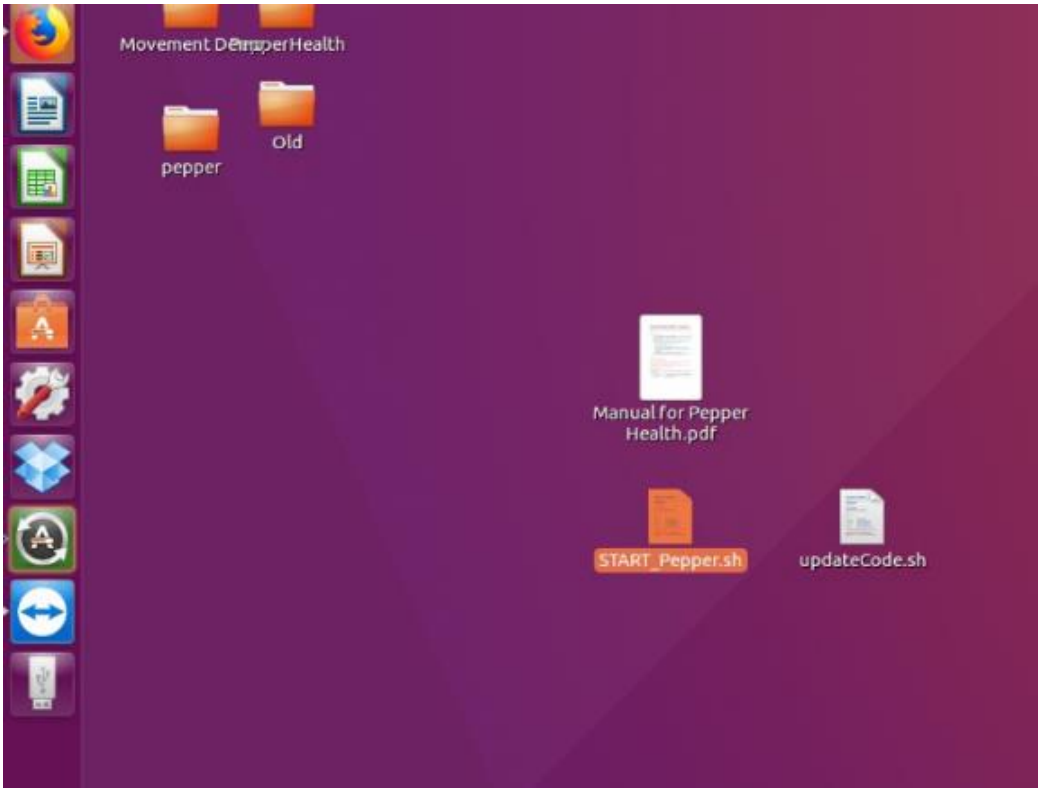
Launching Laptop

The laptop has installed Linux (not Windows), so it might feel unaccustomed. To start the laptop, press the power-button in the upper right corner of the keyboard.
Password might be required. The password is: pepper

After successfully writing the password the desktop will appear. See the next section for how you can start the application. See the section "Getting Remote Help", if problems occur.

Launching The Application

The application is launched by double-clicking the "START_Pepper.sh"-file on the desktop. The file is showed in the below image.



Starting the application should open the connection window showed in the "Connect to Pepper"-section. Before connection to the robot, make sure the robot is turned (follow the next steps).

Turning on the robot

Before starting the robot make sure he stands on a flat surface and has enough space to move his arms.

To turn on the robot you need to press the on-button on Pepper's chest (it is located on his chest, behind the tablet, see figure 1). This will make the LEDs start blinking. The start-up can take everything from 5 minutes to 15 minutes. When Pepper is ready he will say: "**OGNAK GNOUK**".

Nothing happens?
If nothing happens when you push the On-button:

- The battery might be discharged. Plug-in the charger.
- The emergency button might be pushed. Release it by following the instruction in figure 2.

Check IP-address

After Pepper is started up you can check his IP-address by pressing the On-button (quick press). Pepper will than tell you his IP-address.

Connect to Pepper

When you start the software the connection window will open (see figure 3). Check that the computer is connected to the same network as Pepper. Check that the IP-address is correct. Type the correct IP-address and press the connect button.

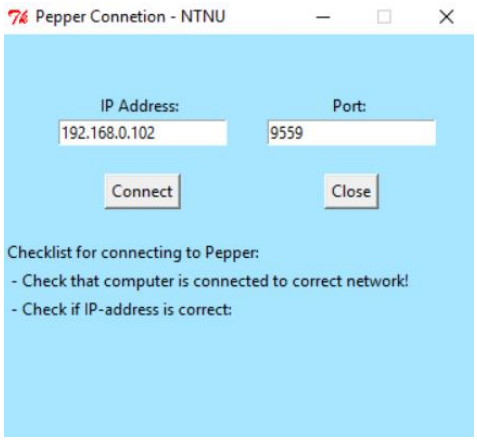


Figure 3 - Connection window

Software Overview

After connecting to the robot this window showed in figure 4 will open (without the coloured frames).

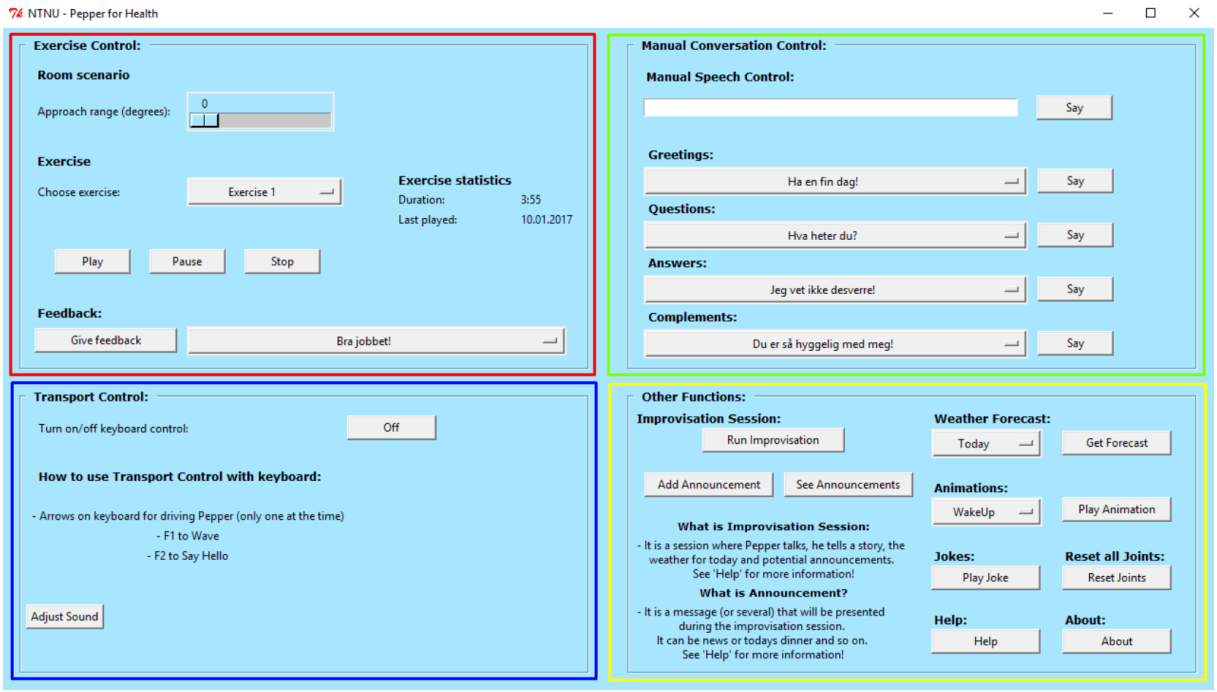


Figure 4 - Software Overview

The frames indicate different controls for the Robot:

- The RED frame shows the exercise control. This gives the opportunity to start and stop exercises, give feedback and control the area of which Pepper approached during exercise. See section “Exercise Control” for more information.
- The BLUE frame shows the transport control. Here you can turn on and off the keyboard control. Turning the keyboard control will enable driving Pepper from the arrows on the keyboard. You can also adjust the sound by pressing the adjust sound button. See section “Transport Control” for more information.
- The GREEN frame shows manual speech control. Here you can type things for Pepper to say, or use one of the predefined messages. See section “Manual speech control” for more information.
- The YELLOW frame shows several functionalities, grouped as other functions. Here you can run an improvisation session, add announcements to the improvisation, get the weather forecast, play animations or play jokes. See section “Other Functions” for more information.

Exercise Control

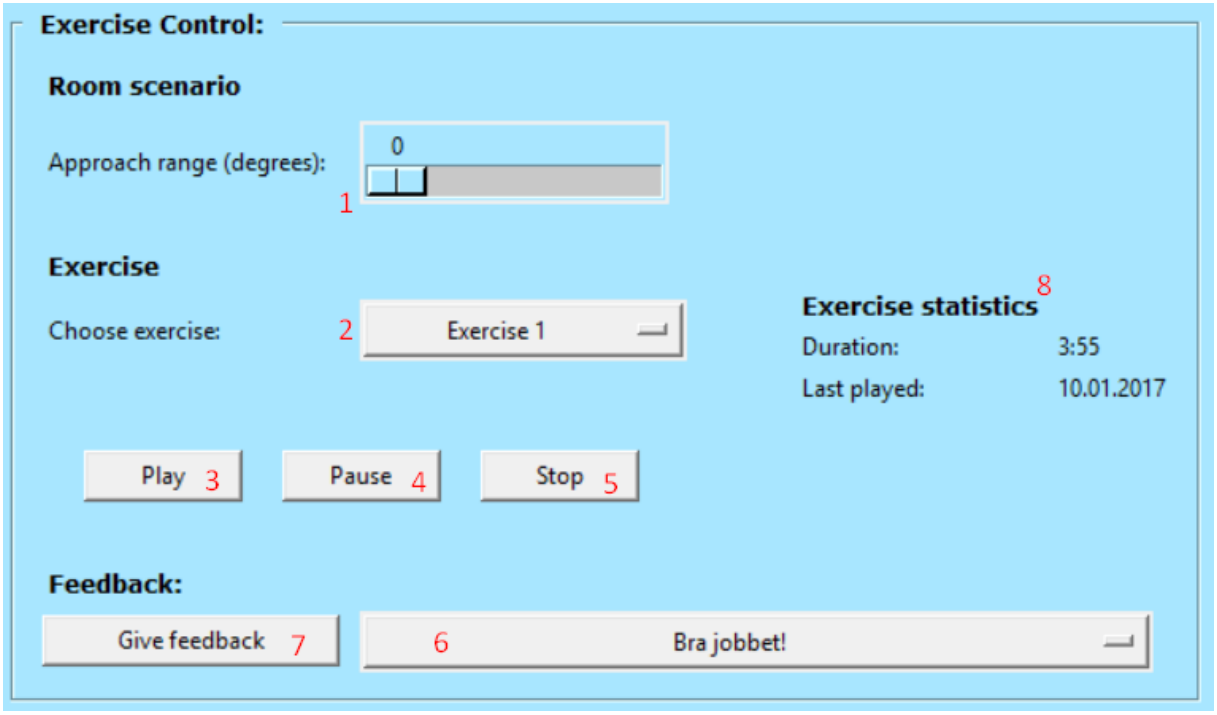
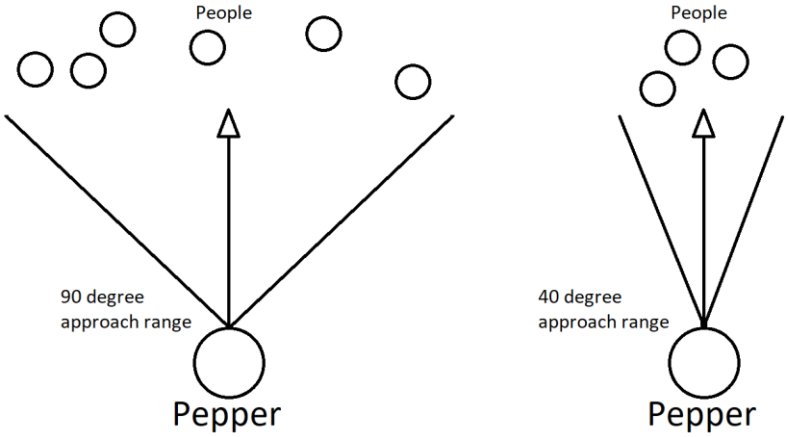


Figure 5 - Exercise Control

1 – Approach range	Approach range lets you adjust the field of approach, <u>in advance</u> of an exercise. If set to 0, Pepper will not rotate during an exercise. If set to 90 he will rotate between -45 and +45 degrees during an exercise. Example showed below: 
2 – Choosing exercise	This menu lets you choose between four exercises. 8 – will show the duration of the exercise and when it was last played. Play the exercises and get familiar with them.
3 – Play exercise	Pushing the play button start the chosen exercise (2). It will play until it is finished if you do not press pause or stop.
4 – Pause exercise	Pushing the pause button pauses the exercise (when Pepper is finished with what he is doing). Press play (3) to continue playing.
5 – Stop exercise	Pushing the stop button stops the exercise.
6 – Choose feedback	Here you can choose from some predefined feedbacks.
7 – Give feedback	Pushing the give feedback button will make Pepper say the chosen feedback on the next opportunity.

8 – Exercise statistics	Exercise statistics shows the approximate duration of the exercise and which date it was last played.

Transport Control

If the robot doesn't move during transport control, check that the charging lid is closed.

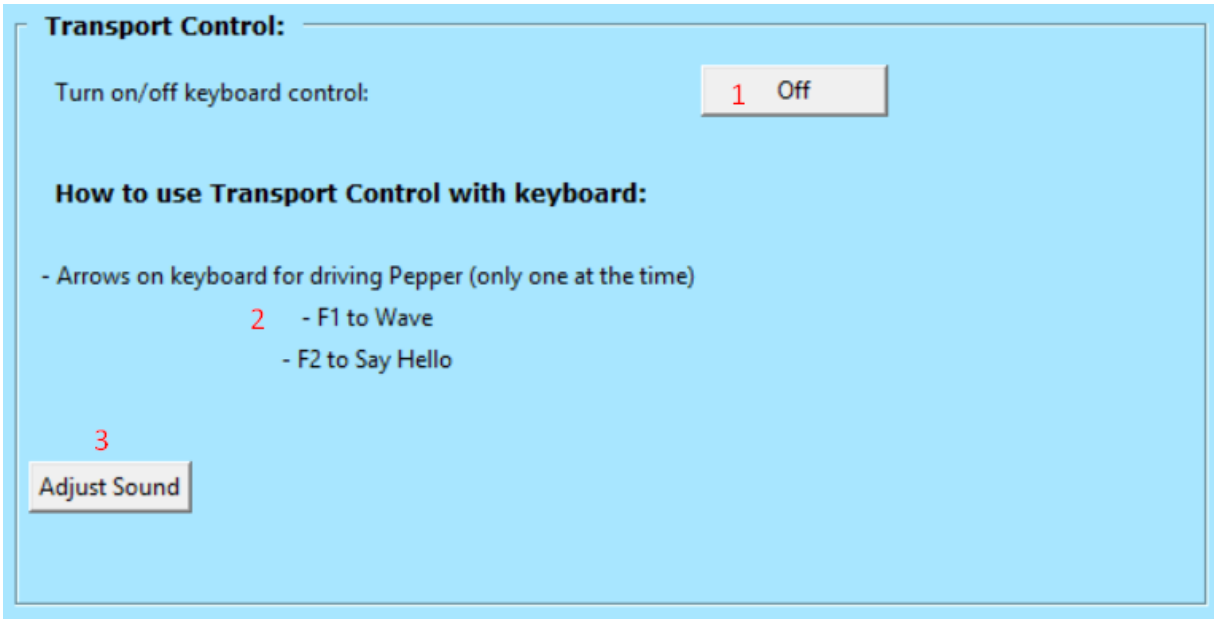


Figure 6 - Transport control

1 – Transport control	Let's you turn on or off the transport control. If transport control is one you can control (drive) the robot with the arrows on the keyboard. Forward arrow makes Pepper drive forward. F1-button makes Pepper Wave and F2 makes him say "Hallo. Her kommer jeg".
2 – Keyboard instructions	Shows the instruction/keys on the keyboard available to control Pepper.
3 – Adjust sound/volume	Pushing the adjust sound button opens a web browser, here the volume can be adjusted. Volume is adjusted with the plus and minus button (100 is recommended). Web page is shown in figure 7. If you need to login: - username: nao, password: ntnu

This is the web page that opens when pushing the adjust sound button.

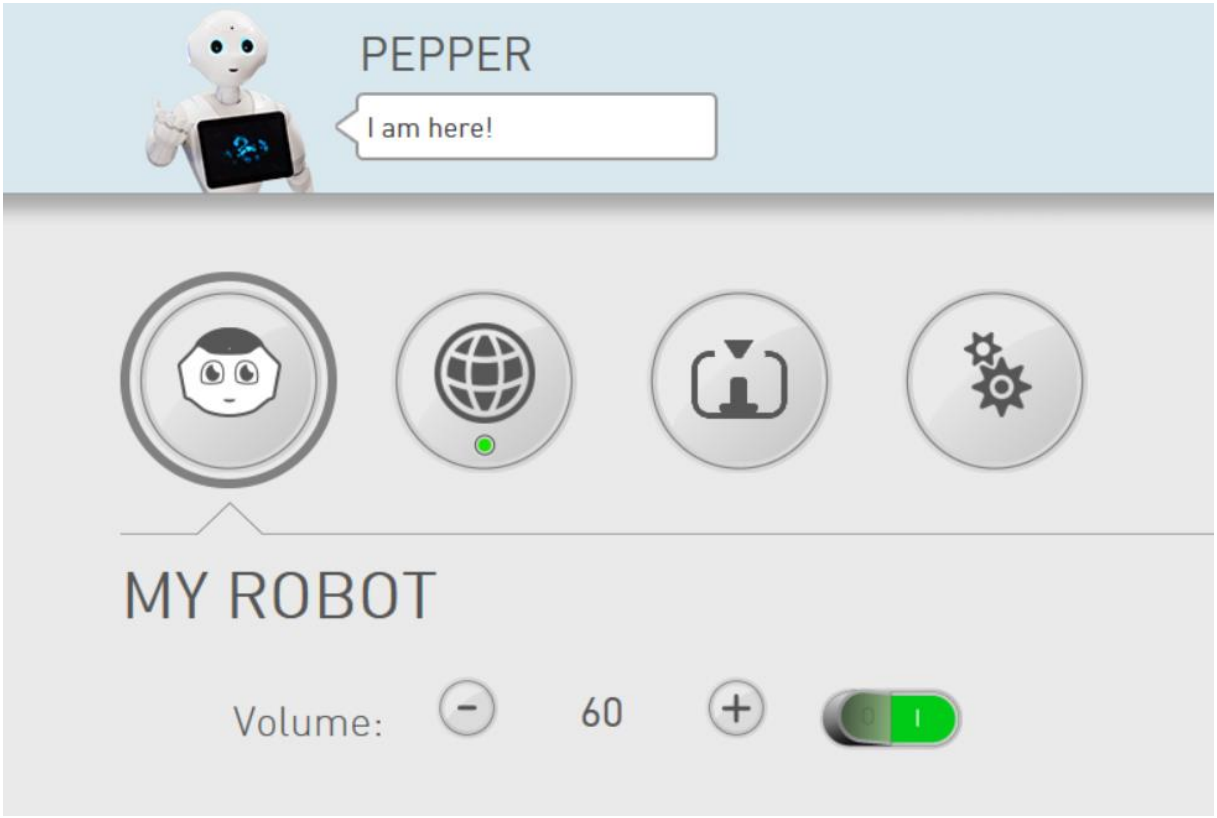


Figure 7 - Volume control web page

Manual Speech Control

Figure 8 - Manual speech control

1 – Speech entry	Here you can write something that Pepper will say. Experiment with how to write for Pepper to talk natural, it might be necessary to use more dots that you normally would.

2 – Say button	Pressing the Say-button next to the speech entry will make Pepper say what is written in the entry.
3 – Greeting options	A set of predefined greetings that can be chosen, push button 7 to say the selected option.
4 – Question options	A set of predefined questions that can be chosen, push button 8 to say the selected option.
5 – Answer options	A set of predefined answers that can be chosen, push button 9 to say the selected option.
6 – Complement options	A set of predefined complements that can be chosen, push button 10 to say the selected option.
7 – Say greeting	Push the button to say the selected greeting.
8 – Say questions	Push the button to say the selected question.
9 – Say answer	Push the button to say the selected answer.
10 – Say complement	Push the button to say the selected complement.

Other Functions

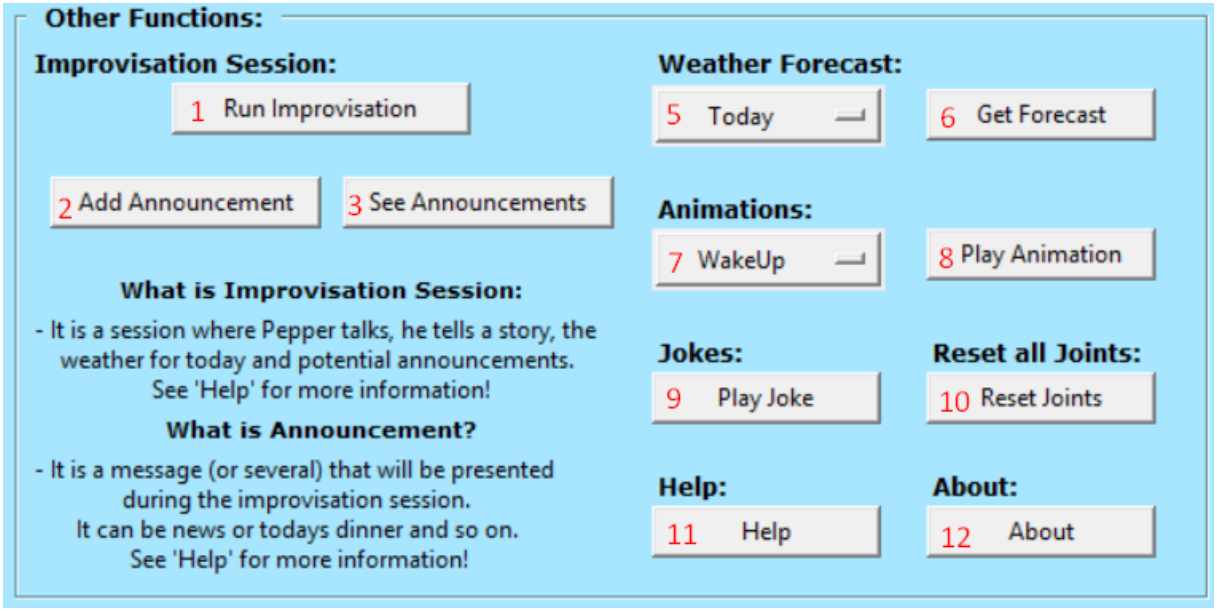


Figure 9 - Other functions

1 – Run improvisation	Runs an improvisation session (read more under “Improvisation session”). An improvisation session makes Pepper say different things and gives him some personality. It takes a couple of minutes. RUNNING AN IMPROVISATION WILL LOCK THE PROGRAM UNTIL PEPPER IS FINISHED.
2 – Add announcement	Announcements are told during the improvisation session. Gives the possibility to add anything from what is for dinner, if something special will happen one of the next days and so on. Read more under “Improvisation session”.
3 – See announcements	See announcements will open a window where you can see the announcements that are added for today’s improvisation. You can test them or delete them.

4 – Explanation	Shows a small explanation of what improvisation and announcements are.
5 – Weather forecast options	Lets you choose if you want the forecast for today, tomorrow or 2-5 days forward in time. You need to push button 6 to make Pepper say the forecast.
6 – Get forecast	Pushing this button will tell the weather forecast specified in the options (5).
7 – Animation options	Lets you choose an animation from a list. Button 8 will play the selected animation.
8 – Play animation	Plays the selected animation.
9 – Play joke	Plays a joke. WARNING: Bad humour. The robotic voice doesn't make it easy to tell jokes. It sounds very monotone.
10 – Reset joints	Resets all joints to normal position. Joints can lock in a position sometimes (due to mechanical reasons), this button can than help to reset them.
11 – Help	Opens a help document (this document).
12 - About	Opens a window which shows information about the software, developers and APIs.

Improvisation session:

As explained an improvisation session makes Pepper say different things and gives him some personality. It takes a couple of minutes.

- Starts with saying a greeting (i.e. Hello everybody. I am so glad to see you).
- Says the added announcements.
- Gives the weather for today, and sometimes tomorrows weather.
- Tells a joke (50% likelihood for telling a joke)
- Tells something about himself. For instance, what Pepper likes to do, where he is from etc.
- Asks if people want to do some exercises. Contact us if you do not want this to be a part of the improvisation.

<u>Announcements</u>

Announcement can be information that you want to give to them in the improvisation session. It can be if something special is going to happen this day, what is on the dinner menu or some interesting news. Messages are added by writing a message in the window (see figure 10) that opens when using the add announcement button. Choose a category (not important), write a message in the entry (2), then push the add-button (3).

When pushing the "See announcements"-button, the window shown in figure 11 will appear. This window will show the announcements that will be told during the improvisation session. You can test them by pushing the test-button (2) or delete them by pushing the delete-button (1).

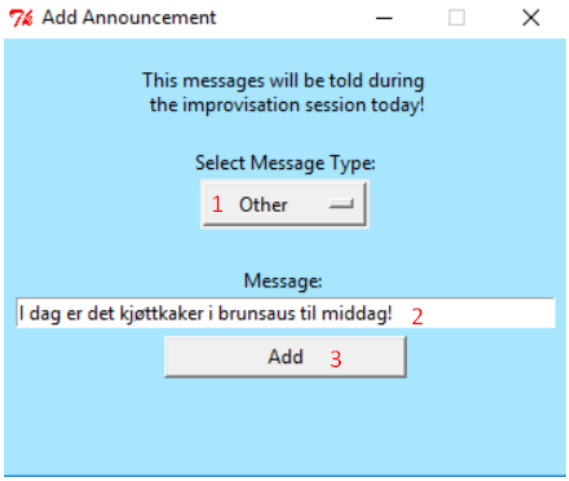


Figure 10 - Add messages

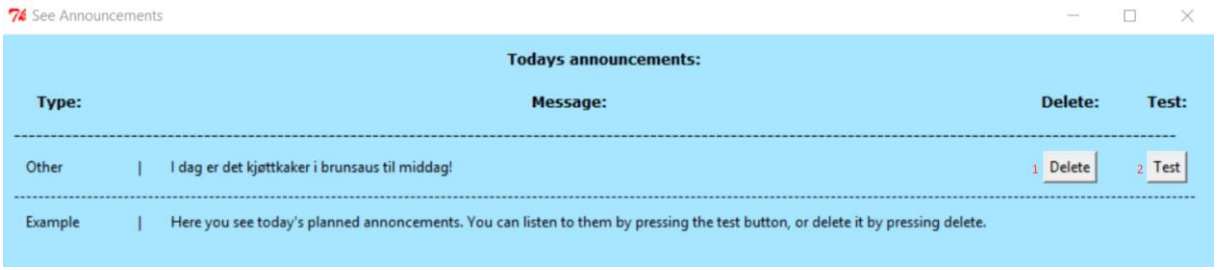


Figure 11 - See today's messages

Getting Remote Help

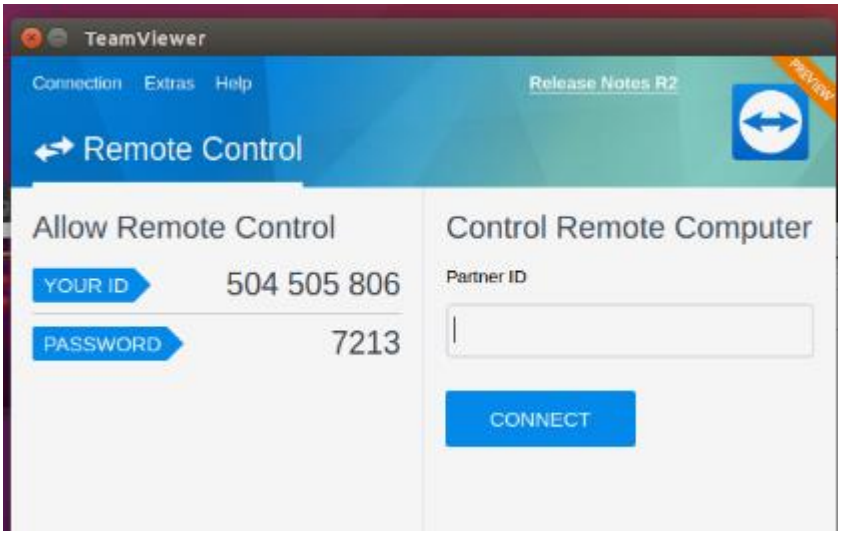
If any problems occur, or the development team needs to update the software contact us.

For us to be able to help remotely you need to:

1. Press search in the top left corner of the desktop:

2. Write Teamviewer, and click the teamviewer symbol.

3. Give us the username and password in the window that appears:



Updating the code – On or request

If we (the development team) for some reason has updated the code. We might ask you to download the latest updates (only on our request)

Click the search button in the top left part of the desktop. Write terminal and click it.

Write in the terminal: cd Desktop/pepper
- Then press enter
- Then write git pull
- Then enter password: ntnuntnu
    - NB: Password will not show up, while writing.
- Press enter.

FAQ

- **I am not satisfied with the predefine messages, what do I do?**
  Contact us. and we will see what we can do. Write which predefined messages you want.

- **It sounds like Pepper speaks English sometimes. Why?**
  Either it is a bug (an error), or the computer has lost internet connection.
  Take note on what he said.

- **Sometimes his arm is stuck in one position, what do I do?**
  Press the reset joints button. If it doesn't work try playing an animation. If it doesn't work, turn off and on the robot.

- **Nothing happens when I use the keyboard. Why?**
  Check if the transport control is turned on.
  Check that the charging lid is closed.

HELP – Something is wrong, what do I do?

- Vivian -
- Girts – gist@ntnu.no -
- Ibrahim – ibib@ntnu.no -
- Magnus – magnus@gribbestad.no - 41569516