DIT636 / DAT560 - Model-Based Testing Activity

Consider the following class, responsible for managing an electronic lock for a safe.

To unlock the safe, a user must first insert a physical key. The software will then issue a command to open a panel, where a user will then enter a password.
- If the password is correct, the lock will be released and the safe will open.
- If the password is incorrect, an alarm will be raised. To stop the alarm, the user must enter the correct password.

To relock the safe, the user must close the door and press the "lock" button on the keypad. The panel will close. The user may then remove their key. This will complete the locking process.

Method	Description
openPanel()	Checks that the key is inserted and opens the panel if it is.
validatePassword (password)	Checks whether the password is correct.
closePanel()	Closes the panel, as long as the door is closed and the lock button has been pressed.
lockSafe()	Locks the safe, as long as the panel has been closed.

1. **Design a finite state machine based on this class.**

2. **Derive test input (as a series of method calls and input conditions - e.g., a key has been inserted) that achieves state coverage of the model.**
   (if you did not finish your own model, there is a sample solution in the slides)

3. **For the same model, derive test input that achieves transition coverage (if your previous tests did not).**