This is the repeatability evaluation package for the tool paper "Verse: A Python library for reasoning about multi-agent hybrid system scenarios".

The artifact is a virtual machine that contains instruction and software to reproduce all experiment results in the paper.

The admin password of the virtual machine is

```
cav2023-re
```

The `README.txt` file in the artifact zip file contains instruction to reproduce all experiments in the paper. A PDF version of the file can be found in `artifact_evaluation/artifact_evaluation.pdf`.

Artifact URLs

The DOI of the artifact is

```
10.6084/m9.figshare.22679485
```

The link to the artifact on Figshare is:

https://figshare.com/articles/software/Verse_A_Python_library_for_reasoning_about_multi-agent_hybrid_system_scenarios/22679485

The link to the artifact on Google drive is:

https://drive.google.com/file/d/1SfABQ1bkFXijCpANfODQAMdvFnBXpw0a/view?usp=sharing

A detailed interactive tutorial for verse can be found at:

https://github.com/AutoVerse-ai/Verse-library/blob/tutorial/tutorial/Verse_Tutorial_Drone.ipynb

and a PDF version of the tutorial is included in the artifact as "tutorial.pdf".

The tool is publicly available at

https://github.com/AutoVerse-ai/Verse-library

Artifact SHA

The SHA of the artifact zip file is

```
f480732cbda706f9dffc967005813af0ebcef48e50f1417a5b50871d9cb14ceb
```

Artifact Reusability

The software is available outside of the provided virtual machine. It can be installed on any machine (Windows, MAC, Linux) with Python3.8+.

To install the library, first clone the repository from github

```
https://github.com/AutoVerse-ai/Verse-library.git
```

Then go to the root directory of the artifact

```
cd Verse-library
```

and install the library using pip

```
python3 -m pip install -e .
```

There are many examples in the `./demo` folder. To run an example, one can in the root directory of library run

```
python3 demo/cav2023/exp1/exp1.py
```

Tutorial

The library also comes with an interactive tutorial for how to run create scenarios using the library. The tutorial is located at `./tutorial/tutorial.ipynb`. To run the tutorial, first go to the tutorial folder

```
cd tutorial
```

Then install additional requirements for the tutorial using command

```
python3 -m pip install -r requirements_tutorial.txt
```

The tutorial can then be run using jupyter notebook

A pdf version of the same tutorial is also provided in `./tutorial/tutorial.pdf`