

In the previous video we have introduced FlexBE. In this unit, you will learn its basics. Here we will cover only some features of FlexBE, for example creating of sequential state machines, so we encourage you to visit the [FlexBE ROS wiki](#) and the [FlexBE website](#), maintained by its creator Philipp Schillinger, where you can learn much more about this great ROS tool.

FlexBE installation

FlexBE is already installed for you in the course command shell, as part of the Week 0 installation.

IMPORTANT NOTE: We use FlexBE version 2.3.0.

Please, do not update your Flexbe App, we cannot guarantee that the scripts and code used in the videos and for the assignments will work if you are not running version 2.3.0

FlexBE elements

FlexBE consist of different ROS packages, let's know a bit about them:

Main FlexBE tools

The following are the FlexBE tools you will use this week, and they are in packages of your ROS installation

- **Flexbe App** is a friendly user interface for creating our behaviors' state machines

- **flexbe_behaviour_engine** this is the core of FlexBE, responsible for executing the behaviors that you will create with the Flexbe App. However, you will not interact directly with it, but through suitable launch files.
- **flexbe_widget** a tool to create a new repository for your behaviors.

FlexBE packages with behaviors and states

- **General FlexBE states** Your ROS installation also contains packages with available FlexBE states that we can use in our behaviors. This is a very nice feature of FlexBE: some developers have made their state implementations available, so others, like us, can re-use them. In this course we will use states from the generic `flexbe_states`, the `flexbe_manipulation_states` and the `flexbe_navigation_states`
- **States for our factory simulation:** in this week downloads we provide you with additional FlexBE states, in `hrwros_factory_states`, that are used in the behaviors you will explore in the videos and the assignments.
- **Behaviors for our factory simulation:** the repository `hrwros_factory_behaviors` in this week downloads is your repository for the factory project, and is **your FlexBE repository** to develop robot behaviors. It already contains behaviors that are used in the videos and for the final assignment.

Note: Normally, your repository for Flexbe behaviors would not exist, but you can create it using the `flexbe_widget`, however, **PLEASE DO NOT CREATE IT**, since we have already done it for you.

FlexBE App

To create robot behaviors in a visual way, we will use the FlexBE App

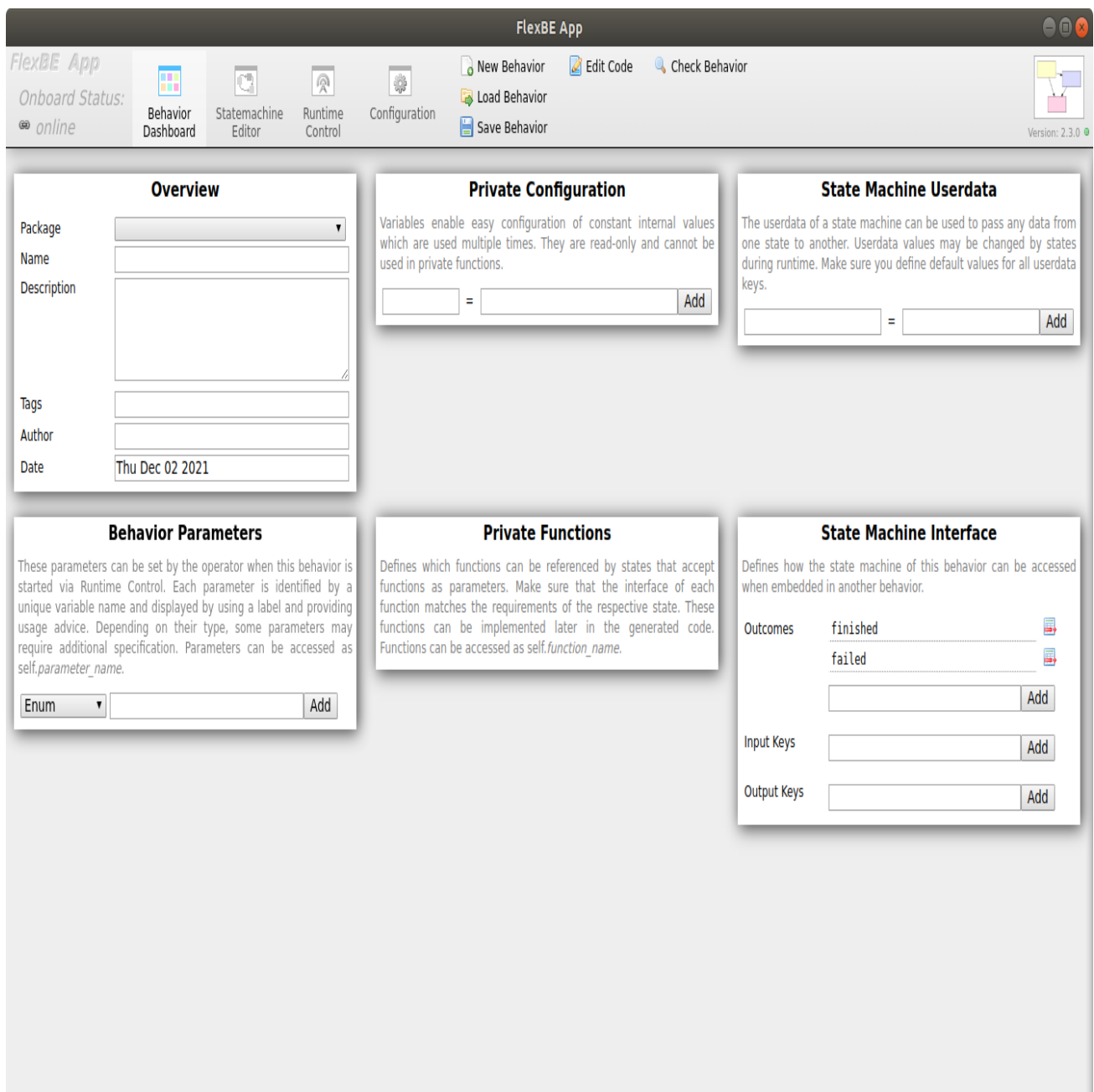
To open the FlexBE App in offline mode, execute the following command (you need to download the Week 6 files and follow the instructions there):

```
$ rosrn flexbe_app run_app --offline
```

You can also run the full FlexBE system by running

```
$ roslaunch flexbe_app flexbe_full.launch
```

With both commands, you should see the FlexBE App user interface. We will explain it in detail later.



Ok, so we are ready to start creating robot behaviors with FlexBE!!