QuadTree Visualizer

Task Description

In this task you are expected to learn about xml file format and how to use library tinyxml for reading and writing the same.

Resources
Learn TinyXml
https://www.youtube.com/watch?v=BuqHPQWRLvQ
Understand XML : Beginnner
https://www.youtube.com/watch?v=KeLiQXqVgMI

Task Description

In this task you are expected to develop a deep understanding of Quad Tree and its usage. Once ready you need to define the abstract data type for the Quad tree and the relevant API for manipulating the Quadtree.

Resources
Quad Tree : Introduction
https://www.youtube.com/watch?v=xFcQaig5Z2A
QuadTree : View
https://jimkang.com/quadtreevis/
Quad Tree : Implementation (Hint)
https://www.youtube.com/watch?v=OJxEcs0w_kE
Quad Tree : Implementation (Hint)(x)
https://www.youtube.com/watch?v=QQx_NmCIuCY
API Design
https://anteru.net/blog/2016/designing-c-apis-in-2016/

QuadTree Visualizer

Task Description

In this task you are expected to define the xml file format for the quad tree

Resources
Understand XML : Beginnner
https://www.youtube.com/watch?v=KeLiQXqVgMI
Learn TinyXml

QuadTree Visualizer

Task Description

Ask your department coordinator for the access to pcf_ui library and go through the examples and understand the basic principles. Create a window with button and label, and on button press the colour of the label shall change.

In this task you are expected to understand the drawing view of pcf_ui library. Create an application which shows NxN grid, the input shall be taken from the user and after a button is clicked the grid shall be drawn.

Understand what are sequence diagram and create one for the final application which you will develop.

Resources
Sequence Diagram
https://sparxsystems.com/resources/tutorials/uml2/sequence-diagram.html

Task Description

In this task you are expected to create the final application. Your application shall be able to load a given file (take the input using text box) and it shall validate the file for correctness, the application must handle the error in a robust manner. The application is expected to show the memory usage and information about the data which is stored within a cell. You could refer to the given resource and implement your own application.

Resources
Simple Quadtree visualizer
https://www.codeproject.com/Articles/30535/A-Simple-QuadTree-Implementation-in-C

Task Description

In this task you are expected to break the application into smaller abstract components, the diagram shall clearly show the data and control flow exchange between the various components.

Resources
Understanding Software Architecture
https://www.alibabacloud.com/blog/how-to-create-an-effective-technical-architectural-diagram_596100