PHEV Output

One output is from each visitor and another output is from each **observer** object.
Each checking result from the first visitor is stored and tracked for other two visitors with a **singleton** object.

2022, OODP

Engine Status	System Message	Log/Observer Message	
oil	Engine Oil To Be Checked on Gasoline Engine	Suggesting Oil Change	
irregularPower	Irregular Engine Power with Gasoline Engine	Suggesting Spark Plug Checking	
reducedPower	Engine Power Reduced with Gasoline Engine	Suggesting Battery Power Checking	
OK		Engine Running OK	

```
=E: System/Component Checking on Gasoline Engine
Irregular Engine Power with Gasoline Engine
Gasoline Engine Log/Observer: Suggesting Spark Plug Checking
```

```
=E: System/Component Checking on Gasoline Engine
Engine Power Reduced with Gasoline Engine
Gasoline Engine Log/Observer: Suggesting Battery Power Checking
```

```
=E: System/Component Checking on Gasoline Engine
Gasoline Engine Log/Observer: Engine Running OK!
```

Electric Motor Status	System Message	Log/Observer Message	
reducedMotorPower	Motor Power Reduced with Electric Motor	Suggesting Motor Battery Power Checking	
irregularMotorPower	Irregular Motor Power with Electric Motor	Suggesting Motor Brush Contact	
vibratingMotor	Car Vibration with Electric Motor	Suggesting Motor Mounting Bolt Checking	
OK	Normal Motor Power	Motor Running OK	

```
=M: System/Component Checking on  Electric Motor
Irregular Motor Power with Electric Motor
Electric Motor Log/Observer : Suggesting Motor Brush Contact
```

```
=M: System/Component Checking on  Electric Motor
Motor Power Reduced with Electric Motor
Electric Motor Log/Observer : Suggesting Motor Battery Power Checking
```

```
=M: System/Component Checking on  Electric Motor
Car Vibration with Electric Motor
Electric Motor Log/Observer : Suggesting Motor Mounting Bolt Checking
```

Regen. Brake Status	System Message	Log/Observer Message
weakElectric	Weak Generative Electricity with Regenerative Brake System	Suggesting Generator Coil Damage Checking
noElectric	No Electricity Generated with Regenerative Brake System	Suggesting Brake Generator Contact Checking
abnormalSpeedDecrease	Abnormal Speed Decrease with Regenerative Brake System	Suggesting Brake and Generator Gear Checking
OK	Normal Regen. Brake Working with Regenerative Brake System	Regen. Brake Working OK

```
=B: System/Component Checking on Regenerative Brake System
Abnormal Speed Decrease with Regenerative Brake System
Regenerative Brake System Log/Observer : Suggesting Brake and Generator Gear Checking
```

```
=B: System/Component Checking on Regenerative Brake System
No Electricity Generated with Regenerative Brake System
Regenerative Brake System Log/Observer : Suggesting Brake Generator Contact Checking
```

Engine Status	System Message	Log/Observer Message
reducedPower	Supply more power from extra battery pack for Gasoline Engine	Repairing Engine Power Reduced Warning
irregularPower	Self clean the spark plug of Gasoline Engine	Repairing Irregular Engine Power Warning
oil	Exchange oil for Gasoline Engine	Repairing engine oil warning
ok		Engine Status Good

```
==E: Self Repairing on Gasoline Engine
Self clean the spark plug of Gasoline Engine
Gasoline Engine Log/Observer: Repairing Irregular Engine Power Warning
```

```
==E: Self Repairing on Gasoline Engine
Supply more power from extra battery pack for Gasoline Engine

Gasoline Engine Log/Observer: Repairing Engine Power Reduced Warning
```

```
==E: Self Repairing on Gasoline Engine
Gasoline Engine Log/Observer: Engine Status Good
```

Motor Status	System Message	Log/Observer Message
reducedMotorPower	Exchanging Motor Battery Pack for Electric Motor	Repairing Reduced Motor Power status
irregularMotorPower	Apply oil to motor brush contact of Electric Motor	Repairing Irregular Motor Power Warning
vibratingMotor	Turn Tightly Motor Mounting Bolt of Electric Motor	Repairing Car Vibration with Motor
ok		Motor Status OK

```
==M: Self Repairing on Electric Motor
Apply oil to motor brush contact of Electric Motor
Electric Motor Log/Observer : Repairing Irregular Motor Power Warning
```

```
==M: Self Repairing on Electric Motor
Exchanging Motor Battery Pack for Electric Motor
Electric Motor Log/Observer : Repairing Reduced Motor Power status
```

```
==M: Self Repairing on Electric Motor
Turn Tightly Motor Mounting Bolt of Electric Motor
Electric Motor Log/Observer : Repairing Car Vibration with Motor
```

Regen. Brake Status	System Message	Log/Observer Message
weakElectric	Use an extra generator system for Regenerative Brake System	Repairing Generator Coil Damage for Regenerative Brake System
noElectric	Apply Oil to Brake Generator Contact Point of Regenerative Brake System	Repairing No Electricity Generated for Regenerative Brake System
abnormalSpeedDecrease	Monitoring Brake and Generator Gear of Regenerative Brake System	Repairing Abnormal Speed Decrease with Regenerative Brake System
OK		Regenerative Brake System OK

```
==B: Self Repairing on Regenerative Brake System
Monitoring Brake and Generator Gear of Regenerative Brake System
Regenerative Brake System Log/Observer : Repairing Abnormal Speed Decrease with Regenerative Brake System
```

```
==B: Self Repairing on Regenerative Brake System
Apply Oil to Brake Generator Contact Point of Regenerative Brake System
Regenerative Brake System Log/Observer : Repairing No Electricity Generated for Regenerative Brake System
```

the **Third** Visitor –**Software control and recovery**

Engine Status	System Message	Log/Observer Message
reducedPower	Increase minimum power level for Gasoline Engine	Resetting Minimum Power Level for Engine Power Reduced Warning
irregularPower	Software Resetting for Gasoline Engine	Software Resetting with Power Monitoring Module for Irregular Engine Power Warning
oil	Increase the control software level of oil supply forGasoline Engine	Resetting Oil Level for engine oil warning
ok		Keep Curren SW Monitoring Module for Engine

```
===E: Software Control and Recovery for Gasoline Engine
Software Resetting for Gasoline Engine



Gasoline Engine Log/Observer: Software Resetting with Power Monitoring Module for Irregular Engine Power Warning
```

```
===E: Software Control and Recovery for Gasoline Engine
Increase minimum power level for Gasoline Engine
Gasoline Engine Log/Observer: Resetting Minimum Power Level for Engine Power Reduced Warning
```

```
===E: Software Control and Recovery for Gasoline Engine
Gasoline Engine Log/Observer: Keep Curren SW Monitoring Module for Engine
```

Motor Status	System Message	Log/Observer Message
reducedMotorPower	Increase Motor Battery Pack Power Monitoring Loop for Electric Motor	Resetting the SW for Reduced Motor Power Monitoring
irregularMotorPower	Generating a Motor Power Monitoring Module from the Abstract Factory	Software Resetting with Motor Power Monitoring Module for Irregular Motor Power Warning
vibratingMotor	Initiate Monitoring SW for Motor Vibration of Electric Motor	Resetting the Monitoring SW for Car Vibration with Motor Action
ok		Keep Curren SW Monitoring Module for Motor

```
===M: Software Control and Recovery for Electric Motor
Generating a Motor Power Monitoring Module from the Abstract Factory Electric Motor

Electric Motor Log/Observer : Software Resetting with Motor Power Monitoring Module for Irregular Motor Power Warning
```

```
===M: Software Control and Recovery for Electric Motor
Increase Motor Battery Pack Power Monitoring Loop for Electric Motor
Electric Motor Log/Observer : Resetting the SW for Reduced Motor Power Monitoring
```

```
===M: Software Control and Recovery for Electric Motor
Initiate Monitoring SW for Motor Vibration of Electric Motor
Electric Motor Log/Observer : Resetting the Monitoring SW for Car Vibration with Motor Action
```

the **Third** Visitor –**Software control and recovery**

Regen. Brake Status	System Message	Log/Observer Message
weakElectric	Initiate the monitoring SW for Weak Electricity Problem of Regenerative Brake	Resetting Coil Damage Monitoring SW for Regenerative Brake System
noElectric	Initiate the monitoring SW for No Electricity Problem from Resen. Brake	Resetting Electricity Monitoring SW for Regenerative Brake System
abnormalSpeedDecrease	Initiate Speed monitoring SW for Resenerative. Brake System	Resetting Speed MoniToring SW with Regenerative Brake System
OK		Keep Curren SW Monitoring Module for Regenerative Brake System

```
===B: Software Control and Recovery for Regenerative Brake System
Initiate Speed monitoring SW for Regenerative Brake System
Regenerative Brake System Log/Observer : Resetting Speed Monitoring SW with Regenerative Brake System
```

```
===B: Software Control and Recovery for Regenerative Brake System
Initiate the monitoring SW for Weak Electricity Problem of Regenerative Brake System
Regenerative Brake System Log/Observer : Resetting Coil Damage Monitoring SW for Regenerative Brake System
```

```
===B: Software Control and Recovery for Regenerative Brake System
Regenerative Brake System Log/Observer : Keep Curren SW Monitoring Module for Regenerative Brake System
```