Trip Report Application

Purpose

Develop an application that will be used by SPT for trip reports in order to gather and harness knowledge of the Grails application framework.

Motivation

SPT currently does not have a mechanism or template for users to file a report about their business trips. This leads to information being missing or inconsistent. A trip report application is necessary to record what was learned (e.g. issues and concerns, course material) on a trip as well as to preserve information (e.g. contacts).

Grails is "an open-source web application framework that leverages the Groovy language and complements Java Web development." Grails prides itself on being a rapid application development (RAD) framework and is based upon existing Java technologies (JVM, Hibernate, Spring, etc.). Grails application development is a good case study because it could allow customers with existing Java environments to develop, expand or upgrade in less time.

Hardware and Software Requirements

- Application server (Tomcat, JBoss, Geronimo, WebSphere, etc)
- Database server (MySQL, PostgreSQL, Oracle Database, or DB2)
- Java JDK 1.5+
- Grails R2
- Git

Users

- Employees/Contractors who need to plan their trip and submit their trip report
- Supervisors who need to approve the travel plans and utilize the trip report information for cost evaluation
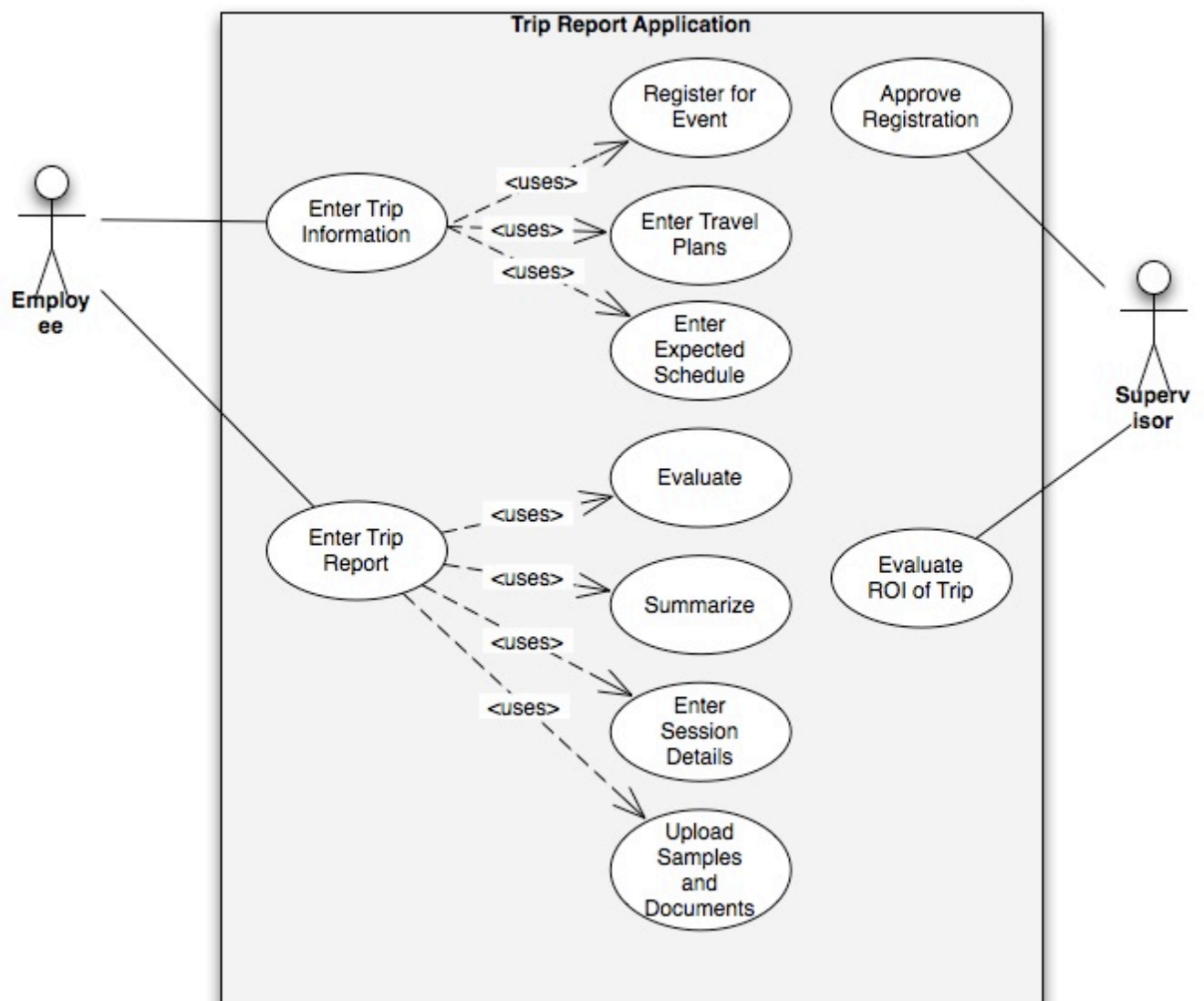- Peers who need trip report information to utilize on contract

Interface

Employees and Contractors need to be able to add and edit trip reports. They should be able to see a list of their own trip reports as well as a trip reports from team members on the same contract. Managers should be able to see the trip reports of all employees the manage as well as a summary report of some sort.

Below is a use case and use case diagram to describe this application:

- Employees can "register" as going to a conference, seminar, training session
- Supervisors "approve" a trip
- Employees can enter their travel plans

- Employees can enter their expected schedule (specifically for conferences, to list what sessions they are planning to attend)

- Employees can enter evaluation of conference, seminar, training
- Employees can enter summary of event
- Employees can enter details of each session in event
- Employees can upload sample code, documents, presentations that were made available at event
- Supervisors can evaluate the ROI of a trip based upon the submitted trip report(s)

Domain

- User

- ○ FirstName
- ○ LastName
- ○ Email (use as username)
- ○ Password
- ○ Company
- ○ Contract(s)
- ○ Role
- ● Role
  - ○ Name
- ● Contract
  - ○ Contract Number
  - ○ Company
  - ○ Agency
  - ○ Manager
- ● Trip
  - ○ User
  - ○ Contract(s)
  - ○ StartDate
  - ○ EndDate
  - ○ EventType (Training, Customer Meeting, etc)
  - ○ Event(s)
  - ○ Location(s)
  - ○ Purpose
  - ○ Approved?
  - ○ ApprovedBy
  - ○ Itinerary
- ● Report
  - ○ Trip
  - ○ Usefulness
  - ○ Topics
  - ○ Issues/Concerns
  - ○ ActionItems
  - ○ Contact(s)
  - ○ Attachment(s)
- ● ActionItem
  - ○ Name
  - ○ Description
- ● Event
  - ○ Name
  - ○ Description
  - ○ StartDate
  - ○ EndDate
  - ○ Locations
  - ○ Cost

- Location
  - City
  - State
  - Country
- Contact
  - FirstName
  - LastName
  - Company
  - Agency
  - Email
  - PhoneNumber
- Organization
  - Name
  - Address
  - URL
  - Company
    - ▪
  - Agency

Development Plan

- Gather requirements as needed
- Setup the repository (Git) R3
- Setup the application and database server
- Create the workflow/user state UML
- Create the domain UML
- Create the domain objects R5
- Create the unit tests R4
- Add indexing for full text search with Lucene (Compass) using Searchable plugin R7
- Develop a basic look and feel with CSS
  - Layout
  - Color scheme
  - Logos
- Create the interface
  - Add an authentication mechanism using Spring Security plugin (login screen) R1 (Should an authentication method like LDAP be explored for proof of concept purposes?)
  - Develop the general CRUD mechanism for all domain objects
  - Attachments for trip reports
  - PDF exporting of trip reports R6

Resources

1. http://blog.springsource.com/2010/08/11/simplified-spring-security-with-grails/
2. http://www.grails.org/Installation
3. http://help.github.com/
4. https://www.ibm.com/developerworks/java/library/j-grails10148/
5. https://www.ibm.com/developerworks/java/library/j-grails02128/
6. http://grails.org/plugin/export
7. http://www.grails.org/plugin/searchable

Here are some ideas I'd been thinking of, for a company Trip Reporting Application, thinking more for conference, seminar, training purposes vs "client" or TDY travel.

This would be good for other employees to see who else might be going for collaboration and travel synchronization, for information/technology sharing and evaluation.