A REPORT

ON

EMPLOYEE EXIT PROCESS

By

Pranav Pushp Sinha **13RPCS046**

At

Dark Horse IT Consulting Pvt. Ltd.

Hyderabad

An Internship Program; station of

FACULTY OF SCIENCE AND TECHNOLOGY

ICFAI FOUNDATION FOR HIGHER EDUCATION

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June 2017

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(Deemed to be University under Section 3 of UGC Act 1956)

Internship Program Division

IP Station	**:**	Dark Horse IT Consulting Pvt. Ltd.
Centre	**:**	Hyderabad
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Date of Start	**:**	January 2017
Project Title	**:**	Employee Exit Process
Name	**:**	Pranav Pushp Sinha
Enrolment Id	**:**	13RPCS046
Discipline	**:**	Computer Science and Engineering

Mentor	**:**	Mrs. G. Priya
Designation	**:**	Human Resource Manager
IP Faculty	**:**	Mrs. P. Rohini

Abstract

During the process of relieving an Employee, there are few manual tasks that go around and no particular department is there to keep a check on what accessories or documents have been submitted also, there are instances Employees may forget to submit pertinent documents and accessories. Ergo, we intend to aid this process by bringing a web-application that involves interaction of various departments in a structured work-flow so that the process is hassle free. Employee Exit Process is complete cycle of relieving process of an employee and keeps track of all the actions chronologically from the day of application of resignation to final relieving of the employee. Also, this application is powered with an interactive user-interface and robust security mechanism which prevents any non-ethical commits. Not only the application aids the process of Employee Relieving, but also it reduces efforts of both the employee who wishes to resign and the departments who have to keep a close eye at each stage. With this project, we built a fully fledged Employee Exit Process that meets all the requirements an organization would need.

Signature(s) of Student(s)
Date:

Signature of IP Faculty
Date:

ACKNOWLEDGEMENT

Every project big or small is successful largely due to the effort of a number of wonderful people who have always given their valuable advice and/or lent a helping hand. I sincerely appreciate the inspiration; support and guidance of all those people who have been instrumental in making this project a success.

I am extremely grateful to **Dark Horse IT Consulting Pvt. Ltd.** for the confidence bestowed in me and entrusting me with project.

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At this juncture I feel deeply honoured in expressing my sincere thanks to **Mrs. G. Priya** (Human Resource Manager) for making the resources available at right time and providing valuable insights leading to the successful completion of my project.

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Lastly, I place a deep sense of gratitude to my family members and my friends who have been constant source of inspiration during the preparation of this project work.

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Chapter 1 – About the Company

1.1 Dark Horse IT Consulting Pvt. Ltd.

Dark Horse has set out to address the oh-so familiar issues perennially bogging down Business and IT.
They have a vast experience in identifying and delivering niche solutions, adding value to our customers and in most cases giving them a first starter advantage over their competition. Over the time they have built an impressive repository of solutions which are:

- Vertical specific – Across different domains.
- Business function specific – Within an Organisation.
- Generic – Standalone solutions relevant across businesses

Their solutions can further be categorized based on the technical implementation as:

- Integration centric.
- Single User Interface across multiple applications.
- Process view/Graphical tracking of the business flow.
- Process analysis and reporting.
- Different combinations of the above.
- Service enablement of legacy systems.

1.2 Working Scope

- The Gap between Business and IT.
- Packaged Applications – ERP, PLM, CRM, SCM, Core Banking, Core Insurance et al, barely serve as business differentiators anymore.
- Organizations have spent a fortune on Packaged Applications and are perpetually spending a bigger fortune maintaining and customizing them.
- Business needs to manage processes which are dynamic and changing instead they have silos of stagnant and rigid applications.
- Packaged Applications are designed for Generic, Predictable and Unchanging processes – the business environment is all about change.

1.3 Competency

- Creating a Business Oriented Architecture (BOA) using BPM & SOA.

Chapter 1 – About the Company

1.4 Strategic Focus

'Business Transformation' by creating an Architecture which enables:

- Agility & Flexibility to cater to dynamically changing business models.
- A collaborative platform across the entire eco-system to increase efficiency, service levels, transparency and visibility.
- An unbundled, fine grained (lego'ed) library of reusable business functionalities that get orchestrated into end-to-end business processes.

1.4 Fundamental USP (Unique Selling Proposition)

- An exclusive focus on the BPM, ESB, SOA, RAD/CAF layer.
- Enriched experience garnered from across all Industry verticals.
- A rich inventory of Solutions available – tried and tested and successfully running.

Chapter 2 – Employee Exit Process

2.1 Introduction

2.1.1 Purpose

The purpose of this document is to provide a short summary of the project for implementing a software solution as part of the internship program by the interns in our organization.

2.1.2 Intended Audience

This document is intended for whomsoever it may concern to understand the project work to be done by the interns of our organization and are interested to learn about this topic.

2.1.3 Scope

The scope of the document is to provide an overall summary of the problem statement considered to implement a software application and it's context in which the project work would be completed.

2.1.4 Assumptions

Further clarifications beyond this document content would be referred from the detailed documentation & the concerned people.

2.2 Process

2.2.1 Business Context

Following is the detailed information on the requirement as provided by the organization's IT team.

2.2.2 Current Process

During the employee exit process, every time there is a few manual tasks that go around e.g.

- No particular department is there to keep a check on what documents have been submitted & then there is delay in the process
- Also there are instance where the employees sometimes forget to return certain documents.
- Thus to avoid these confusions, we need an automated process.

2.2.3 Expected Process

Taking into consideration all the above challenges, a workflow is to be developed in Angular & Spring which will ease this process. Major features of the Solution would be:

Generic Workflow: Each time when an employee resigns, there are certain things that should occur in a chronological order:

A. Employee should be able to :

i. Check if the Resignation has been accepted.
ii. If yes, then he/she should be able to submit back the documents received from the organization like Company Insurance Card, Access Card, and Laptops etc.
iii. And send it for verification.
iv. On the other hand if the resignation is not accepted, he/she should check if there are any meetings scheduled by the manager to get some clarification before accepting the resignation.

B. Accounts Department

i. Should firstly verify if the documents submitted are relevant & original.
ii. Must also check if there are any arrears pending from the employee to the organization or vice versa.
iii. Finally should be able to complete the process & let the Infra team verify the infra related documents

C. Infra Team

i. Should check if Accounts Department has completed their tasks.
ii. Eventually they should proceed to check if the employee has returned the Laptop(if it was given to the employee from the organization) & the access card.
iii. Finally complete the process.

D. HR Team

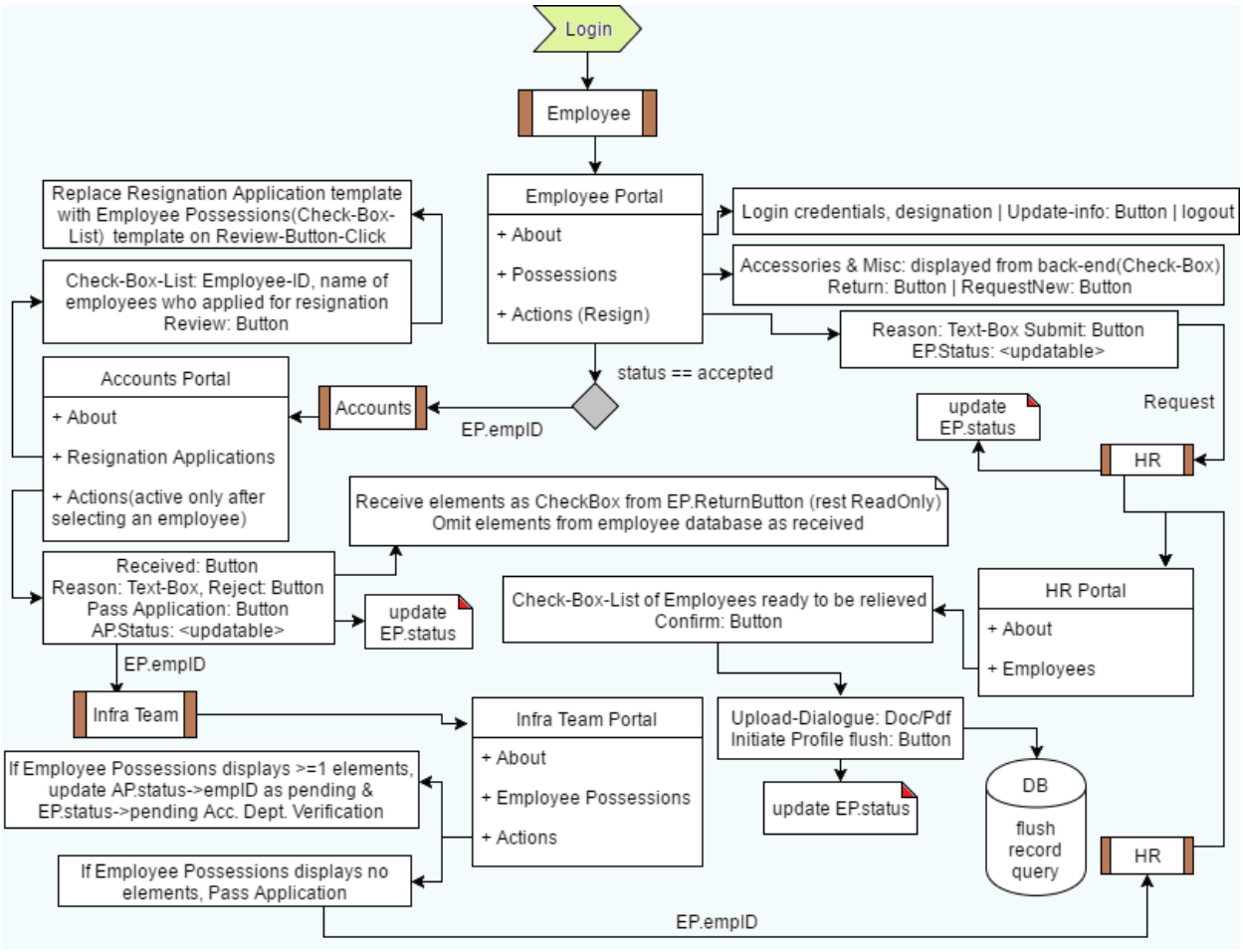
i. After checking if all the teams have verified the relevant stuff, they should be able to upload the relieving letter

Finally after 2 days of relieving letter uploaded by the HR team, the Employees Portal Account should be blocked.

Notification Functionality: Needless to say, after each successful completion or in case of any discrepancy the employee/respective team must be notified.

Chapter 3 – Software Requirement Specification (SRS)

3.1 Data-Flow Diagram



3.2 Data-Flow Briefing

The process is simple and programmatically optimized for minimal human involvement.

- Any Employee who wishes to quit job can find quit job option in action panel in dashboard and apply for resignation. However, if an employee is in dedicated department then after applying for resignation, his/her access to the portal is restricted.
- Any HR may see all the resignation applications and respond in three ways viz. Accept, Reject or Call for Meeting.
- In case the application is accepted, the profile is forwarded to the accounts department for clearing up of dues (may be inwards or outwards). With one click of button, all the employees get the corresponding notification messages whether the application is passed or they need to clear the dues.
- In case they have to clear dues, they are expected to turn up to accounts department and clear the dues, in that case, Accounts Department will advance the employee's resignation application to Infrastructure team.
- Like Accounts Department, with a single click of button, whosoever employee profile is pending at Infrastructure Department gets updated regarding if they have to submit accessories or their application has been verified.
- In case the application is verified by Infrastructure Team, HR relieves the employee.
- Once the HR relieves, relieving letter is made available on employee's portal on action pane through which he/she may go to the letter and print it.
- Once they download their Relieving letter, their account is suspended.

**In case of any progress made on the application, notifications are reflected on the applicant's dashboard so that the application status can be tracked.

3.3 Technologies Used

1. Front-End
    - HTML
    - CSS (Cascading Style Sheets)
    - JavaScript
    - Angular-JS
2. Back-End
    - MySql
3. IDE
    - Sprint Tool Suite
    - SQL-Yog

3.3.1 HTML

Hypertext mark-up language (HTML) is the basic language used to create documents for the Web and, along with HTTP (hypertext transfer protocol) and URLs (universal resource locators), is one of the three main protocols of the Web.

Hypertext is text that contains *hyperlinks*. A hyperlink is an automated cross-reference to another location on the same document or to another document which, when selected by a user, causes the computer to display the linked location or document within a very short period of time.

A *mark-up language* is a set of *tags* that can be embedded in digital text to provide additional information about it, including its content, structure and appearance. This information facilitates automated operations on the text, including formatting it for display, searching it and even modifying it. Some type of mark-up language is employed by every word processing program and by nearly every other program that displays text, although such languages and their tags are typically hidden from the user.

HTML consists of a set of predefined tags that can be embedded in text by web site designers in order to indicate the details of how web pages are *rendered* (i.e., converted into a final, easily usable, form) by web browsers. These details include paragraphing, margins, fonts (including style and size), columns, colors (background and text), links, the location of images, text flow around images, tables and user input form elements (such as spaces for adding text and *submit* buttons).

The tags are enclosed in pointed brackets. For example, the tag that is used to indicate the start of a new paragraph is , and the tag that is used to indicate the end of a paragraph is . Likewise, the tag set for indicating **bold** text is and ; and thus the coding for the word *bold* that appears earlier in this sentence is merely bold.

Tags that are not used to enclose text consist of only a single tag rather than a pair or tags. An example is the tag
, which stands for *break* and is used to start a new line.

A forward slash is always used to *close* single tags and to indicate the closing tag in tag sets. In the case of single tags, it is added after the text of the tag followed by a single space. In the case of closing tags, it precedes the text of the tag.

HTML is not a programming language, because it does not have any *conditionals* (e.g., *if* statements) that allow logic operations and thus it does not provide for interaction with users. This is not a problem, however, because a variety of programming languages that have such capabilities (such as PHP, PERL and JavaScript) can easily be used together with HTML.

The most common filename extension for files written in HTML is *.html*. However, older operating systems and filesystems, such as earlier versions of MS-DOS, limited file extensions to three letters, and thus an *.htm* extension is still supported by browsers and other programs.

The first published specification for a language called HTML was drafted by Tim Berners-Lee, the founder of the Web, with Dan Connolly, and it was published in 1993 by the IETF (Internet Engineering Task Force) as a formal application of SGML (standardized generalized markup language). There was no official standard HTML 1.0 specification, because multiple informal HTML standards existed at the time. The first formal standard was HTML 2.0, which was published in November 1995 as IETF RFC 1866.

HTML 3.0, which was proposed in March 1995, was designed to be compatible with HTML 2.0 while providing many new capabilities, including support for tables, text flow around images and the display of mathematical equations. However, it was too complex for the browsers then available and was thus soon followed by HTML 3.2, which discarded most of its new capabilities and instead adopted many of the features that had already been implemented in the then dominant Netscape and Mosaic browsers.

Since 1996, the HTML specifications have been developed and maintained by the World Wide Web Consortium (W3C), which was founded at the Massachusetts Institute of Technology (MIT) by Berners-Lee in 1994.

HTML 4.0 was first released as a W3C Recommendation in December 1997. It was then superseded by HTML 4.01, which was published in December 1999 and was intended to be the final version of HTML.

Following the publication of HTML 4.0, the W3C's HTML Working Group has increasingly focused on the development of XHTML (extensible HTML) as HTML's *successor*. XHTML is a reformulation of HTML as an XML (extensible markup language) that is much stricter and *cleans up* some of the ambiguities and irregularities of HTML, thereby allowing browsers to be simplified (which is particularly good for mobile devices). It is also more flexible and powerful than HTML, particularly in that it allows the use of user-defined tags, and it has been intended as a transitional step towards replacing HTML by XML languages (of which XHTML is just one) as the standard way to write web pages.

Nevertheless, HTML remains in widespread use and is thus expected to dominate web page creation for years to come. Thus, all web browsers continue to support HTML 4.01 and earlier versions. HTML's popularity is so great, in fact, that there has even been considerable discussion about bringing out a new version, which would likely be called HTML 5.0.

3.3.2 CSS – Cascading Style Sheets

Cascading **S**tyle **S**heets, fondly referred to as CSS, is a simple design language intended to simplify the process of making web pages presentable.

CSS handles the look and feel part of a web page. Using CSS, you can control the colour of the text, the style of fonts, the spacing between paragraphs, how columns are sized and laid out, what background images or colours are used, layout designs, and variations in display for different devices and screen sizes as well as a variety of other effects.

CSS is easy to learn and understand but it provides powerful control over the presentation of an HTML document. Most commonly, CSS is combined with the mark-up languages HTML or XHTML.

Advantages of CSS

- **CSS saves time** − You can write CSS once and then reuse same sheet in multiple HTML pages. You can define a style for each HTML element and apply it to as many Web pages as you want.
- **Pages load faster** − If you are using CSS, you do not need to write HTML tag attributes every time. Just write one CSS rule of a tag and apply it to all the occurrences of that tag. So less code means faster download times.
- **Easy maintenance** − To make a global change, simply change the style, and all elements in all the web pages will be updated automatically.
- **Superior styles to HTML** − CSS has a much wider array of attributes than HTML, so you can give a far better look to your HTML page in comparison to HTML attributes.
- **Multiple Device Compatibility** − Style sheets allow content to be optimized for more than one type of device. By using the same HTML document, different versions of a website can be presented for handheld devices such as PDAs and cell phones or for printing.
- **Global web standards** − Now HTML attributes are being deprecated and it is being recommended to use CSS. So its a good idea to start using CSS in all the HTML pages to make them compatible to future browsers.
- **Offline Browsing** − CSS can store web applications locally with the help of an offline catche.Using of this, we can view offline websites.The cache also ensures faster loading and better overall performance of the website.
- **Platform Independence** − The Script offer consistent platform independence and can support latest browsers as well.

Who creates and maintains CSS?

CSS was invited by **Håkon Wium Lie** on October 10, 1994 and maintained through a group of people within the W3C called the CSS Working Group. The CSS Working Group creates documents called **specifications**. When a specification has been discussed and officially ratified by W3C members, it becomes a recommendation.

These ratified specifications are called recommendations because the W3C has no control over the actual implementation of the language. Independent companies and organizations create that software.

NOTE − The World Wide Web Consortium, or W3C is a group that makes recommendations about how the Internet works and how it should evolve.

CSS Versions

Cascading Style Sheets, level 1 (CSS1) was came out of W3C as a recommendation in December 1996. This version describes the CSS language as well as a simple visual formatting model for all the HTML tags.

CSS2 was became a W3C recommendation in May 1998 and builds on CSS1. This version adds support for media-specific style sheets e.g. printers and aural devices, downloadable fonts, element positioning and tables.

CSS3 was became a W3C recommendation in June 1999 and builds on older versions CSS. it has divided into documentations is called as Modules and here each module having new extension features defined in CSS2.

CSS3 Modules

CSS3 Modules are having old CSS specifications as well as extension features.

- Selectors
- Box Model
- Backgrounds and Borders
- Image Values and Replaced Content
- Text Effects
- 2D/3D Transformations
- Animations
- Multiple Column Layout
- User Interface

3.3.3 JavaScript

JavaScript is a dynamic computer programming language. It is lightweight and most commonly used as a part of web pages, whose implementations allow client-side script to interact with the user and make dynamic pages. It is an interpreted programming language with object-oriented capabilities.

JavaScript was first known as **LiveScript,** but Netscape changed its name to JavaScript, possibly because of the excitement being generated by Java. JavaScript made its first appearance in Netscape 2.0 in 1995 with the name **LiveScript**. The general-purpose core of the language has been embedded in Netscape, Internet Explorer, and other web browsers.

The ECMA-262 Specification defined a standard version of the core JavaScript language.

- JavaScript is a lightweight, interpreted programming language.
- Designed for creating network-centric applications.
- Complementary to and integrated with Java.
- Complementary to and integrated with HTML.
- Open and cross-platform

Client Side JavaScript

Client-side JavaScript is the most common form of the language. The script should be included in or referenced by an HTML document for the code to be interpreted by the browser.

It means that a web page need not be a static HTML, but can include programs that interact with the user, control the browser, and dynamically create HTML content.

The JavaScript client-side mechanism provides many advantages over traditional CGI server-side scripts. For example, you might use JavaScript to check if the user has entered a valid e-mail address in a form field.

The JavaScript code is executed when the user submits the form, and only if all the entries are valid, they would be submitted to the Web Server.

JavaScript can be used to trap user-initiated events such as button clicks, link navigation, and other actions that the user initiates explicitly or implicitly

Advantages of JavaScript

The merits of using JavaScript are:

- **Less server interaction** − You can validate user input before sending the page off to the server. This saves server traffic, which means less load on your server.
- **Immediate feedback to the visitors** − They don't have to wait for a page reload to see if they have forgotten to enter something.
- **Increased interactivity** − You can create interfaces that react when the user hovers over them with a mouse or activates them via the keyboard.
- **Richer interfaces** − You can use JavaScript to include such items as drag-and-drop components and sliders to give a Rich Interface to your site visitors.

Limitations of JavaScript

We cannot treat JavaScript as a full-fledged programming language. It lacks the following important features:

- Client-side JavaScript does not allow the reading or writing of files. This has been kept for security reason.
- JavaScript cannot be used for networking applications because there is no such support available.
- JavaScript doesn't have any multithreading or multiprocessor capabilities.

Once again, JavaScript is a lightweight, interpreted programming language that allows you to build interactivity into otherwise static HTML pages.

JavaScript Development Tools

One of major strengths of JavaScript is that it does not require expensive development tools. You can start with a simple text editor such as Notepad. Since it is an interpreted language inside the context of a web browser, you don't even need to buy a compiler.

To make our life simpler, various vendors have come up with very nice JavaScript editing tools. Some of them are listed here –

- **Microsoft FrontPage** − Microsoft has developed a popular HTML editor called FrontPage. FrontPage also provides web developers with a number of JavaScript tools to assist in the creation of interactive websites.
- **Macromedia Dreamweaver MX** − Macromedia Dreamweaver MX is a very popular HTML and JavaScript editor in the professional web development crowd. It provides several handy prebuilt JavaScript components, integrates well with databases, and conforms to new standards such as XHTML and XML.
- **Macromedia HomeSite 5** − HomeSite 5 is a well-liked HTML and JavaScript editor from Macromedia that can be used to manage personal websites effectively.

Where is JavaScript Today?

The ECMAScript Edition 5 standard will be the first update to be released in over four years. JavaScript 2.0 conforms to Edition 5 of the ECMAScript standard, and the difference between the two is extremely minor.

The specification for JavaScript 2.0 can be found on the following site: http://www.ecmascript.org/

Today, Netscape's JavaScript and Microsoft's JScript conform to the ECMAScript standard, although both the languages still support the features that are not a part of the standard.

3.3.4 Angular-JS

Angular-JS is an open source web application framework. It was originally developed in 2009 by Misko Hevery and Adam Abrons. It is now maintained by Google. Its latest version is 2.
Definition of Angular-JS as put by its official documentation is as follows −

Angular-JS is a structural framework for dynamic web apps. It lets you use HTML as your template language and lets you extend HTML's syntax to express your application's components clearly and succinctly. Angular's data binding and dependency injection eliminate much of the code you currently have to write. And it all happens within the browser, making it an ideal partner with any server technology.

Features

- Angular-JS is a powerful JavaScript based development framework to create RICH Internet Application (RIA).
- Angular-JS provides developers options to write client side application (using JavaScript) in a clean MVC(Model View Controller) way.
- Application written in Angular-JS is cross-browser compliant. Angular-JS automatically handles JavaScript code suitable for each browser.
- Angular-JS is open source, completely free, and used by thousands of developers around the world. It is licensed under the Apache License version 2.0.

Overall, Angular-JS is a framework to build large scale and high performance web application while keeping them as easy-to-maintain.

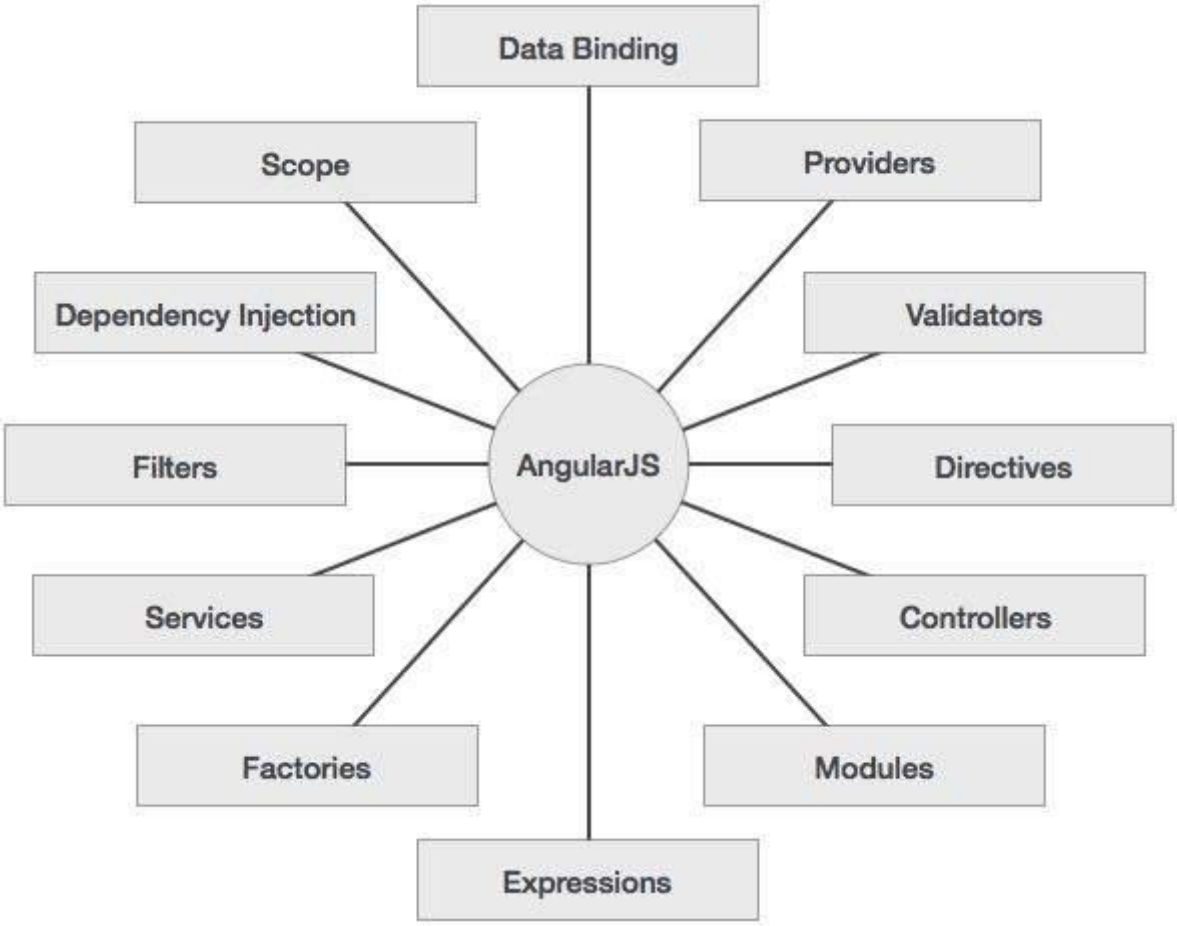
Core Features

Following are most important core features of Angular-JS –

- **Data-binding** − It is the automatic synchronization of data between model and view components.
- **Scope** − These are objects that refer to the model. They act as a glue between controller and view.
- **Controller** − These are JavaScript functions that are bound to a particular scope.
- Services – Angular-JS come with several built-in services for example $https: to make a XMLHttpRequests. These are singleton objects which are instantiated only once in app.
- **Filters** − These select a subset of items from an array and returns a new array.
- **Directives** − Directives are markers on DOM elements (such as elements, attributes, CSS, and more). These can be used to create custom HTML tags that serve as new, custom widgets. Angular-JS has built-in directives (ngBind, ngModel...)
- **Templates** − These are the rendered view with information from the controller and model. These can be a single file (like index.html) or multiple views in one page using "partials".
- **Routing** − It is concept of switching views.
- **Model View Whatever** − MVC is a design pattern for dividing an application into different parts (called Model, View and Controller), each with distinct responsibilities. Angular-JS does not implement MVC in the traditional sense, but rather something closer to MVVM (Model-View-ViewModel). The Angular JS team refers it humorously as Model View Whatever.
- **Deep Linking** − Deep linking allows you to encode the state of application in the URL so that it can be bookmarked. The application can then be restored from the URL to the same state.
- **Dependency Injection** – Angular-JS has a built-in dependency injection subsystem that helps the developer by making the application easier to develop, understand, and test.

Concepts

Following diagram depicts some important parts of AngularJS which we will discuss in detail in the subsequent chapters.



Advantages of Angular-JS

- Angular-JS provides capability to create Single Page Application in a very clean and maintainable way.
- Angular-JS provides data binding capability to HTML thus giving user a rich and responsive experience
- Angular-JS code is unit testable.
- Angular-JS uses dependency injection and make use of separation of concerns.
- Angular-JS provides reusable components.
- With Angular-JS, developer writes less code and gets more functionality.
- In Angular-JS, views are pure html pages, and controllers written in JavaScript do the business processing.

On top of everything, AngularJS applications can run on all major browsers and smart phones including Android and iOS based phones/tablets.

Disadvantages of Angular-JS

Though Angular-JS comes with lots of plus points but same time we should consider the following points −

- **Not Secure** − Being JavaScript only framework, application written in AngularJS are not safe. Server side authentication and authorization is must to keep an application secure.
- **Not degradable** − If your application user disables JavaScript then user will just see the basic page and nothing more.

The Angular-JS Components

The Angular-JS framework can be divided into following three major parts −

- **ng-app** − This directive defines and links an Angular-JS application to HTML.
- **ng-model** − This directive binds the values of Angular-JS application data to HTML input controls.
- **ng-bind** − This directive binds the Angular-JS Application data to HTML tags.

3.3.5 Spring-Boot

Spring Boot is a brand new framework from the team at Pivotal, designed to simplify the bootstrapping and development of a new Spring application. The framework takes an opinionated approach to configuration, freeing developers from the need to define boilerplate configuration. In that, Boot aims to be a front-runner in the ever-expanding rapid application development space.

The Spring IO platform has been criticized over the years for having bulky XML configuration with complex dependency management. During last year's SpringOne 2GX conference, Pivotal CTO, Adrian Colyer acknowledged those criticisms, and made special note that a goal of the platform going forward is to embrace an XML-free development experience. Boot takes that mission statement to the extreme, not only freeing developers from the need for XML, but also, in some scenarios, releasing them from the tedium of writing import statements. In the days following its public beta release, Boot gained some viral popularity by demonstrating the framework's simplicity with a runnable web application that fit in under 140-characters, delivered in a tweet.

How to Build (and Scale) with Micro-Services

Spring Boot is not, however, an alternative to the many projects that comprise the "Foundation" layer of the Spring IO platform. Indeed, the goal of Spring Boot is not to provide new solutions for the many problem domains already solved, but rather to leverage the platform in fostering a development experience that simplifies the use of those already-available technologies. This makes Boot an ideal choice for developers who are familiar with the Spring ecosystem, while also catering to new adopters by allowing them to embrace Spring technologies in a simplified manner.

In pursuit of such an improved development experience, Spring Boot — and, indeed, the entire Spring ecosystem — has embraced the Groovy programming language. Groovy's powerful MetaObject protocol, pluggable AST transformation process, and embedded dependency resolution engine are what facilitate many of the shortcuts that Boot affords. At the core of its compilation model, Boot utilizes Groovy to build project files, so that it can decorate a class' generated bytecode with common imports and boilerplate methods, such as a class' main method. This allows applications written with Boot to remain concise, while still offering a breadth of functionality.

3.4 Software Development Model Used

Since there were unknown uncertainties, also the technology was new, I preferred Spiral-Model so that I could develop iteratively. Even if I'd miss some important details, it would get covered in next iteration.

System Requirements

Hardware

Processor	:	Core2Duo or above
RAM	:	Server Side (at least 3 GB); Client Side (at least 512 MB)
Peripheral Devices	:	Standard I/O

Software

Operating System	:	Server: Windows 7 or above; Client: Any
Browser (Client)	:	Any
IDE (Server)	:	Spring Tool Suite

Spiral Model

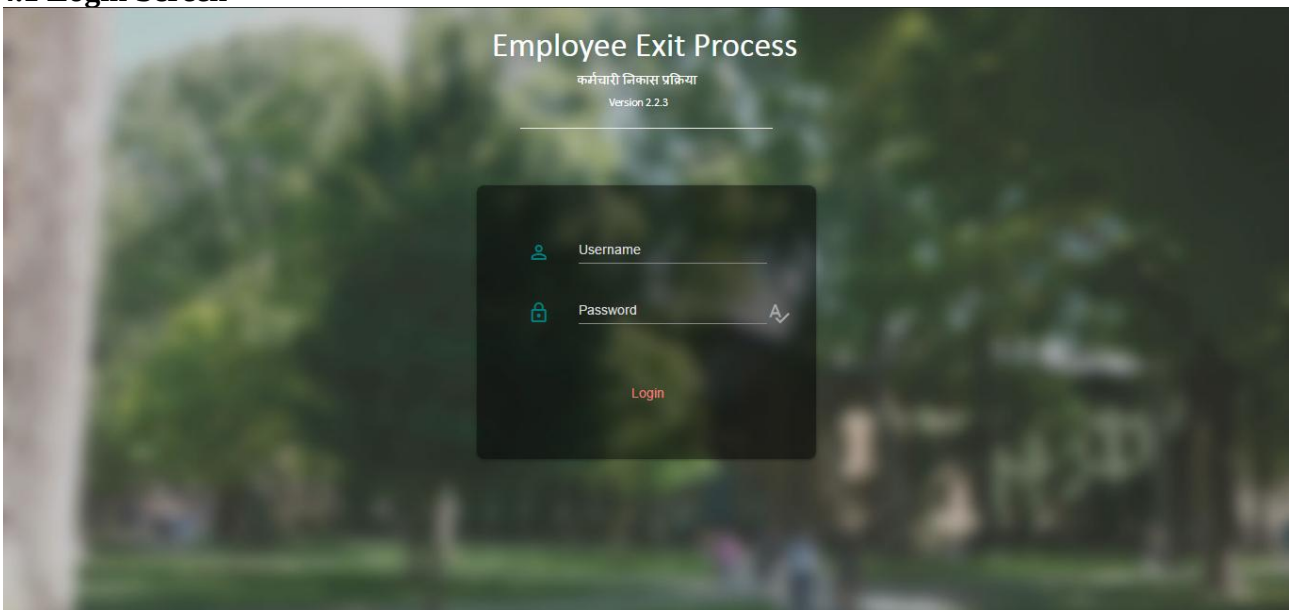
The spiral model, also known as the spiral lifecycle model, is a systems development lifecycle (SDLC) model used in information technology (IT). This model of development combines the features of the prototyping model and the waterfall model. The spiral model is favored for large, expensive, and complicated projects.

The steps in the spiral model can be generalized as follows:

1. The new system requirements are defined in as much detail as possible. This usually involves interviewing a number of users representing all the external or internal users and other aspects of the existing system.
2. A preliminary design is created for the new system.
3. A first prototype of the new system is constructed from the preliminary design. This is usually a scaled-down system, and represents an approximation of the characteristics of the final product.
4. A second prototype is evolved by a fourfold procedure: (1) evaluating the first prototype in terms of its strengths, weaknesses, and risks; (2) defining the requirements of the second prototype; (3) planning and designing the second prototype; (4) constructing and testing the second prototype.
5. At the customer's option, the entire project can be aborted if the risk is deemed too great. Risk factors might involve development cost overruns, operating-cost miscalculation, or any other factor that could, in the customer's judgment, result in a less-than-satisfactory final product.
6. The existing prototype is evaluated in the same manner as was the previous prototype, and, if necessary, another prototype is developed from it according to the fourfold procedure outlined above.
7. The preceding steps are iterated until the customer is satisfied that the refined prototype represents the final product desired.
8. The final system is constructed, based on the refined prototype.
9. The final system is thoroughly evaluated and tested. Routine maintenance is carried out on a continuing basis to prevent large-scale failures and to minimize downtime.

Chapter 4 – Snapshots and Work Briefing

4.1 Login Screen

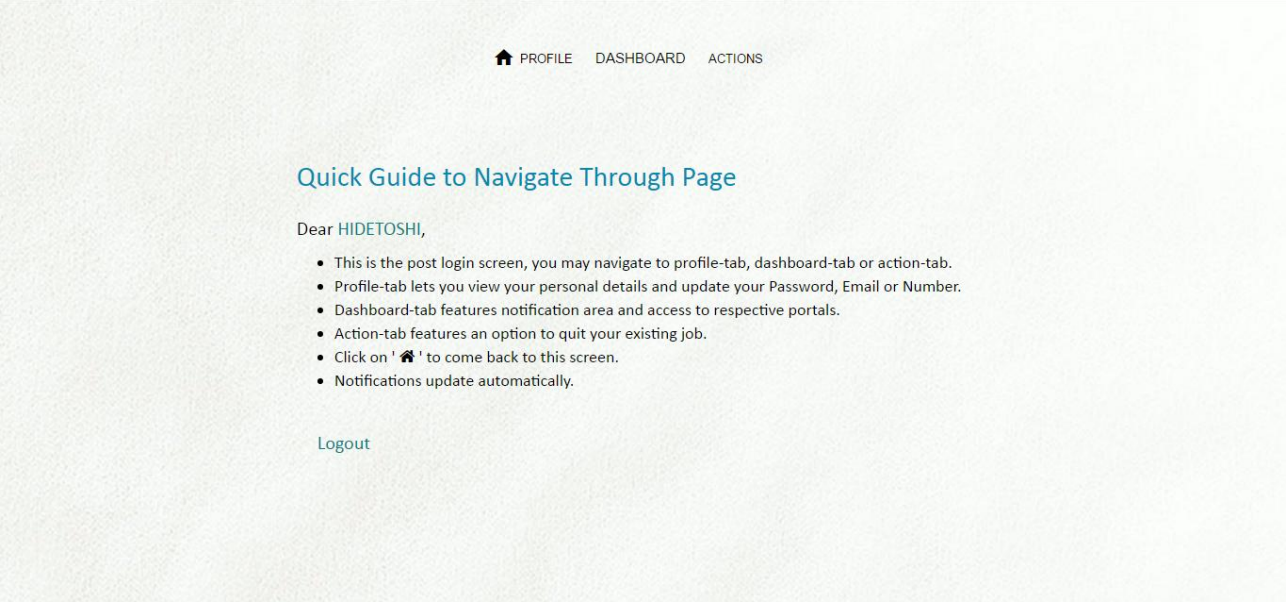


Functionalities

- Error messages regarding validity of username and/or password are shown in placeholder text itself, upon error, placeholder text colour modifies to red.
- Text view icon adjacent to password input lets user peek through what they have entered in password section. The view changes from password type to text as long as the icon is kept pressed.
- Since account of an employee is deactivated after 2 days of downloading relieving letter, he/she is barred from logging in.
- When user presses login button, the username + password string is base64 encoded and sent to back-end for the verification. If valid user exists, pertinent information is sent back to front-end which is used in subsequent areas related to functioning of departments etc.

Chapter 4 – Snapshots and Work Briefing

4.2 Post-Login Screen



Functionalities

- This page is only intended to provide necessary instructions to users after login.
- All the users irrespective of their departments see their screen. However, there are certain instructions which department specific and are only visible to employees of respective departments.
- 'Hidetoshi Dekisugi' is an HR, for our convenience I will be using his alias to showcase other areas of this application.
- This page provide navigation bar, through which logged-in-employee may go to profile-tab, dashboard-tab or actions-tab.
- Custom animation effects are implemented on the navigation links, which respond to user changes.
- This screen has a logout button which terminates current logged-in-user session.
- Without logging out, it is not possible to go to login-screen login page grabs the session and since it finds that a user is already logged in, it redirects to the post-login screen.

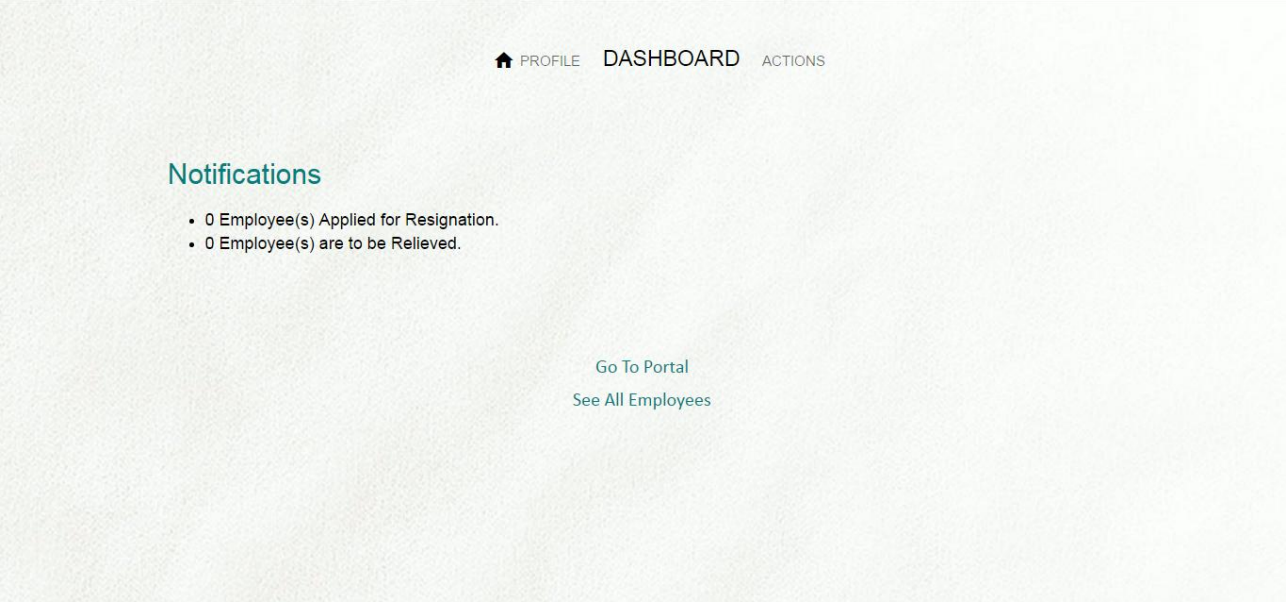
4.3 Profile Tab

Functionalities

- Profile tab features edition of personal data.
- Currently, since not much data is stored for employee, any employee has following details viz. Username, Password, Department, Email-Id, Contact Number, Date Of Joining, Accessories Received From Company.
- User can only modify the following: Password, Email-Id, and Contact Number. If smart user tries to modify the user object in JavaScript source hoping he would be able to modify other fields than these three, he will fail. Because there is robust mechanism implemented at back-end which not only checks who is making the change, but also what changes are being made. If it detects a change which is not supposed to be made, it redirects the smart user to duckduckgo.com/?q=how+to+hack+a+website. This is how I bully smart users.
- Also, If the user tries to spoof his identity by entering someone else's Email-Id or Password, again, I have a check mechanism which searches through all the employees before committing changes and if it finds a duplicate, it alerts user that "Are you sure you are not trying to hypnotize our security?".
- All the necessary field validations are applied on the input boxes which guides users into entering valid data.
- Clicking update button triggers the data to be sent, if there is no change, front-handles it there itself and alerts user about that no change. However, if someone does omit this front-check mechanism then there is same check at back-end which would then return the same message. Clearly I have spent more time in thinking and implementing how to stop people from kidding around.

Chapter 4 – Snapshots and Work Briefing

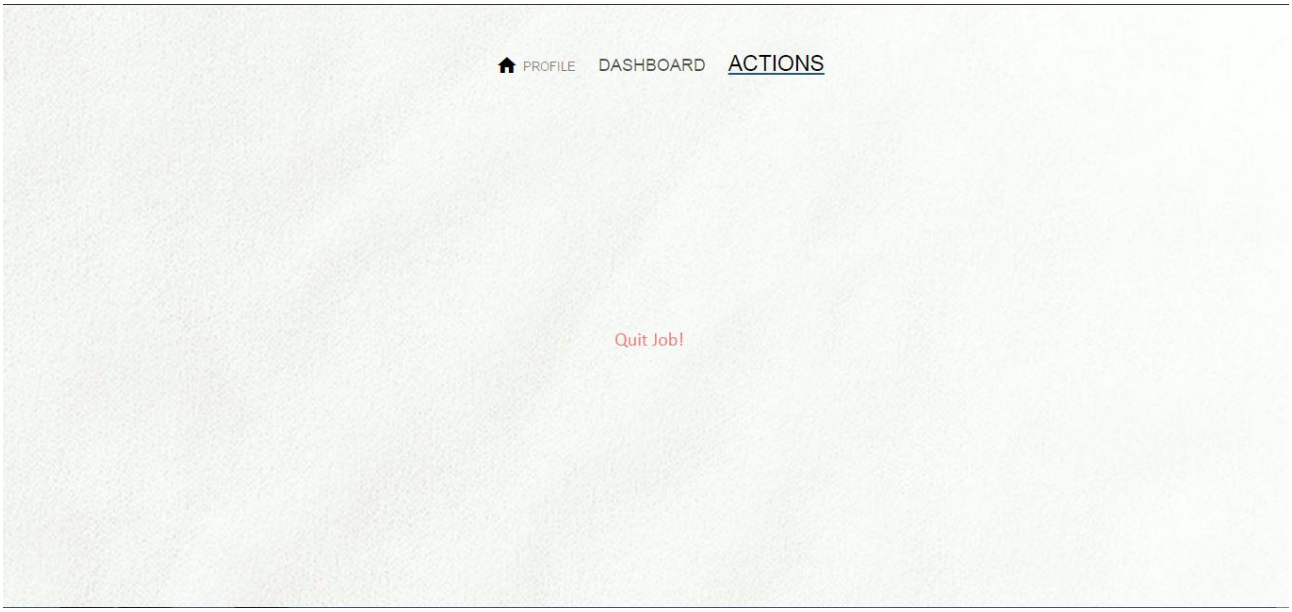
4.4 Dashboard Tab



Functionalities

- This is dashboard; all the department specific functionalities go through this page. For convenience I am only considering HR-Dashboard. The only difference between other departments in dashboard is the notifications are department specific. So in this same page if user is HR, they sees following notifications, if user is in Accounts Department, they see how many applications are pending at Accounts Department and similarly Infrastructure Department.
- For other departments, See All Employees is not accessible as only HR can view complete details of employees, however, when an application is pending at any department, there is a quick view feature for all the departments, through which if the department clicks on name of the applicant, they see quick pertinent details of the applicant; in case they wanted to have a quick view at some other details other than which is displayed on the screen by default.
- Clicking on "Go To Portal" triggers a redirect function which redirects to respective portals depending on who is logged in and what is his/her department. Again some smart users might want to edit the source of JavaScript and try to access someone else's department. I got it covered. Whenever department specific changes are made, an object is sent which is {current-logged-in-user + user-whose-data-is-modified} so even if someone gains access to someone else's portal and feel pretty happy about it, he would be merely looking at a shell with no function at it since all this is done at back-end, there is nothing our smart user could do. In case user is not that smart but a script kiddie and edits his own object to spoof identity only, when he/she tries to access someone else's portal, it will simply redirect to duckduckgo.com/?q=how+to+hack+a+website.
- Importantly, all the notifications are automatically scheduled to update every 0.5 seconds. So anything which happens around gives an illusion of happening live. Since the update time is less, processing of application is very fast. Also, to prevent unnecessary load on server, as soon as the logged-in-user leaves this screen, the scheduler stops automatically till the user gets back on this screen. Which means it doesn't runs in background when the user is not on dashboard.
- Since a regular employee has no department specific roles, on his notifications only thing that shall appear is the progress of his/her resignation application.

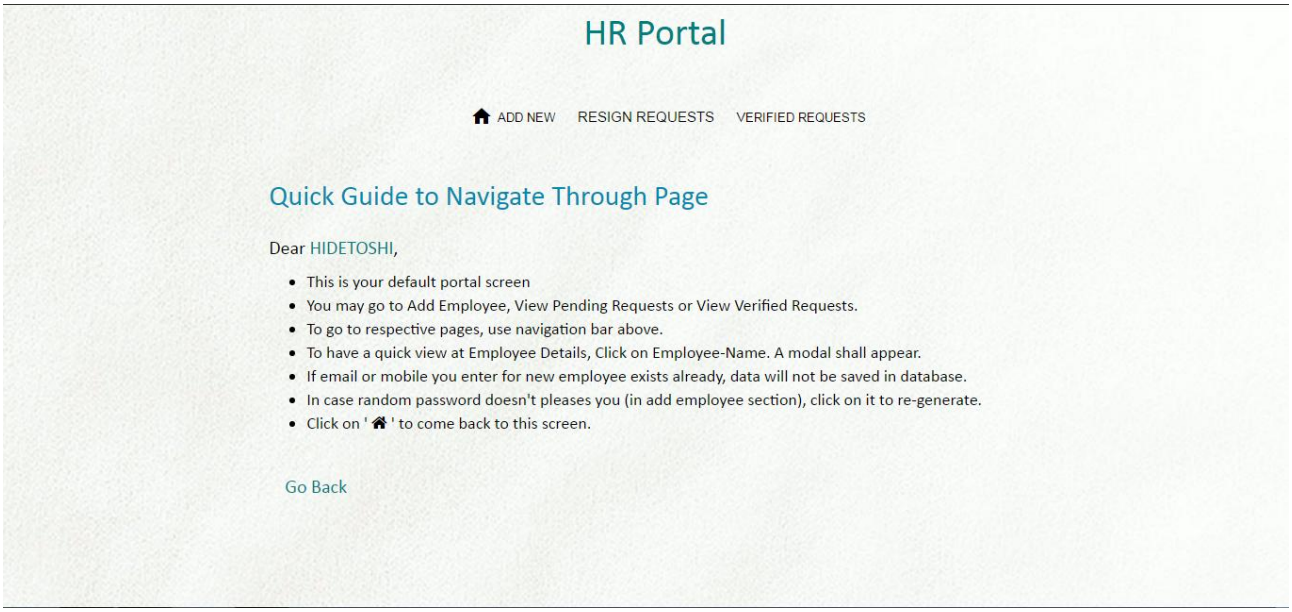
4.5 Actions Tab



Functionalities

- In the problem statement as there were no other actions that were to be performed, so for now only action a user can perform apart from department specific functions is to resign.
- On clicking “Quit Job” button, Resignation Applied flag is set and the button is disabled so that it is not retriggered again.
- Once an employee applies for resignation, if he/she is in any specific department, their access to the department portal is invoked for obvious reasons. However, if the HR rejects the application, access to portal and “Quit Job” button becomes functional again.
- Dashboard immediately reflects changes about applying for resignation and thenceforth keeps track of the resignation application as it goes through various departments.

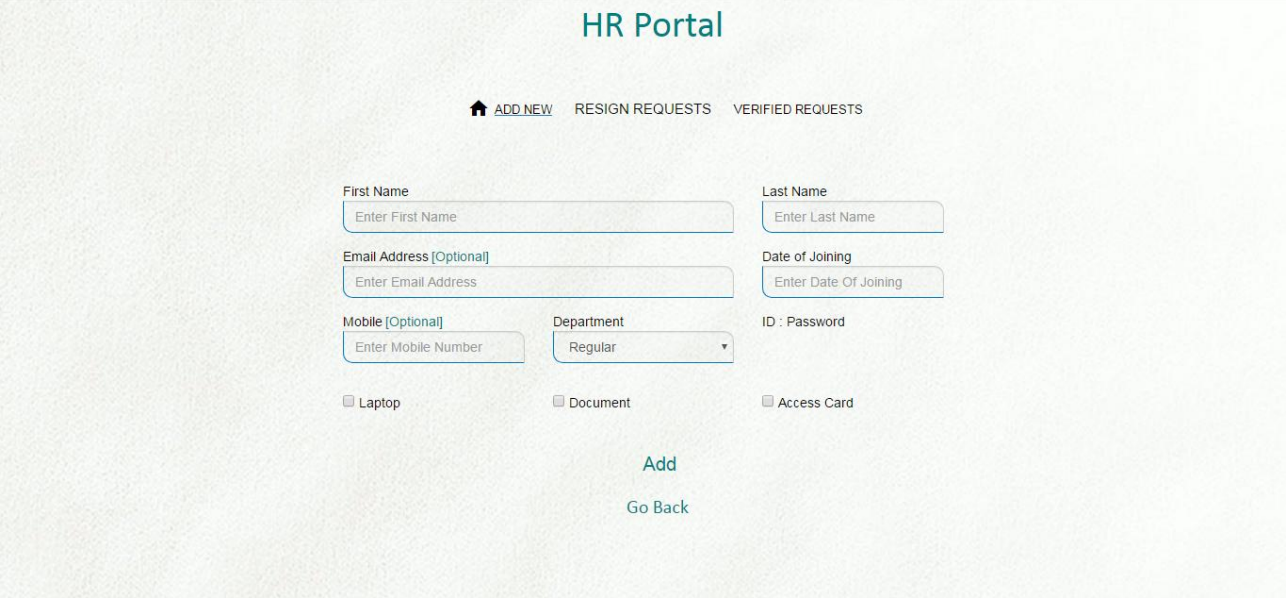
4.6 HR Portal



Functionalities

- This is HR Portal only accessible to HRs. I have already covered in previous briefing that no matter what smart user can not spoof and exploit functions of other departments.
- This screen is for all the necessary instructions needed to navigate through this portal.
- Clicking “Go Back” button sends back to “Post Login” screen.
- From here, there are three navigation options viz. Add-New-Employee, View-Pending-Resignation-Requests and View-Verified-Resignation-Requests. Each having definite functions.
- Add-New tab is expected to be used to enter a new employee data into the database.
- Resign Requests tab is expected to be used to review resignation application primarily.
- Verified Requests tab is used to issue relieving letter.

4.6.1 HR Portal – Add New Tab



Functionalities

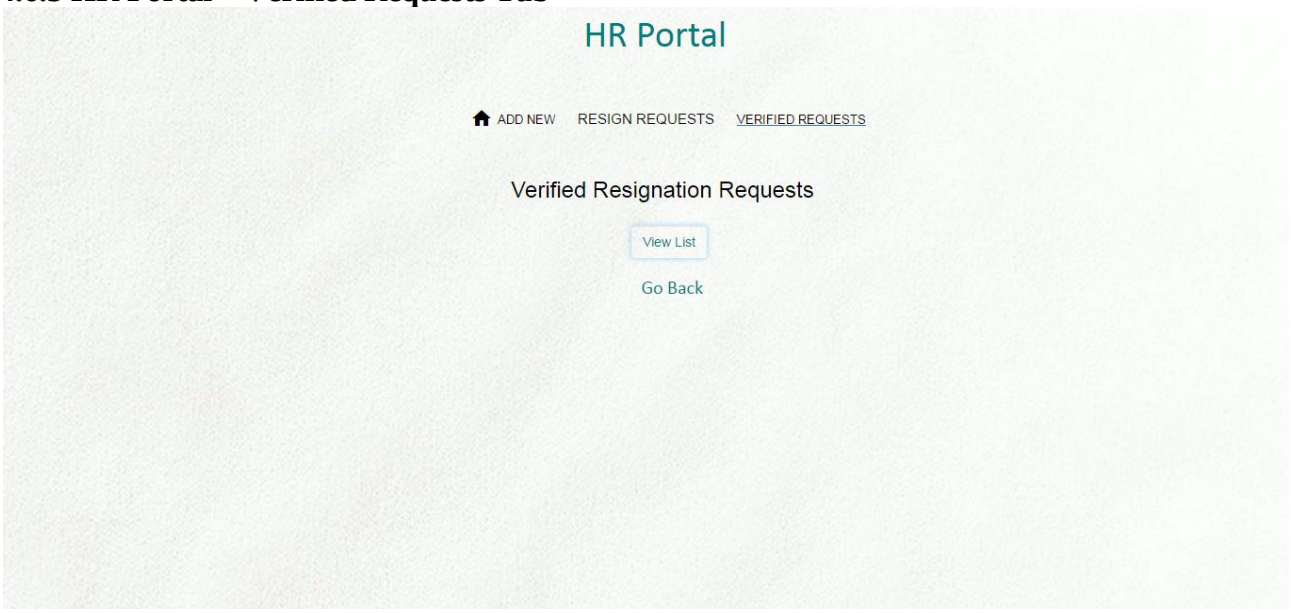
- This screen features adding new employee to the database.
- It has the following fields which are common for all the employees.
- Optional fields are marked optional which means they may not be entered. Also, accessories are optional which means, an employee might not get the accessories from the company.
- Id and Password for the new employee is generated automatically as soon as the first and last name is entered.
- For Username, first three characters of last name, first 2 characters of first name and three random characters are appended together. Whereas for Password, a random five character string is generated.
- Since, I was given the task for Employee Exit, this page is used only to create test cases as in real life scenario there has to be other data as well apart with these viz. Address, Alternate Contact etc.
- Importantly, here also, no duplicates allowed. Duplicate check is for Contact Number and Email-Id. A custom function is written to check the validity of data at back-end. So if someone tries to spoof identity, he will be caught.

4.6.2 HR Portal – Resign Requests Tab

Functionalities

- From this screen, HR may see all the resignation applications by clicking “View List” button.
- The list appears in scrollable window just above the button and below heading.
- It provides HR three choices, Accept, Reject or Call for Meeting.
- If it is Call for Meeting, the application stays there itself and the applicant is notified which is visible on his/her dashboard.
- If it is “Reject”, applicant’s profile gets restored at initial state with all the permissions re-instated.
- If it is “Accept”, applicant’s profile gets pushed to Accounts department for further verification ahead.
- For a quick view HR shall tap on the name of applicant and a modal shall appear.

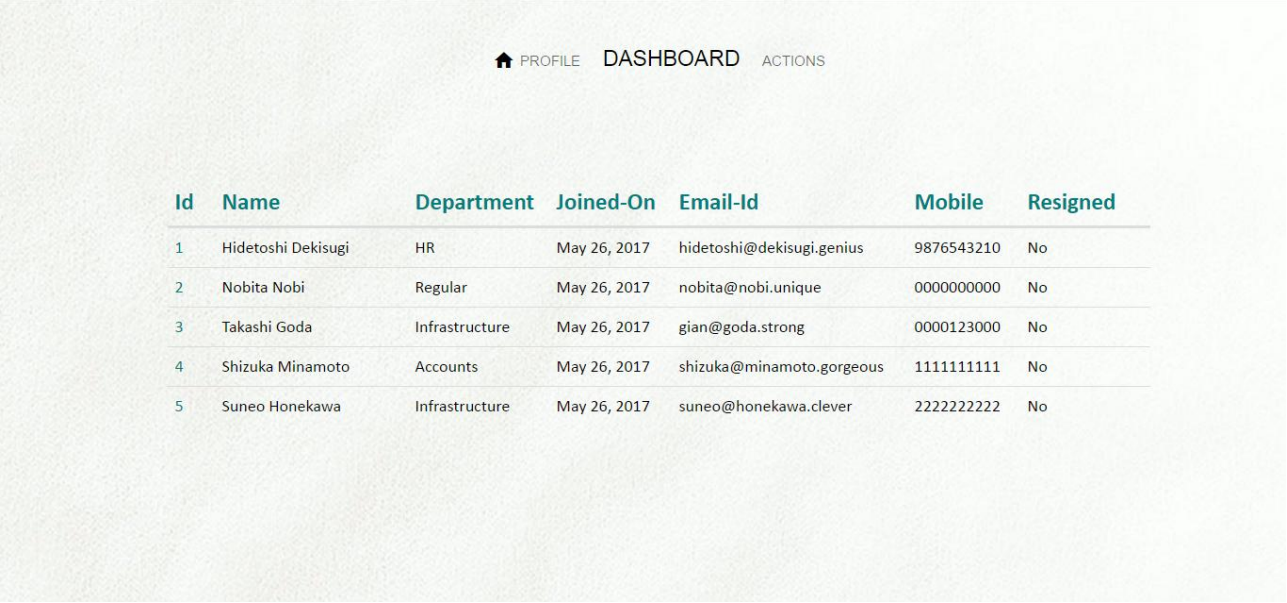
4.6.3 HR Portal – Verified Requests Tab



Functionalities

- Similar to Pending Requests Tab, this page lists all the applicants who have undergone all the process and are to receive relieving letter.
- Again like pending requests tab, for a quick view HR shall tap on the name of applicant and a modal shall appear.
- With the name of applicant there will be a trailing button “Relieve” which triggers generation of relieving letter for the applicant.

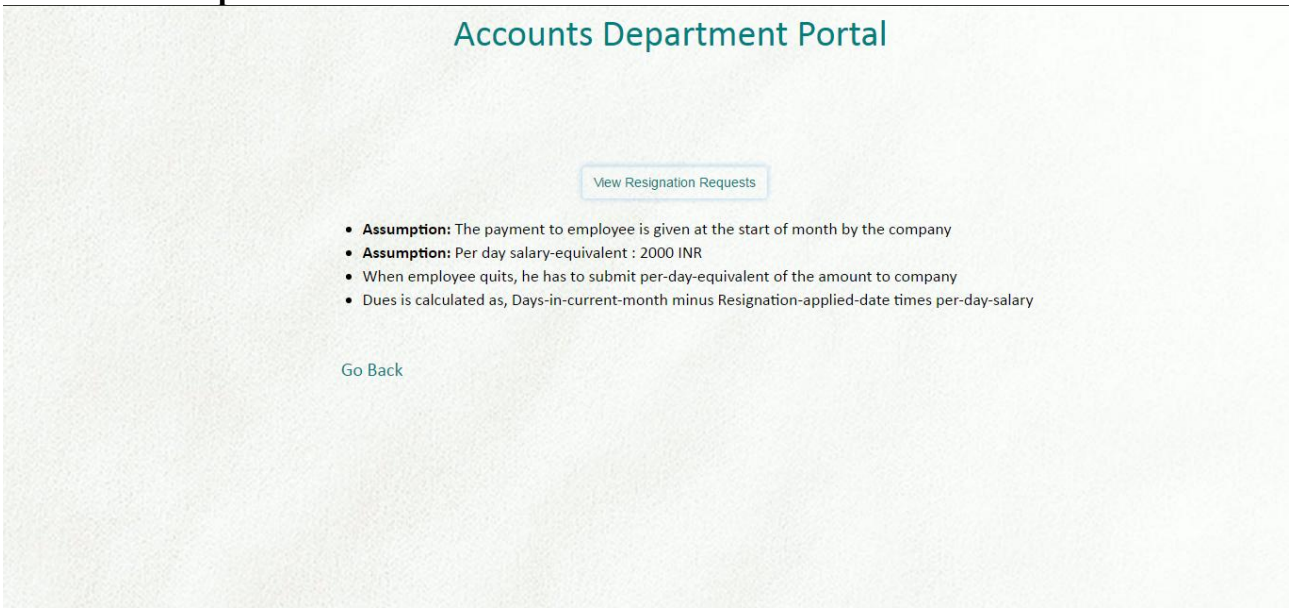
4.6.4 HR Portal – All Employees



Functionalities

- This screen is only accessible by the HRs.
- This page displays information about all the employees who are/were with the company. It also displays details about those who applied for resignation in the last column with Resignation Applied Date.
- To navigate back or elsewhere, user is expected to use the navigation bar on the top. Clicking on Dashboard will navigate user to dashboard screen; which is technically behaving like a back button in this case.

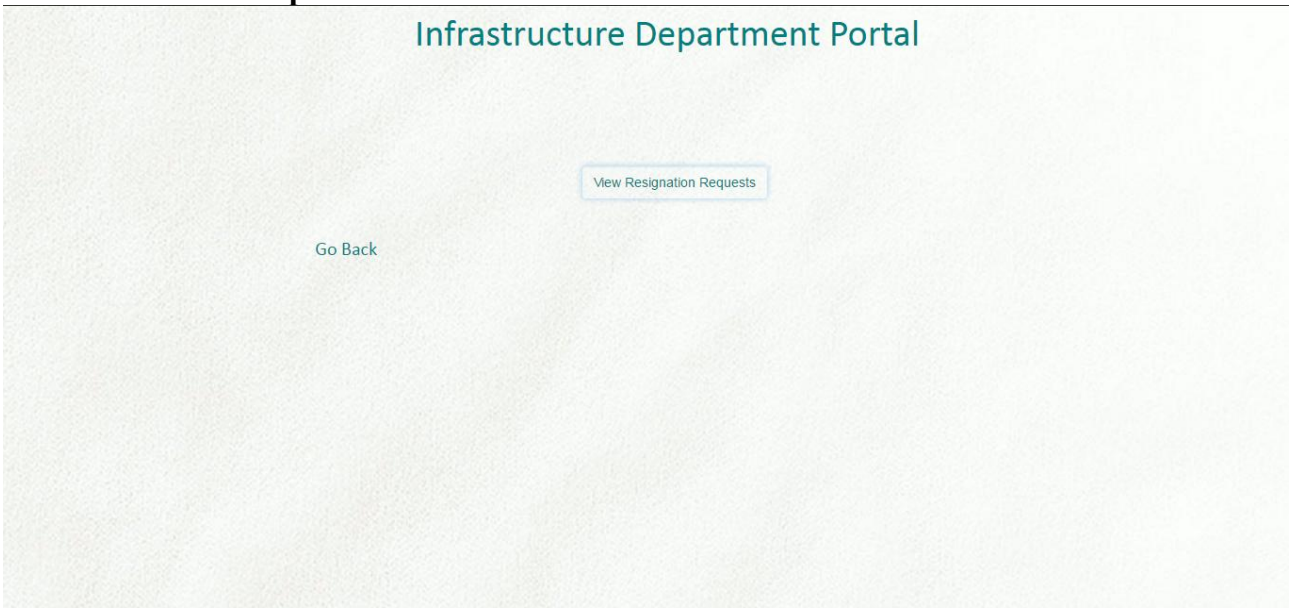
4.7 Accounts Department Portal



Functionalities

- This screen is instructions cum working screen of Accounts Department.
- There are certain calculation of dues which are done automatically based on joining date of applicant and pending days assuming salary is always issued at start of month.
- All the applications that HR had accepted are visible here.
- On clicking “View Resignation Requests” the list appears which is scrollable.
- This portal features to buttons to respond to applications. “Clear Dues and Pass” and “Update All”.
- Clear dues and pass button trails each applicant, in case the department wants to deal individually.
- Update all button updates the entire applicant list respectively i.e. if there are no pending dues; it automatically passes the application to Infrastructure Department else, sends notification to applicant to submit/receive the amount to/from the company.

4.8 Infrastructure Department Portal



Functionalities

- The layout of Infrastructure department is similar to that of Accounts Department; however there is only one function to perform which is to check if there are no un-submitted assets from the company viz. Documents, Laptops, Access-Card.
- All the application which are passed from Accounts Department are visible here on clicking “View Resignation Requests”.
- Similar to Accounts Department, this department has “Receive accessories and Update” and “Update All” button.
- Like Accounts Department, both the buttons function in similar way.
- Receive accessories and update lets department to respond to specific applicant one by one.
- Whereas Update all updates the applicants depending upon the criteria that if applicant has some accessories, he/she receives notification to submit those and if he/she doesn’t then the application is automatically forwarded to HR for issuing of relieving letter.
- Like Accounts Department, there are not heavy functions that are to be performed. Both the departments deal the working with only two operable buttons.

Summary

Employee Exit Process is all about the detailed steps an employee and the organization must undergo for the fulfilment of terms and conditions and taking all the formalities into account. This application reduces human involvement by pretty much optimizing almost everything, so that the process becomes smooth and hassle-free. Every department has many other things to do, so with this application, they are no longer required to keep a close eye on each and every application manually, rather they could simply look at the dashboard and know if any application is pending. Also, the employee who applied for resignation gets the relief of tracking the progress of application and not revolving around department inquiring about the same.

With this application, I have reduced human involvement which was not required and presented an application with very interactive user interface and robust security, which contests in being adopted by existing organizations.

Bibliography

Following websites were referred in making this project.

Name		**Link To Web-Site**
W3Schools	:	https://www.w3schools.com/
Code-Cademy	:	https://www.codecademy.com
Spring.IO	:	http://spring.io/guides/gs/rest-service/
Google Material Icons	:	https://material.io/guidelines/
Mkyong	:	http://www.mkyong.com/tutorials/spring-tutorials/
Java-t-Point	:	https://www.javatpoint.com/spring-tutorial
Stack-Overflow	:	https://stackoverflow.com/

And countless searches on Google, DuckDuckGo...