**ECU On**

**ECU off**

engine started

engine turned off

**Assumptions:**
currentPosition is a double. Value of 1 is flooring the gas pedal and value of 0 is completely released gas pedal
We assume that there is a seperate pedal system or sensor that the ECU can access currentPosition from. Since Task 1 only asks about the ECU we didn't include a pedal system diagram.

Idle
**throughout** deliver and ignite minimal lean air/fuel mixture

**gas pedal pressed [currentPosition > 0]**

**gas pedal released [currentPosition == 0]**

**gas pedal position changed [currentPosition != historyPosition && currentPositon != 0]**

**Calculating Torque**

Checking pedal postion

**pedal position checked**

H

Calculating air, fuel supply, and ignition point

**air, fuel supply, and ignition point calculated**

**Adjusting air**

more air needed    less air needed

no adjust needed

Adjusting more air e

Adjusting less air

adjusted higher

adjusted lower

**Adjusting fuel**

more fuel needed    less fuel needed

no adjust needed

Adjusting more fuel

Adjusting less fuel

adjusted higher

adjusted lower

**Adjusting ignition**

higher ignition point needed    lower ignition point needed

no adjust needed

Adjusting higher ignition

Adjusting lower ignition

adjusted higher

adjusted lower

adjustment finished