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I used Python to create a Turing complete Sandbox program. For Turing completeness I used **Exec** function in-built in Python.

The exec statement is used to execute Python statements which are stored in a string or file. The sandbox program file is **sandbox.py**.

To test the Turing completeness of my program, I wrote a Python code named **turing_test.py** in which I generate a Fibonacci series and execute a simple print statement.

In order to sandbox my program, I used keyword whitelisting in order to avoid keywords such as "file", "eval", "execfile". Only the keywords listed in the whitelist will be executed. To test the keyword whitelisting, the program is **keyword_whitelist_test.py**. **In the code, I'm trying to write into a file using "file" function.** Since the "file" keyword is not the whitelist, a NameError will be raised.

I also used import whitelisting so that only certain modules can be imported. To test this, the code is **import_test.py**. For a module not present in the whitelist, an import error is raised. In the example, since "math" module is not present in the whitelist, an ImportError is raised.

Reference: http://web.mit.edu/jesstess/www/pytennessee_sandbox.pdf