Case studies for the paper “Evrostos: The rLTL Verifier”.

These are the instructions to replicate the case studies for the paper “Evrostos: The rLTL Verifier”.
You will use Evrostos: The rLTL Verifier. Instructions on how to install Evrostos are in the README.md file.

1. Section 2: Motivational Example:

The files needed for this simulation are:

- input_mot_example.txt
- mot_example_aac.smv

Run the following on the terminal from inside the Evrostos-1.0 directory:

```
./evrostos -I
```

The terminal looks as follows:

```
Enter the rLTL specification input file name (.txt):
```

You enter:
./examples/input_mot_example.txt

```
Enter the model file name (.smv):
```

You enter:
./examples/mot_example.smv

```
Enter file name (.txt) for the report:
```

You enter:
mot_exampleReport.txt

Now the result of the rLTL model checking is in the report file.

2. Section 5: Telephone System Model (rLTL):

The files needed for this simulation are:

- inputPhone_rLTL.txt
- telephone.smv

Run the following on the terminal from inside the Evrostos-1.0 directory:

```
./evrostos -I
```

The terminal looks as follows:

```
Enter the rLTL specification input file name (.txt):
```

You enter:
./examples/inputPhone_rLTL.txt

```
Enter the model file name (.smv):
```

You enter:
./examples/telephone.smv

```
Enter file name (.txt) for the report:
```

You enter:
telephone_rLTL_Report.txt

Now the result of the rLTL model checking is in the report file.

3. Section 5: Automated Aircraft Control System Model (Original) (rLTL):

The files needed for this simulation are:

- inputAAC_rLTL.txt
- aac_original.smv

Run the following on the terminal from inside the Evrostos-1.0 directory:

```
./evrostos -I
```

The terminal looks as follows:

```
Enter the rLTL specification input file name (.txt):
```

You enter:

./examples/inputAAC_rLTL.txt

```
Enter the model file name (.smv):
```

You enter:

./examples/aac_original.smv

```
Enter file name (.txt) for the report:
```

You enter:

aac_original_rLTL_Report.txt

Now the result of the rLTL model checking is in the report file.

4. Section 5: Automated Aircraft Control System Model (Abstract) (rLTL):

The files needed for this simulation are:

- inputAAC_rLTL.txt
- aac_abstract.smv

Run the following on the terminal from inside the Evrostos-1.0 directory:

```
./evrostos -I
```

The terminal looks as follows:

```
Enter the rLTL specification input file name (.txt):
```

You enter:

./examples/inputAAC_rLTL.txt

```
Enter the model file name (.smv):
```

You enter:

./examples/aac_abstract.smv

```
Enter file name (.txt) for the report:
```

You enter:

aac_abstract_rLTL_Report.txt

Now the result of the rLTL model checking is in the report file.

5. References:

- Evrostos: The rLTL Verifier
  Tzanis Anevlavis, Daniel Neider, Matthew Philippe and Paulo Tabuada
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- A. Cimatti, E. Clarke, E. Giunchiglia, F. Giunchiglia, M. Pistore, M. Roveri, R. Sebastiani, and A. Tacchella.
  "NuSMV 2: An OpenSource Tool for Symbolic Model Checking".
  In Proc. CAV'02, LNCS. Springer Verlag, 2002.

- Telephone System Model:
  Malte Plath and Mark Ryan. 2001. Feature integration using a feature construct. Science of Computer Programming 41, 1 (2001), 53 – 84.

- Automated Air Traffic Control System Model:
  Yang Zhao and Kristin Yvonne Rozier. 2014. Formal Specification and Verification of a Coordination Protocol for an Automated Air Traffic Control System. Sci. Comput. Program. 96, P3 (Dec. 2014), 337–353.