Time Tracker Project 1.1 Requirements Specification

1. Scope

1.1 Overview

The Time Tracker Project custom component is part of the Time Tracker application. It provides an abstraction of projects and the clients that the projects are assigned to. This component handles the persistence and other business logic required by the application.

Version 1.1 will enhance the existing version 1.0 design and maintain the same underlying API. New classes and methods will be added to meet the additional requirements.

Note: the name of the package has changed.

1.2 Logic Requirements

1.2.1 Batch Operations

The new design will provide batch versions of the CRUD (Create/Read/Update/Delete) operations of the persistence layer. This means they will accept an array rather than single instances. By caller's choice, the batch operations can be made atomic (all-or-nothing).

1.2.2 Project Search

This functionality adds the ability to search for all projects based on some criteria. The search criteria can be a combination of any of the following search filters.

1.2.2.1 Search Based on Name

This search will return all projects with a name that contains a given string. The specified sub-string can appear anywhere in the project name.

1.2.2.2 Search Based on Description

This search will return all projects with a description that contains a given string. The specified sub-string can appear anywhere in the project description.

1.2.2.3 Search Based on Project Manager

This search will return all projects managed by the given user ID.

1.2.2.4 Search Based on Project Worker

This search will return all projects that are associated with the given worker user ID.

1.2.2.5 Search Based on Client

This search will return all projects owned by the specified client ID.

1.2.2.6 Search Based on Users

- Return all projects created by the specified user name
- Return all projects modified by the specified user name

1.2.2.7 Search within a Date Range

The date range is given as a pair of Begin Date and End Date, for start date, end date, creation date or modification date. The range can be open-ended. This means it has the following modes of operations:

- Return all projects started on or after the Begin Date
- Return all projects ended on or after the Begin Date
- Return all projects created on or after the Begin Date
- Return all projects modified on or after the Begin Date
- Return all projects started on or before the End Date
- Return all projects ended on or before the End Date
- Return all projects created on or before the End Date
- Return all projects modified on or before the End Date
- Return all projects started between the Begin Date and End Date, inclusive
- Return all projects ended between the Begin Date and End Date, inclusive
- Return all projects created between the Begin Date and End Date, inclusive
- Return all projects modified between the Begin Date and End Date, inclusive

1.2.3 Client Search

This functionality adds the ability to search for all clients based on some criteria. The search criteria can be a combination of any of the following search filters.

1.2.3.1 Search Based on Name

This search will return all clients with a name that contains a given string. The specified sub-string can appear anywhere in the client name.

1.2.3.2 Search Based on Users

- Return all clients created by the specified user name
- Return all clients modified by the specified user name

1.2.3.3 Search within a Date Range

The date range is given as a pair of Begin Date and End Date, for either creation date or modification date. The range can be open-ended. This means it has the following modes of operations:

- Return all clients created on or after the Begin Date
- Return all clients modified on or after the Begin Date
- Return all clients created on or before the End Date
- Return all clients modified on or before the End Date
- Return all clients created between the Begin Date and End Date, inclusive
- Return all clients modified between the Begin Date and End Date, inclusive

1.3 Required Algorithms

None.

1.4 Example of the Software Usage

The Time Tracker application will use this component to perform operations related to client and project management.

1.5 Future Component Direction

Other database systems maybe plugged in for some client environments.

2. Interface Requirements

2.1.1 Graphical User Interface Requirement

None.

2.1.2 External Interfaces

None.

2.1.3 Environment Requirements

- Development language: Java 1.4
- Compile target: Java 1.3, Java 1.4

2.1.4 Package Structure

com.cronos.timetracker.project

3. Software Requirements

3.1 Administration Requirements

3.1.1 What elements of the application need to be configurable?

None.

3.2 Technical Constraints

3.2.1 Are there particular frameworks or standards that are required?

None.

3.2.2 TopCoder Software Component Dependencies:

- Configuration Manager
- DB Connection Factory

**Please review the TopCoder Software component catalog for existing components that can be used in the design.

3.2.3 Third Party Component, Library, or Product Dependencies:

Informix Database.

3.2.4 QA Environment:

- Solaris 7
- RedHat Linux 7.1

- Windows 2000
- Windows Server 2003
- Informix

3.3 Design Constraints

The component design and development solutions must adhere to the guidelines as outlined in the TopCoder Software Component Guidelines. Modifications to these guidelines for this component should be detailed below.

3.4 Required Documentation

3.4.1 Design Documentation

- Use-Case Diagram
- Class Diagram
- Sequence Diagram
- Component Specification

3.4.2 Help / User Documentation

- Design documents must clearly define intended component usage in the 'Documentation' tab of Poseidon.