Project opal

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# organization

The customer of Project Opal is JKS Enterprises, an organization consisting of Ace Automotive and Diamond Lacey’s Taxi. The payroll & shift management system is under review. The current solution involves manually recording clock-in and clock-out times of various taxi operators on any medium- timesheets, regular A4 or even sticky notes. The dispatchers (who are to be recording the current data) don’t have total control over the data since drivers can easily modify the documents with little effort & no oversight. The payroll department at JKS has the responsibility of compiling the data and writing the paycheques. Due to the lack of paper trail, JKS has to deal with internal friction between management and employees due to disagreements of who came in and when. JKS has modernized a few sectors of its business using a variety of technologies, such as Microsoft Access. The users of the current system includes cab drivers, dispatchers, mechanics, managers, bookkeepers, repairmen, and owners. Its inputs are time cards, and hourly rates. It outputs paycheques and historical data.

<Description of physical location of hardware>

JKS Enterprises has shared a few goals they want to achieve with Project Opal time management system. The most important is improving the reliability and integrity of historical shift data. The previous system caused a multitude of issues with not knowing who had original recorded shift data or who had modified it along the way before being received by payroll. This caused inconsistency between the dispatchers & accountants, as well as disagreements between employees and general management.

# requirements

## Functional

### High Priority

* System should manage shifting starting and ending (clocking in and clocking out)
* System should provide review data for employees
* System should allow managers to modify shifts

### medium priority

* System should show managers an overview of hours worked by all employees
* System should generate graphs & analytics based on historical data
* System should be able to automatically print cheques

### low priority

* System should show messages from administrators on the screen

## Usability

### high priority

* System should allow a user to clock-in or clock-out in at most 3 clicks
* System should have a simple interface with a minimum of technical jargon

### medium priority

* System should include help dialogs
* System should have multiple types of cues

## Reliability

### high priority

* System should remain active 99.15% of the time (6 hours of downtime a month due to critical failures)
* System should have adequate failure recovery protocols
* System should maintain data integrity as well as minimize data loss (barring electrical failure or other critical computer hardware malfunction)

### medium priority

* System should be separated so as to allow easy backup of the database and other data-critical components of the application

### low priority

* System should have multiple points of failure, rather than rely on a single machine

## Performance

### high priority

* System should be able to handle up to 100 active shifts
* System should be able to process more than 10,000 historical shifts
* System should be able to generate at least 5 reports daily

### medium priority

* System should be able to generate 3 large reports (>1 hour processing time) bi-weekly

### low priority

* System should be able to handle 10 active logins

## Security

### high priority

* System should have unique user accounts that are protected by a password
* System should encrypt all passwords upon entry and not store any passwords as plaintext
* System should not divulge passwords to administrators or technical staff
* System should prohibit access to particular controls by unprivileged users

### medium priority

* System should use multiple points of failure to minimize compromised machines.

## Platform

### medium priority

* System should be able to run on any machine that contains at least 512 MB of RAM and 1 GB of available storage
* System should have an off-terminal location for database backup
* System should consume low levels of bandwidth (100 – 500 kbps)

### low priority

* System should use a standard database manager to ensure data integrity

# Application Description

The application (Project Opal) seeks mainly to improve the reliability of recording shifts in JKS Enterprises. By using modern data recording techniques such as employing SQL databases and strict, data-cleansing forms, JKS Enterprises can regain confidence in the historical data of their shifts and be able to compensate their workers correctly and fairly. Project Opal also seeks to reduce human time involved in the process of managing employee scheduled time and assist human resources in creating accurate documentation for accounting purposes and generating a backlog of data for employees and management to review for strategic planning.

Project Opal overhauls an arduous and error-prone system by automating each step in the process and implementing safeguards and internal tests along the way. Project Opal also lets the regular users of the system (drivers) record their hours without confusion and provides information about their recent activities. The system is designed to be simple and easy-to-use for anyone, with no amount of technical knowledge required to get benefit.

The new system will be used by a variety of users within the organization- cab drivers, dispatchers and mechanics will be included in the regular users. Managers, bookkeepers and owners will be counted among administrative users.

Version 1 of Project Opal has a bevy of immediately useful features to JKS Enterprises. The user view of the system can record shifts, record vehicle numbers, give incremental or comprehensive review data. The user view also protects all user logins with passwords that are encrypted upon entry. Clocking in and clocking out automatically log out the user in order to speed use and reduce accidentally forgetting to log out. The data that is recorded is stored in a database for transportation and use.