TOMFramework Project

Class Design Document

Version: 0.1 (Draft version)

Authors:

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| --- | --- | --- |
| No. | Student ID | Student name |
|  | B2110072 | Huỳnh Nhựt Duy |

*The purpose of this document is the draft version of class design that provides you with a guideline for detailing class design and writing the class diagram description for your solution based on design Pattern approach.*

*Points to remember:*

* *Content is important, not the volume.* ***Another team should be able to design in more detail from this document.***
* *Pay attention to overall in description.*
* *Completeness and consistency will be rewarded.*
* SINH VIÊN ĐƯỢC PHÉP XEM TÀI LIỆU
* SINH VIÊN KHÔNG ĐƯỢC SAO CHÉP HAY PHỔ BIẾN TÀI LIỆU TRONG PHÒNG THI DƯỚI MỌI HÌNH THỨC.

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## Name:

## Problem

Hệ thống hiện tại thiếu một phương pháp mạnh mẽ để thu thập dữ liệu môi trường bằng cách sử dụng cảm biến và truyền dẫn nó một cách hiệu quả đến máy chủ dữ liệu. Thiếu một phương pháp có cấu trúc, việc quản lý các loại cảm biến và thiết bị truyền dẫn trở nên rườm rà, dẫn đến sự không hiệu quả trong quá trình thu thập và truyền dữ liệu.

## Solution

## Class diagram

<*In this section you would present your class diagram>*

## Class Descriptions

*In this section you would describe in detail each class, its attributes, and its methods. You should logically group classes together. For example, you may use your architecture diagrams to group classes within a sub-system together.*

*Provide a subsection for each class. For each class, briefly describe its purpose, any constraints, (e.g., only single instance) and list the attributes and the methods of each class in the class diagram.*

*For each class, describe each of its attributes with the following details: name, type, a one line description of the attribute if its meaning is not intuitive, and constraints on the attribute (e.g., attribute must have unique value for each object or value range is restricted to positive integers).*

*Each method should be described with the following details: method name, return type and value, parameters, purpose and a brief description of the algorithm used (if it is non-trivial). Pre-conditions and post-conditions should be mentioned here if there are any assumptions about the arguments or the return values. List the attributes read and modified by this method and other methods invoked by this method.*

***The following is provided as an example:***

***Pay attention: only describe Instrument and its subclass (Handy and Station)***

### Class: <Classname>

* Purpose: *To model the relevant aspects of the physical tank that stores fuel*
* Constraints: *None*
* Persistent: *No (created at system initialization from other available data)*

Attribute Descriptions

1. *Attribute:*

Type:

Description:

Constraints:

1. Another attribute …

*Example:*

Attribute: *max-level*

Type: *real (double precision)*

Description: *maximum level of fuel that the tank can hold*

Constraints: *non-negative*

Method Descriptions

1. Method:

Return Type:

Parameters:

Return value:

Pre-condition:

Post-condition:

Attributes read/used:

Methods called:

Processing logic:

Test case:

1. Another Method….

Example:

Method: *AdjustLevel(double pressure)*

Return Type: *boolean*

Parameters: *pressure – the current pressure reading for the tank*

Return value: *success or failure*

Pre-condition: *fuel-level between 0 and max-level*

Post-condition: *fuel-level between 0 and max-level*

Attributes read/used: *fuel, pump, alarm, fuel-level*

Methods called: *fuel.get\_density(), alarm.sound\_alarm()*

Processing logic:

*The fuel density is obtained from the fuel attribute of the tank. New fuel-level is computed from density and pressure. If level falls outside the range [low-level, high-level) the alarm associated with the tank is sounded and the pump is stopped.*

Test case 1: *Call AdjustLEvel with pressure X and fuel-level Y. Expected output is:….*

## Consequence

## Implementation (code examples for Receive, HTTP and MQTT only)