Week 5 Interactive Assignment

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**11.1. There are two different types of “states” that behavioral models can represent. What are they?**

The two types of states represented in behavioral models are a passive state or an active state. The current state of all of an object’s attributes is their passive state, while the active state is their status while processing or transforming (Pressman & Maxim, 2015, p.204).

**11.2. How does a sequence diagram differ from a state diagram? How are they similar?**

Sequence diagrams and state diagrams are similar in that they both show the passive and active states of an object. Where they differ, is the sequence diagram shows how events cause the flow between objects (Pressman & Maxim, 2015, p.204-206).

**11.3. Suggest three requirements patterns for a modern mobile phone and write a brief description of each. Could these patterns be used for other devices? Provide an example.**

phoneUnlock() – the phone may be unlocked by a PIN/password or biometrics (e.g., fingerprint or facial recognition). This can also be used on computers, tablets, doors, windows, or anything elso with an electronic locking mechanism.

networkConnect() – modern mobile phones need to be able to support a number of networks to connect to such as GSM, 3G, 4G, 5G, etc. The phone needs to detect which type of signals it is in range of, select the best one available, and connect to it. The network in which it is connected can change rapidly, particularly if moving in a vehicle. This pattern can apply to any device that connects to a cellular network including cars, tablets, phones, and computers.

deviceAccelerometer() – Modern mobile phones are capable of knowing whether they are vertical, horizontal, or moving up, down, left, right, forward, or backward. Actions can be assigned by the phone or various apps to be performed based on its position (e.g., lock if horizontal or turn left or right by tilting the phone while playing a racing game). This pattern is widely used in other domains like drones/quadcopters or self-driving cars.

**References**

Pressman, R. S., & Maxim, B. R. (2015). [*Software engineering: A practitioner's approach*](https://ashford.instructure.com/courses/81372/modules/items/4111209) (8th ed.). Retrieved from https://www.vitalsource.com