EMPLOYEE EXPENSE TRACKING SYSTEM

SYSTEM DOCUMENTATION

TWIN-CIRCA MARKETING

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# Introduction

The Employee Expense Tracking System is a web-based application that manages travel-related expenses of employees. It allows users to record, submit, track, process, and reimburse employee expenses. The system used to improve and streamline current process, data management and increase response time.

This system documentation has been created to outline the overall system architecture and design. This includes the purpose, scope, design approaches, main component design and system design considerations and specifications. This document also provides an architectural overview of the system to depict different aspects of the system and functions as a foundational reference point for developers.

## Purpose

The main purpose of the system is to facilitate the entry, accumulation, processing, and management of travel-related expenses and employee reimbursement and improve efficiency, accuracy and management by reducing manual operations. The system performs a range of functionalities including:

*Record Keeping*

The system is used in storing data to keep accurate records. Usual data that comprise overall transaction include employee information, vendors, expenses, and payment records. Recording of expenses starts from encoding complete details of an employee and vendor, and then records payment once these expenses have been grouped together into one report. The system provides easy record retrieval and transaction history that can be utilized to process and analyze the data associated with it.

*Workflow Management*

The system can be used to streamline the current process or workflow. From encoding expenses to submitting of expense report, the system can reduce the amount of time needed to generate reports and increase reimbursement process.

*Reporting*

The Employee Expense Tracking System provides an accurate data visualization for reporting and analysis. The system can generate summary of expense reports as well as overall expenses of the company. In addition, the system provides information of remaining revolving fund on each employee.

## Scope and Limitation

### Scope

The project focused on the development of an information system that will track employees’ expenses, process reimbursement, and reduce manual operations. Hence, the system has focused on the following:

* The system will display a form of data visualization that includes total amount of remaining revolving fund and summary of expense records.
* The system will store and display employee records including job designations along with their corresponding departments.
* The system should allow users to monitor their remaining revolving fund.
* The system will store expenses based on expense types and display the list of records.
* The system will store expense report that consists of expenses grouped together and requires approval.
* The system will allow the users to submit, approve, reject, and cancel expense reports, and monitor statuses of each record.
* The system will store payment records for each expense report.
* For security and privacy of the management, the system complies users with different access level that correspond to different roles and permissions.
* The system will store and display vendor records.
* The system will allow users to manage their own profile.
* The system will store records such as departments, job designations, expense types.
* The system will have an activity log to monitor each user transaction.
* The system should generate reports of a specific expense report and summary of expense reports.
* The system will allow users to manage application settings.

### Limitation

The current version of the system does not include:

* Payment System

The current system does not have any system that can be used to settle financial transactions through the transfer of monetary value nor any payment system integration functionalities.

* Record Mileage Expenses

The system does not have the functionality to record mileage expenses where the expense is calculated based on the distance travelled and the mileage rate.

* System Notifications

The system does not notify users on transaction and transaction updates.

*(Please note that this is a baseline document and may be updated as system development progresses. Limitations stated can be eliminated and current system features are all subject for improvement)*

# System Overview

This section describes the data interfaces to other systems around it. It follows 3 of the levels of interoperability (IO):

*This section should describe the basic system design goals, functionality and architecture. It may include a high level description of the approach used to develop the system design. It may also include high-level descriptions of the system’s hardware, software, database, and security components. Depending on the complexity of the system this section may also include component and/or contextual diagrams of the system and system components.*

## System Environment

*What is this all about?*

Hardware: 4GB RAM, 120GB ROM

Development: Netbeans 6.8 + Grails 1.2.1, Visual Studio Code 1.51

Unit Test: Junit

Diagrams: Visio 2007

Database Management System: MySQL

Server: Windows Server 2008

Server: Apache Tomcat 6

Revision control: Sourceforge Subversion -

https://comp5541-team4.svn.sourceforge.net/svnroot/comp5541-team4

Discussion: Google groups

Application Architecture: Single-Page Application

Languages: HTML, CSS, JavaScript, PHP 7.3

Web Application Frameworks: Vue.js 2.5, Laravel 7.28

UI Libraries: Vuetify 2.3

## System Design Specification

*What is system design specification and why do we need it?*

### Process Specification

*What is process specification?*

#### Process Flow Diagram

#### Context Flow Diagram

#### Diagram 0

### Data Specification

*What is this all about?*

#### Entity Relationship Diagram

#### Data Dictionary

# User Guide

## Access, Authentication, and Authorization

Discuss roles and permissions, username password, how to access the system, what link can you access it to, etc.

## Application Modules

With Screenshots

Main (including the header, sidebar, and footer)

(note: state all meaning of button with icons only, and status colors)

Dashboard

User Profile

Employees

Expenses

(note: state all statuses and their corresponding colors)

Expense Reports

(note: state all statuses and their corresponding colors)

Payment Records

(note: state all statuses and their corresponding colors)

Vendors

Departments

Job Designations

Expense Types

Activity Logs

Settings

## Basic Workflow

State complete process at least one cycle

## Configuration and Deployment

### Hardware Requirements

State recommended specifications.

### Software Requirements

State recommended specifications.

### Linux Server Configuration

Tutorial with screenshots

### Apache Configuration

Tutorial with screenshots

### MySQL Configuration

Tutorial with screenshots

### Application Deployment

Tutorial with screenshots

Discuss File/Database Backup and Restoration

## Troubleshooting

These are the common problems that can be encountered blah blah:

Unable to access link

No network connection

Server down/error

Unable to login

Invalid username and password

Deactivated account

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# Appendices

## Appendix A (Gantt Chart)

## Appendix B (Definition of Terms)

Accounting terms

Expense

Replenishment

Reimbursement

IT technical terms

Database

Database Management System

Server

## Appendix C (Existing Forms and Reports)

Expense Summary Report

Expense Summary Report grouped by date

Expense Summary Report grouped by employee

Voucher

Petty Cash Voucher