

COMP61532 Mini Project Summary

ISSUE TRACKING SYSTEM (Knowledge Base)

By UDOISANG BLESSING S. – 7588349 (ACS &ITM)

BACKGROUND

An Issue Tracking System (ITS) is a software application used in an organization to record and track the progress of every problem from when it is identified until it is resolved; for example, logging customer complaints/requests in an organization's customer support call centre. Additionally, an ITS usually contains a "knowledge base" containing information on each customer, resolutions to common problems, and other such data. A ticket in an ITS is a record of a single issue containing various information about the issue.

THE APPLICATION AND ITS USE OF DESIGN PATTERNS

I will focus on building the "knowledge base"; displaying knowledge base articles and converting resolved tickets to knowledge base articles if time permits. Each article would be classified under a category and categories can have sub categories containing articles also. The application would use a local XML data store for persistence. The following patterns would be used.

- **COMPOSITE:** Categories would be recursive in the knowledge base system. Each category will contain articles and/or sub-categories. The composite pattern would be used to model this part-whole hierarchy structure.
- **FLYWEIGHT:** Multiple articles would share the same categories. To avoid creating large number of category objects, the application will use the flyweight pattern to reduce the number of category objects created, decrease memory footprint and increase performance.
- **ITERATOR:** The iterator pattern would be used to iterate through the collection of articles and categories in the knowledge base. It would also be used to traverse the XML DOM sequentially to search, display, update, delete items.
- **ABSTRACT FACTORY:** This pattern will be used to create object factories for creation of articles. This is necessary because if in future other kinds of articles are to be added to the knowledge base such as customer information, product information, etc with additional or different fields, they can be added without changing the design.

DELIVERABLES

The expected outcome of this mini project is a small, standalone knowledge base for an issue tracking system implemented from scratch using at least three different **design patterns**.

The initial summary of the application and its use of design patterns.

It should explain coherently what the application is and how the design patterns will be used