UML DRAFT

1. Class: BaseSystemUtilTask

Attributes:

- `name: str` (Name of the system utility task)

- `typeID: int` (Type identifier of the task)

Methods:

- `getTelemetryValue() -> float` (Abstract method to get telemetry value)

2. Class: SystemCpuUtilTask (Inherits from BaseSystemUtilTask)

Methods:

- `getTelemetryValue() -> float` (Returns CPU utilization percentage)

3. Class: SystemMemUtilTask (Inherits from BaseSystemUtilTask)

Methods:

- `getTelemetryValue() -> float` (Returns memory utilization percentage)

4. Class: SystemPerformanceManager

Attributes:

- `cpuTask: SystemCpuUtilTask` (Instance of CPU utility task)

- `memTask: SystemMemUtilTask` (Instance of memory utility task)

Methods:

- `startMonitoring()` (Starts monitoring tasks)

- `stopMonitoring()` (Stops monitoring tasks)

- `getCpuUtilization() -> float` (Gets current CPU utilization)

- `getMemoryUtilization() -> float` (Gets current memory utilization)

5. Class: ConstrainedDeviceApp

Attributes:

- `sysPerfManager: SystemPerformanceManager` (Instance of performance manager)

Methods:

- `startApp()` (Starts the constrained device application)

- `stopApp()` (Stops the constrained device application)

6. Class: GDAApplication

- Attributes:

- `performanceManager: SystemPerformanceManager` (Instance of performance manager)

Methods:

- `start()` (Starts the Gateway Device Application)

- `stop()` (Stops the Gateway Device Application)

Relationships

* Inheritance:
* `SystemCpuUtilTask` and `SystemMemUtilTask` inherit from `BaseSystemUtilTask`.

Composition:

* `SystemPerformanceManager` contains instances of `SystemCpuUtilTask` and `SystemMemUtilTask`.
* `ConstrainedDeviceApp` contains an instance of `SystemPerformanceManager`.
* `GDAApplication` also contains an instance of `SystemPerformanceManager`.