Smart House and Weather Monitoring Dashboard Class Diagram S275931

Smart House / Weather Dashboard

+ smartHomeDashboard: API Data

+ weatherDashboard: WeatherAPIData

+ temperature: TemperatureSensorData

+ humidity: HumiditySensorData

+ energyConsumption: SmartMeterData

+ getTemperature()

+ getHumidity()

+ getEnergyConsumption()

+ getWeatherAPIData()

+ getWeatherLocationData()

+ processTemperatureData()

+ processHumidityData()

+ processEnergyConsumptionData()

+ processWeatherAPIData()

+ displayTemperatureDataOnDashboard()

+ displayHumidityDataOnDashboard()

+ displayEnergyConsumptionDataOnDashboard()

+ displayWeatherAPIDataAsCurrentAndForecast()

+ displayWeatherLocationDataAsMaps()

+ addNewSensor()

User

+ SmartHomeUser: User

+ useSmartHomeWeathrtDashboard()

+ navigateDashboard()

Weather

+ temperature: float

+ humidity: float

+ precipitationProbability: integer

+ precipitationProbabilityType: string

+ weatherConditions: string

+ weatherConditionsIcon: image/icon

+ windSpeed: float

+ windDirection: string

+ pollenCount: integer

+ pollenCountPPM: integer

+ pollenCountDescription: string

+ weatherWarnings: string

+ airPressure: float

+ visibility: string

+ viisibilityDistance: float

+ uvIndex: integer

+ uvIndexDescription: string

+ airPollution: integer

+ airPollutionDescription: string

+ time: time

+ date: date

+ precipitationMap: mapData

+ temperatureMap: mapData

+ windMap: mapData

+ airQualityMap: mapData

+ radarMap: mapData

+ location: locationData

+ retreiveWeatherDataFromWeatherServiceAPI()

+ processWeatherData()

+ displayWeatherDataAsDashboard()

+ retrieveMapDataFromWeatherServiceAPI()

+ processMapData()

+ displayMapDataAsWeatherMaps()

+ useLocationForCorrectWeatherDataForLocalArea()

Energy Consumption

+ electricityUsage: float

+ electricityCost: float

+ gasUsage: float

+ gasCost: float

+ getElectricityUsageFromSmartMeter()

+ getGasUsageFromSmartMater()

+ processElectricityUsage()

+ processGasUsage()

+ getElectricityPriceFromSupplier()

+ getGasPriceFromSupplier()

+ calculateElectricityCostPerHour()

+ calculateGasCostPerHour()

+ displayElectricityUsage()

+ displayGasUsage()

+ displayElectricityCostPerHour()

+ displayGasCostPerHour()

+ calculateDailyElectricityUsage()

+ calculateDailyGasUsage()

+ calculateDailyElectricityCost()

+ calculateDailyGasCost()

+ displayDailyElectrictyUsage()

+ displayDailyGasUsage()

+ displayDailyElectricityCost()

+ displayDailyGasUsage()

+ recordElectricityUsage24Hours()

+ recordElectricityUsage30Days()

+ recordElectricityUsage12Months()

+ recordGasUsage24Hours()

+ recordGasUsage30Days()

+ recordGasUsage12Months()

+ recordElectricityCost24Hours()

+ recordElectricityCost30Days()

+ recordElectricityCost12Months()

+ recordGasCost24Hours()

+ recordGasCost30Days()

+ recordGasCost12Months()

+ retrieveElectricityUsageRecords()

+ retrieveElectricityCostRecords()

+ retrieveGasUsageRecorda()

+ retrieveGasCostRecords()

+ displayElectricityUsageGraphs()

+ displayElectricityCostGraphs()

+ displayGasUsageGraphs()

+ displayGasCostGraphs()

Humidity

+ humidity: float

+ getHumidityDataFromSensors()

+ processHumidityData()

+ calculateAverageHumidity()

+ displayHumidityData()

+ recordHumidityData24Hours()

+ recordHumidityData30Days()

+ recordHumidityData12Months()

+ retrieveHumidityDataRecords()

+ displayHumidityRecordsAsGraphs()

Temperature

+ temperature: float

+ getTemperatureDataFromSensors()

+ processTemperatureData()

+ calculateAverageTemperature()

+ displayTemperatureData()

+ recordTemperatureData24Hours()

+ recordTemperatureData30Days()

+ recordTemperatureData12Months()

+ retrieveTemperatureDataRecords()

+ displayTemperatureRecordsAsGraphs()