Quiz for Week 5

Regis University

MSSE635 – Software Architecture Design

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# Introduction:

This paper helps to establish different viewpoint aspects for a project that has temperature sensors located in different locations throughout the local city that takes temperatures in either Fahrenheit, Celsius, Kelvin, Rankine, or Unknown raw data. In order for the temperature data to be stored in the data hub it must first be converted into xml format where the developer API’s can get the data.

The following are the different viewpoints for the different aspects requested for this quiz.

# Static Aspect Diagram:

Diagram

Description automatically generated

## Design Rational:

This is the static aspect and by creating the class diagram it allows the software team to look at what classes need to be created and how they must interact with each other. As a software architect, I wanted to create a structural understanding of what classes need to be implemented and how the interfaces interact with each other to get a sense of the synergy among the system.

# Dynamic Aspect Diagrams:

A picture containing box and whisker chart

Description automatically generated

A picture containing box and whisker chart

Description automatically generatedDesign Rational:

As a software architect, I want to model how the system processes by using a dynamic aspects of the developers querying the API’s and the temperature sensors capturing temperature data by creating two sequence diagrams, which is part of the dynamic aspect. This helps in understanding the process flow of the software system at runtime. I wanted a model to display the how and what order of the whole system and how it functions together.

# Functional Aspect Diagram:

Diagram

Description automatically generated

## Design Rational:

Before any of the other views were constructed, I the Software Architect, needs to understand the requirements better by building a use case diagram. The functional aspect was designed first to get an understanding of what the requirements are by graphically displaying this in a use case diagram. This helps to determine what actors are involved and how they interact with the different use cases. I say the functional aspect is the foundation to the other view perspectives, because once you know the functional aspects of the project that is being designed the simpler it is to transfer this into the other views.

# Non-Functional Aspect Diagram:

Diagram

Description automatically generated

Design Rational:

As a Software Architect, I needed to understand the physical structure of the system that must be constructed. Therefore, I put together the non-functional aspect. This will highlight the physical layers along with the performance and scalability of the system.

# Development Viewpoint:

Chart, diagram

Description automatically generated

## Design Rational:

To know how the implementation for this system will be developed, this view has been put together for the programmers, since it is necessary to build this viewpoint for their perspective. This dives into the inner workings of how the client/server system should be implemented with its necessary components and connectors.

# Resource(s):

Wikipedia (2021). 4+1 Architectural View Model

<https://en.wikipedia.org/wiki/4%2B1_architectural_view_model>

Regis University (2021). Assign4\_solution\_example – MSSE 635