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:

Creating the class diagram allows the software team to look at what classes need to be created and how they interact with each other. As a software architect, I wanted to create a mutual understanding of what classes need to be implemented and how the interfaces interact with each other to create 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 creating dynamic models. This helps in understanding the process flow of the software system and what is expected at certain points. Since there are two actors, as referenced in the functional aspect, we need to summarize in each dynamic model how they would process procedures within the system.

# Functional Aspect Diagram:

Diagram

Description automatically generated

## Design Rational:

Before any of the other views are constructed the software architecture needs to understand the requirements better by building 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:

To understand the physical structure of the system that must be constructed I wanted to put together the non-functional aspect. This will highlight the physical layers along with performance, scalability, and portability.

# Development Viewpoint:

Chart, diagram

Description automatically generated

## Design Rational:

To understand the physical aspect completely it was needed to create a development viewpoint to fully understand the design of the client/server for this type of system. It was desired to define what components are required and how they are connected, so it was important to include this viewpoint.

# 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