HUMAN RESOURCE MANAGEMENT SYSTEM

Project report submitted in partial fulfillment of the requirement for the degree of Bachelor of Technology

in

Computer Science and Engineering

By

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Under the supervision of

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to

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Candidate's Declaration

I hereby declare that the work presented in this report entitled "Human Resource Management System" in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Computer Science and Engineering** submitted in the department of Computer Science & Engineering and Information Technology**,** Jaypee University of Information Technology Waknaghat is an authentic record of my own work carried out over a period from February 2018 to May 2018 under the supervision of **Dr. Punit Gupta,** Assistant Professor (Senior Grade), Computer Science & Engineering and Information Technology.

The matter embodied in the report has not been submitted for the award of any other degree or diploma.

Janit Bansal, 141227

This is to certify that the above statement made by the candidate is true to the best of my knowledge.

Dr. Punit Gupta

Assistant Professor (Senior Grade)

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Dated:

ACKNOWLEDGMENT

It is a genuine pleasure to express our deep sense of thanks and gratitude to our mentor, philosopher and guide **Dr. Punit Gupta**, Assistant Professor (Senior Grade), Computer Science & Engineering and Information Technology. His dedication and keen interest above all his overwhelming attitude to help me had been solely and mainly responsible for completing our work. His timely advice, meticulous scrutiny, scholarly advice and scientific approach have helped me to a very great extent to accomplish this task.

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JANIT BANSAL (141227)

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Chapter-1

Human Resource Management System: An Introduction

1.1 Introduction

"Human Resource Management System": HRMS could be a mix of varied system parts and processes that helps to create a bridge between human resource management and data technology through HR package.

Earlier, the client–server design develop within the late Eighties, respective time unit processes of automation were downgrade to the computers that might handle huge amounts of knowledge agreements. In result of the high capital investment it is required to shop for computer code program properly, these internally-developed HRMS were restricted to organizations that possessed an oversized quantity of capital. The arrival of Application Service supplier, client–server, and computer code as a Human Resource Management Systems or SaaS Service enabled more and more such systems of high management body. Presently Human Resource Management Systems are:

- HR management Information system
- Benefits Administration
- Work Time
- Appraisal performance
- Payroll
- Employee Self-Service
- Performance Record

The first payroll module automates pay method by gathering information on worker time and group action, shrewd varied deductions and taxes, and generating periodic pay cheques and worker tax reports. Information is usually fed from the human resources and time keeping modules to calculate automatic deposit and manual cheque writing capabilities. This module will embrace all employee-related transactions similarly as integrate with existing monetary management systems.

The time period module gathers standardized time and work connected efforts. the foremost advanced modules give broad flexibility in knowledge assortment ways, labor

distribution capabilities and knowledge analysis options. analysis and potencymetrics square measure the first functions.

The edges administration module provides a system for organizations to administer and track worker participation in benefits programs. These usually cover insurance, compensation, share and retirement.

The time unit management module may be a part covering several alternative time unit aspects from application to retirement. The system records basic demographic and address information, selection, coaching and development, capabilities and skills management, compensation designing records and alternative connected activities. Forefront systems give the power to "read" applications and enter relevant information to applicable information fields, apprise employers and supply position management and position management. Human resource management perform involves the achievement, placement, evaluation, compensation and development of the workers of a company. Initially, businesses used computer based information systems to:

- Pursue talent management.
- Maintain personnel records.
- Produce pay checks and payroll reports.

Online recruiting has become one amongst the first strategies utilized by time unit departments to garner potential candidates for out there positions inside a corporation. Talent Management systems usually encompass:

- Recruiting through company-facing listings.
- Analyzing personnel usage within an organization.
- Identifying potential applicants.
- Recruiting through online recruiting sites or publications that market to both recruiters and applicants.

The significant price incurred in maintaining associate organized accomplishment effort, cross-posting at intervals and across general or industry-specific job boards and maintaining a competitive exposure of availabilities has given rise to the event of a frenzied person following System, or 'ATS', module.

The coaching module provides a system for organizations to administer and track worker coaching and development efforts. The system, unremarkably known as a

Learning Management System if a standalone product, permits 60 minutes to trace education, qualifications and skills of the workers, yet as outlining what coaching courses, books, CDs, internet primarily based learning or materials area unit out there to develop that skills. Courses will then be offered in date specific sessions, with delegates and coaching resources being mapped and managed among constant system. subtle LMS permit managers to approve coaching, budgets and calendars aboard performance management and appraisal metrics.

The worker Self-provider module lets in team of workers to impeach unit of time linked facts and carry out a few unit of time transactions over the gadget. group of workers should question their institution action document from the machine at the same time as no longer asking the records from unit of time employees. The module additionally lets supervisors approve O.T. requests from their subordinates through the system whilst no longer overloading the assignment on unit of time branch.

Many businesses have long past beyond the traditional capabilities and evolved human useful resource management records structures, which support recruitment, selection, hiring, process placement, performance appraisals, worker advantage evaluation, health, protection and protection, at the same time as others integrate an outsourced Applicant monitoring system that contains a subset of the above. A HRMS may also assist to convert a place of business.

1.2 Problem Statement

The capacity of Human Resource office is for the most part managerial and standard to all associations. Typically Organizations have assessment and finance process. Compelling and effective administration of Human Capital advanced to an unpreventable and muddled process. The fundamental duty of HR comprises of following existing worker information which by and large incorporates individual narratives of representative, abilities, compensation and achievements. To lessen the manual workload of these managerial exercises, associations started to electronically mechanize a considerable lot of these procedures by presenting specific Human Resource Management System.

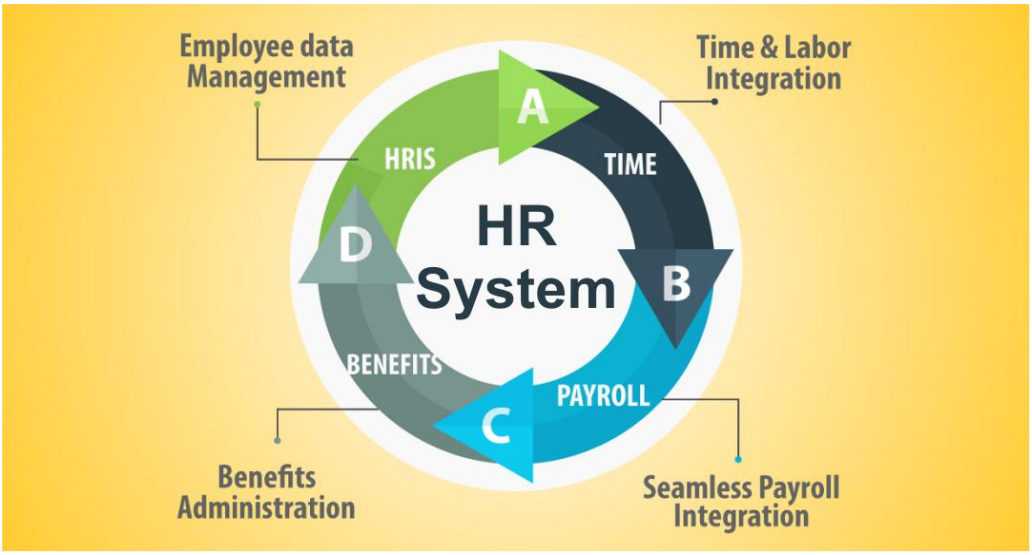

Figure 1.1 Representation of HRMS

1.3 Objective

The main aim of the project was to develop a Human Resource Module for the Automation of HR Software in which all the information regarding the employees in the company will be present. This has to be developed with good Interaction/ communication facilities between the employees and HR Administrator in such a manner that a level of hierarchy was maintained between the various employees.

The web pages approximately an employee are created dynamically based on the person identity and password and hyperlinks are provided to web pages containing record approximately Employee General Profile, Salary Details, Payroll and other static links to various other pages. An Information Hierarchy is maintained i.e. the records regarding a particular employee is accessed by means of the equal or any individual above him inside the records hierarchy. There was also a provision for updating the details.

Each employee has the facility of Updating his General Details, Contact Details and can monitor his/her attendance. User Controls are provided for Navigating through the web Pages.

HR admin page is created with HR admin tasks. HR administrator is provided with facility of adding employee in to the company and creating various components like salary, designation, shifts, allowances, reductions etc. He also has the facility of viewing/updating all employees details. The whole project is web based and designed using Javascript and MongoDB for database.

1.4 Methodology

The application is architecture in such a way so that it should be easy to use and need minimal training to completely understand the software. The combination of technologies that are used makes the application powerful and fast. As the software should be capable enough of processing multiple queries, managing large amount of data and to perform efficient computations. The use of NodeJS and MongoDB in a effective way can reduce the query time and makes it possible to quickly fetch the data.

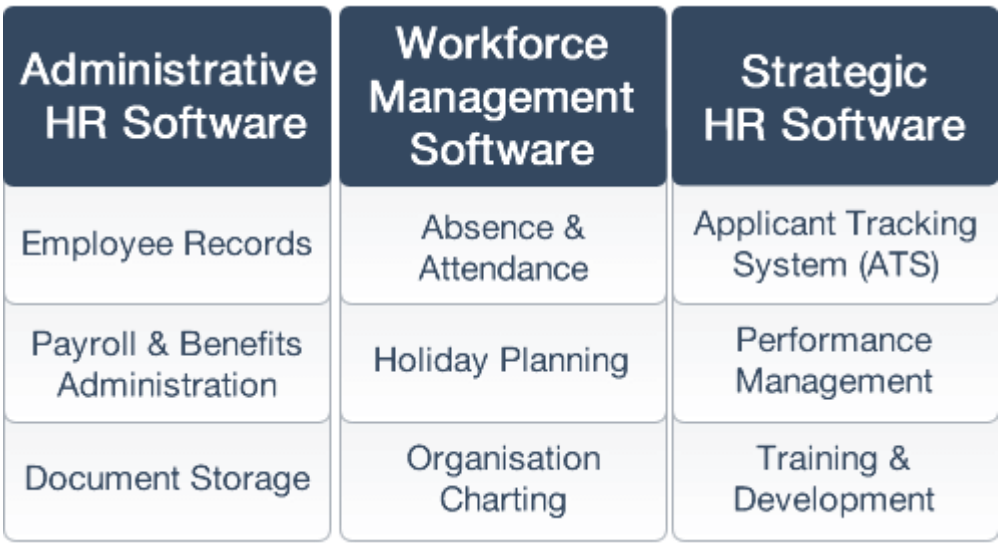

Figure 1.2 Types of HR Software and typical Functionality Examples

Chapter-2

LITERATURE SURVEY

1. Emerging issues in theory and research on electronic human resource management.

In the past many decades, technology has had a dramatic impact on human resource management (HR) processes and practices. as an example, technology, particularly the globe Wide internet, has helped modify several unit of time processes together with human resource designing, performance management, enlisting, work flow, selection and compensation. These new type of systems have enabled units of time executives to produce much higher service to all the stakeholders (e.g. employees, applicants, managers), and it reduced the burden within the field. Despite of widespread use for these systems, it has been a remarkable dearth of all the theory and analysis on the related subject. This result the aim of this special issue is to (a) advance theory and survey on human resource management systems (HRMS) and electronic human resource management systems, (b) supply all new directions for the analysis on the subject, and (c) also enhance the success of those tyoe of systems in the organizations. As a result, these text reviews evaluate the HRMS and e-HRM, also provides a quick summary for the prevailing literature, and it introduces the articles within the special matter. (James H. Dulebohn, 2012)

2. Analyzing the Aftermath of a Compensation Reduction

Wage rigidity creates real and monetary frictions, although the real-world drivers of rigidities stay mostly unstudied. we tend to use staggered commission reductions at a sales firm to estimate effects on employee turnover and energy. In response to AN eighteen %decline in commissions, we discover turnover will increase for the foremost productive employees. we tend to observe restricted effort responses and notice no proof of various effects supported workers' expectations of fairness or future promotion. The findings recommend that adjustment constraints stem primarily

from adverse choice considerations on the intensive (turnover) margin as against uneven effort responses on the intensive margin. (Jason Sandvik, 2018)

3. Research on human resource information systems based on requirement engineering

In this paper, Requirement Engineering (RE) is a crucial a part for the computer code software development life-cycle (SDLC) since the idea for evolving winning computer code depends on at first comprehending its necessities. This acts because the contract between all the computers codes users and also to the developers. Demand engineering also involves the variety for processes for gathering necessities in accordance with the requirements and demands of users and to the stakeholders of the product. More work also administered to regulate and refine the existing measures that satisfy all the foremost essential phases in life-cycle, particularly for the design and also program style phases. Also in this paper all the Human-Resource data Systems the board of directors for education will also be seen as the example of a posh system. Therefore, the paper considers this as a case study that a computer code has now been developed taking all the necessity engineering to the approach into consideration. (Omar Tariq, 2014)

4. Wireless biometric attendance management and payroll system

Automated system is one in every of the common things among productive corporations. the explanations behind this area unit to cut back work, human errors and to extend potency. The planning targeted on making an automatic system for attending observance by the employment of bioscience. this may be of nice facilitate to the businesses remains doing manual attending and payroll calculations for its workers. The device was created employing a fingerprint scanner to urge the attending of the workers. A program is additionally developed to record and calculate the payroll. The microcontroller is the top of the system, Zigbee module transmits and receives the info and digital display that displays the output of the system. The software system that was accustomed produce the program is that the Microsoft .NET technology and Microsoft SQL Server because the information. (Jannyl Darren A. Villarama, 2017)

5. Design and implementation of smart attendance management system using multiple step authentication

In the ancient attending system of Asian country, the lecturers either decision the name or identity range of the scholars to that the scholars respond or pass the attending sheet to the scholars to sign. With the rise of the quantity of scholars within the last 20 years, the difficulties attending management system has redoubled remarkably. Again, just in case of passing attending sheet to the scholars, some students sign multiple times and proxy attending is taken. These two systems are terribly time overwhelming. To beat these inconveniencies, this paper represents a sensible attending system image. During this paper frequency identification, biometric fingerprint device and word based mostly technologies are integrated to develop a value effective, reliable attending management system. A desktop application is developed in C# surroundings to observe the attending system. (Dhiman Kumar Sarker, 2017)

6. A new era for HR Management

You've got to feel sorry the beleaguered Human Resources manager. ne'er a giant favorite with alternative managers, the unit of time big shot includes a name for being a company partner in crime, the slasher of salaries and therefore the harbinger of all things doom-related. however square measure these unimaginative pictures out of date? in step with Jackie Orme, chief govt of the chartered Institute of Personnel and Development (CIPD), there is a revolution happening, albeit a "quiet one". Industry's key gripes regarding unit of time are often summarized in terms of prices, that represent a giant issue, followed by the impact within the past thirteen years of the avalanche of rules and legislation cascading from government departments. Finally, HR people, with their palpable enthusiasm for 'soft' skills, seem to own very little interest in business or strategic problems. (Wilf Altman,2010)

7. Employee performance assessment in virtual organization using domain-driven data mining and sentiment analysis

The amendment of society from an industrial based mostly society to a service based and even to an data based society has generated a specific cluster of workers; individuals, World Health Organization add their means through data, solve issues in their own means type their own place. This class of staff has modified the productivity and gain graph of the organization that stands for a task, project or permanent organization, not essentially centralized and dependent known as Virtual Organization. Virtual Organizations square measure geographically dissipated so assessing the performance of the staff operating in it's a very important issue. Assessment may be a dynamic method, therefore the aim of the studies is to gauge the performance of staff in virtual organization and predict the standard, productivity output and potentiality of the staff by numerous performance measures which can change the superior to require correct choices and perceive patterns for employee's motivation, satisfaction, growth and decline of each the staff and also the organization itself. A divinity analysis method is allotted during this analysis which incorporates employees' practices, culture, work of art and text within the organization. The study concerned to propose a worker performance assessment system with phenomenological Domain Driven data processing (D3M) approach to boot exploitation 360 Degree data processing for the extraction of unidentified patterns in worker performance once assessed across numerous parameters. The system is additionally finite by the Sentiment analyzer to visualize perception of the superiors towards their employees' task and work structure at the side of the combination of Fuzzy cluster call web that works as multi-factorial analysis unit. (Tejshree D. Chungade, 2017)

8. Research on the Application of Information Technology in Human Resource Management

The traditional human resource management mode is inefficient, the management method isn't standardized, the management prices high. With the event of recent info technology, all walks of life management model and values are hit. Particularly for contemporary enterprises, the appliance of recent info

technology plays a very important role in dynamical the standard human resources management model, promoting the management potency of enterprises, rising the fight of enterprises. Through the introduction of data technology and human resources thought, this paper expounds the connection between the 2, through the utilization of data technology in human resources management model, we are able to regulate the human resources management method, improve work potency, cut back management prices, and ultimately promote the amendment of human resource management. however within the method, enterprises ought to listen to the appliance technology to ascertain somebody's resources provide and demand information, to strengthen the analysis of human resources management and workers performance analysis, and ultimately promote the development of enterprise management potency. (Xie Zheng, 2017)

Chapter-3

SYSTEM DEVELOPMENT

3.1 Purpose

HRMS alludes back to the procedures and methodologies on the crossing point among human asset administration (HRM) and data innovation. It combines HRM as a train and specifically its essential HR exercises and procedures with the data innovation field, while the programming of information preparing frameworks advanced into institutionalized schedules and bundles of big business asset arranging (ERP) programming. On the whole, these ERP frameworks have their source on programming framework that incorporates data from totally unique applications into one all inclusive information. The linkage of its money related and human asset modules through one database is the most imperative qualification to the separately and exclusive created ancestors, which makes this product application both inflexible and adaptable.

3.2 Scope

The project is confined to be run on any web server either on internet or intranet. The application makes sure that the proper user interface is provided to the communicating parties to work easily on the application.

3.3 Requirements

Software Requirements:

- The designing of the project requires an HTML editor (Visual Studio Code).
- Front-end web application framework AngularJS for developing front-end of the application.
- A web server to host the application. NodeJs Server was used which is hosting application on localhost.
- ongoDB Database for storing data.
- The client machine using the application requires a web browser to access and run the application.

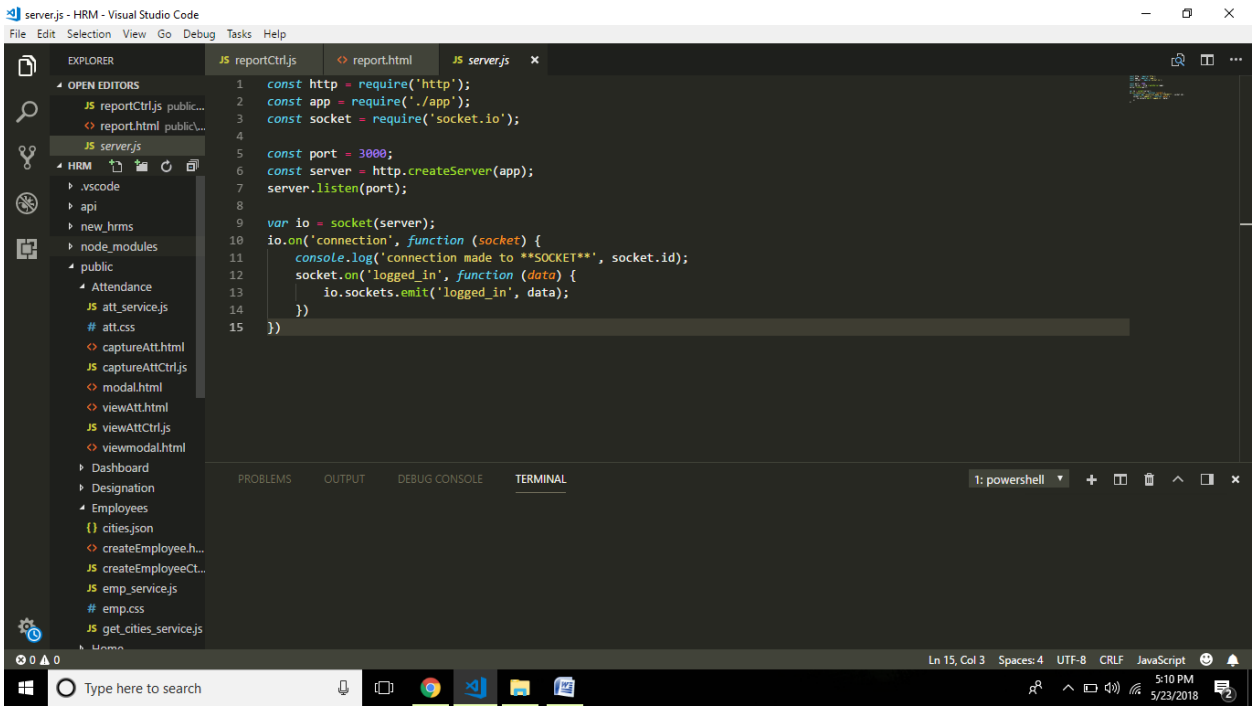

Figure 3.1 Visual Studio Code

Hardware Requirement:

- A server machine to host the Web Application.

3.4 Description of the Technology

AngularJS

AngularJS a JavaScript-based front-end net application framework principally maintained by Google and by a community of people and companies to handle several of the challenges encountered in developing single-page applications. The JavaScript elements complement Apache Cordova, a framework used for developing cross-platform mobile apps. It aims to modifyeach the event and therefore the testing of such applications by providing a framework for client-side model–view–controller (MVC) and model–view–view model (MVVM) architectures, at the side of elements ordinarily utilized in made web applications. In 2014, the first AngularJS team began functioning on the Angular application platform.

Figure 3.2 AngularJS

NodeJS

NodeJS is an open-source, cross-stage JavaScript run-time condition that executes JavaScript code server-side. Truly, JavaScript was utilized essentially for customer side scripting, inside which contents written in JavaScript ar implanted amid awebpage's hypertext increase dialect and run customer side by a JavaScript motor inside the client's applications program. Node.js gives designers a chance to utilize JavaScript for server-side scripting—running contents server-side to give dynamic web content substance before the page is dispatched to the client's applications program. Thus, Node.js speaks to a "JavaScript all over the place" worldview, bringing together web application advancement around one programming dialect, rather than very surprising dialects for server viewpoint and customer angle contents.

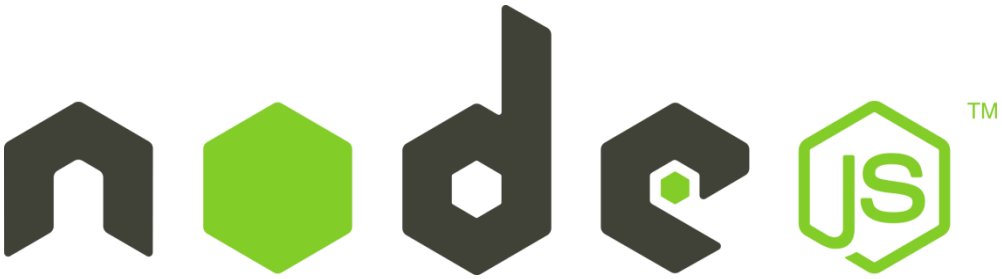

Figure 3.3 NodeJS

Though .js is that the standard extension for JavaScript code, the name "Node.js" doesn't sit down with a specific get into this context and is just the name of the merchandise. Node.js has Associate in Nursing event-driven design capable of asynchronous I/O. These style selections aim to optimize outturn and quantifiability in net applications with several input/ output operations, further as for period of time net applications.

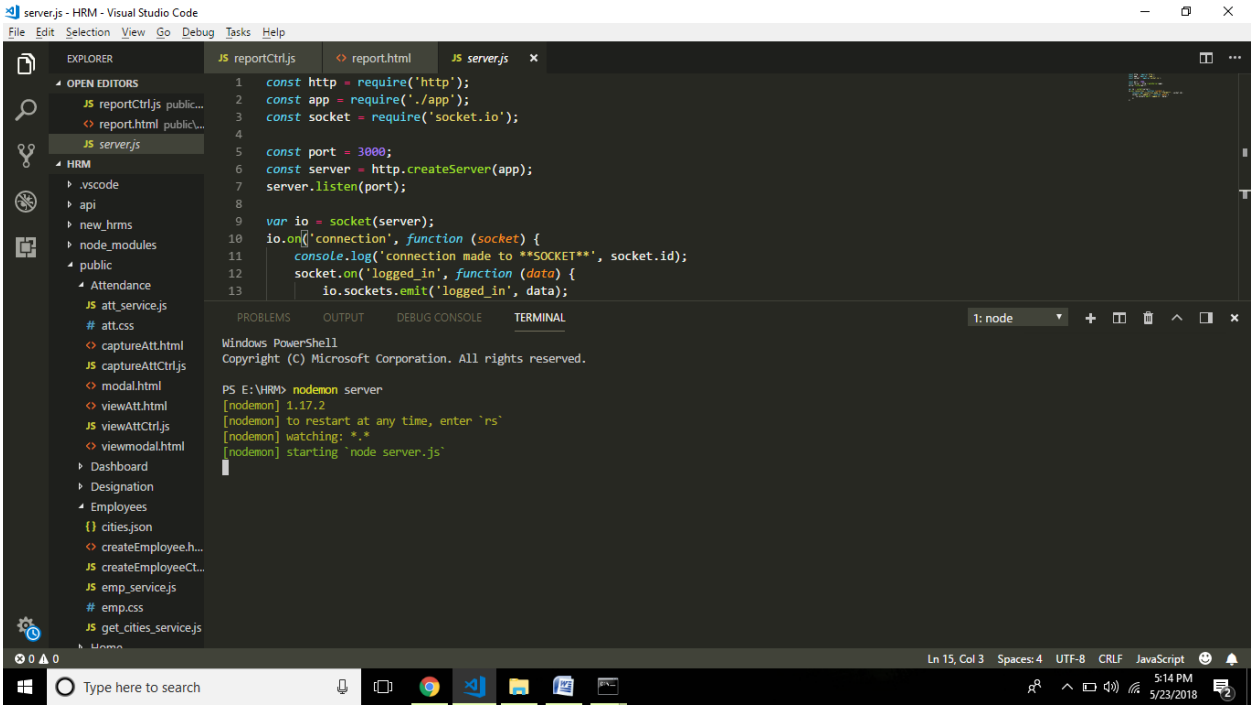

Figure 3.4 Project Running on Node Server

MongoDB

Is a free and open-source move-platform file-oriented database program. Classified as a nosql database program, mongodb uses JSON like documents with schemas.

MongoDB supports field, vary queries, regular expression searches. Queries will come back specific fields of documents and additionally embrace user-defined JavaScript functions. Queries can even be designed to come back a random sample of results of a given size.

Figure 3.5 MongoDB

MongoDB is a very powerful database that comes along with following features:

- **Indexing**

  Fields during a MongoDB document will be indexed with primary and secondary indices
- **Replication**
- MongoDB furnishes high accessibility with propagation sets.[9] a multiplication set comprises of 2 or extra duplicates of the data. each multiplication set part could act inside the part of essential or optional proliferation whenever. All composes and peruses territory unit done on the main proliferation as a matter of course. Optional copies keep up a copy of the data of the main abuse inborn replication. once an essential multiplication falls flat, the generation set mechanically leads relate race strategy to work out that optional should turn into the first. Auxiliary's will alternatively serve peruse activities, anyway that information is simply in the long run predictable as a matter of course
- .**Load balancing**

  MongoDB scales on a level plane exploitation sharding. The client picks a piece key, that decides anyway the information in an extremely variety are disseminated. The information is part into ranges (in view of the piece key) and circulated over various shards. (A section might be an ace with one or a great deal of slaves.). or the consequences will be severe, the section key is hashed to guide to a part – empowering a decent data conveyance.

MongoDB will keep running over different servers, compromise the heap or copying data to remain the framework up and running just if there should be an occurrence of equipment disappointment.

- **File storage**

  MongoDB will be used as a filing system with load equalization and knowledge replication options over multiple machines for storing files. This perform, known as grid filing system is enclosed with MongoDB drivers. MongoDB exposes functions for file manipulation and content to developers. GridFS is employed in plugins for Nginxand lighttpd. GridFS divides a file into elements, or chunks, and stores every of these chunks as a separate document.

- **Aggregation**

  Map reduce can be used for batch processing of information and aggregation operations. The aggregation framework allows users to achieve the sort of consequences for which the sq. group by means of clause is used. Aggregation operators may be strung collectively to form a pipeline – analogous to Unix pipes. The aggregation framework consists of the $lookup operator that may be a part of documents from a couple of documents, as well as statistical operators along with trendy deviation.

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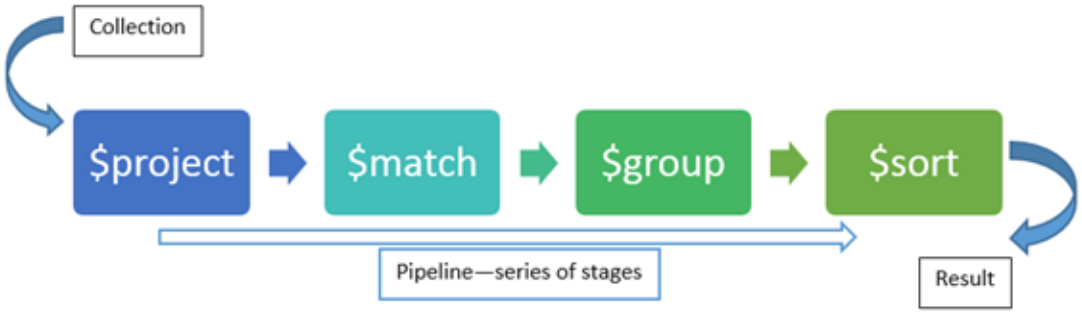

Figure 3.6 MongoDB Aggregation Pipeline

- **Server-side JavaScript execution**

  JavaScript can be used in queries, aggregation functions (such as Map Reduce), and sent directly to the database to be executed.

- **Capped collections**

MongoDB helps fixed-size collections referred to as capped collections. This sort of collection continues insertion order and, as soon as the specified length has been reached, behaves like a round queue.

- **Transactions**

  The cutting-edge stable launch does no longer support transactions, but transaction are scheduled to be to be had in a brand new main launch.

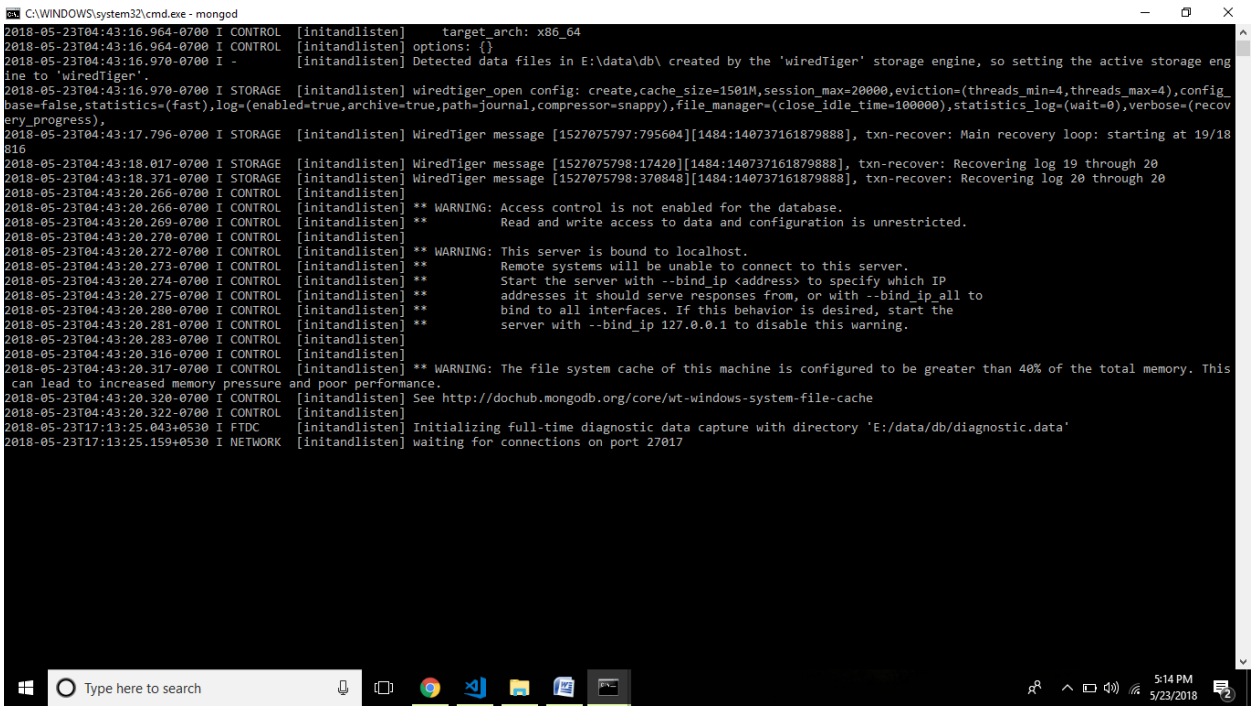

Figure 3.7 MongoDB Running

3.5 Functions

The functions of HRMS can be broadly stated as:-

Organizational set up and configuration

This incorporates of defining organizational structure and hierarchy, updating organization structure and hierarchy, defining and keeping worker type and hierarchy and set up get entry to and approval ranges.

Attendance management

Tracking daily attendance of employee including the late arrivals an overtime comes under this function.

Reporting

The module is incomplete without a proper reporting section, there are reports for both user (i.e employee) and for admin (i.e HR) in this case.

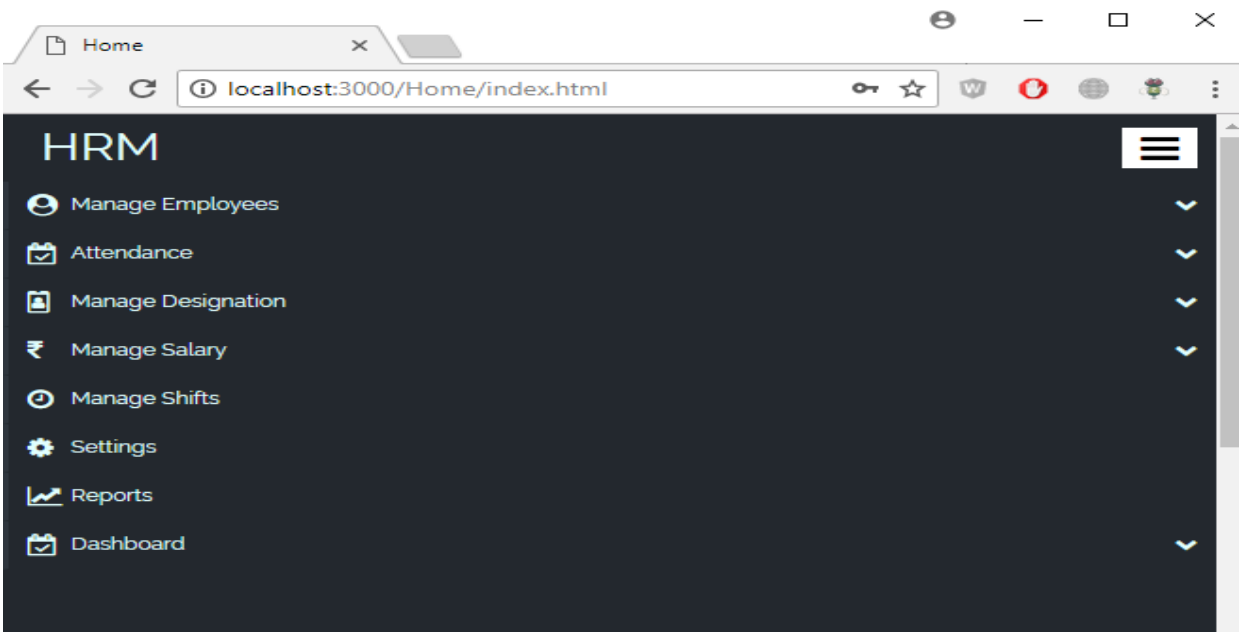

Figure 3.8 Functions of HRMS

3.6 Design Principles

The proposed methodology uses some techniques to manage components for designation, salary, shift, allowances and reductions as component style is more efficient. The data captured will be stored in data base and authentication to all routes is achieved using passport.js strategies such as JWT and local strategy.

The proposed modules comprises incorporated with Human Resource Management System application is:

1. Login and Registration Module
2. Add, Delete and Edit Salary Components
3. Add, Delete and Edit Designation Components
4. Delete, View and Update Employee Information Module
5. Create and Edit Shifts Components
6. Reporting Module
7. Attendance Capturing Module
8. Payroll module incorporated with allowances and reductions

The block schematic diagram of the proposed model is given in below:

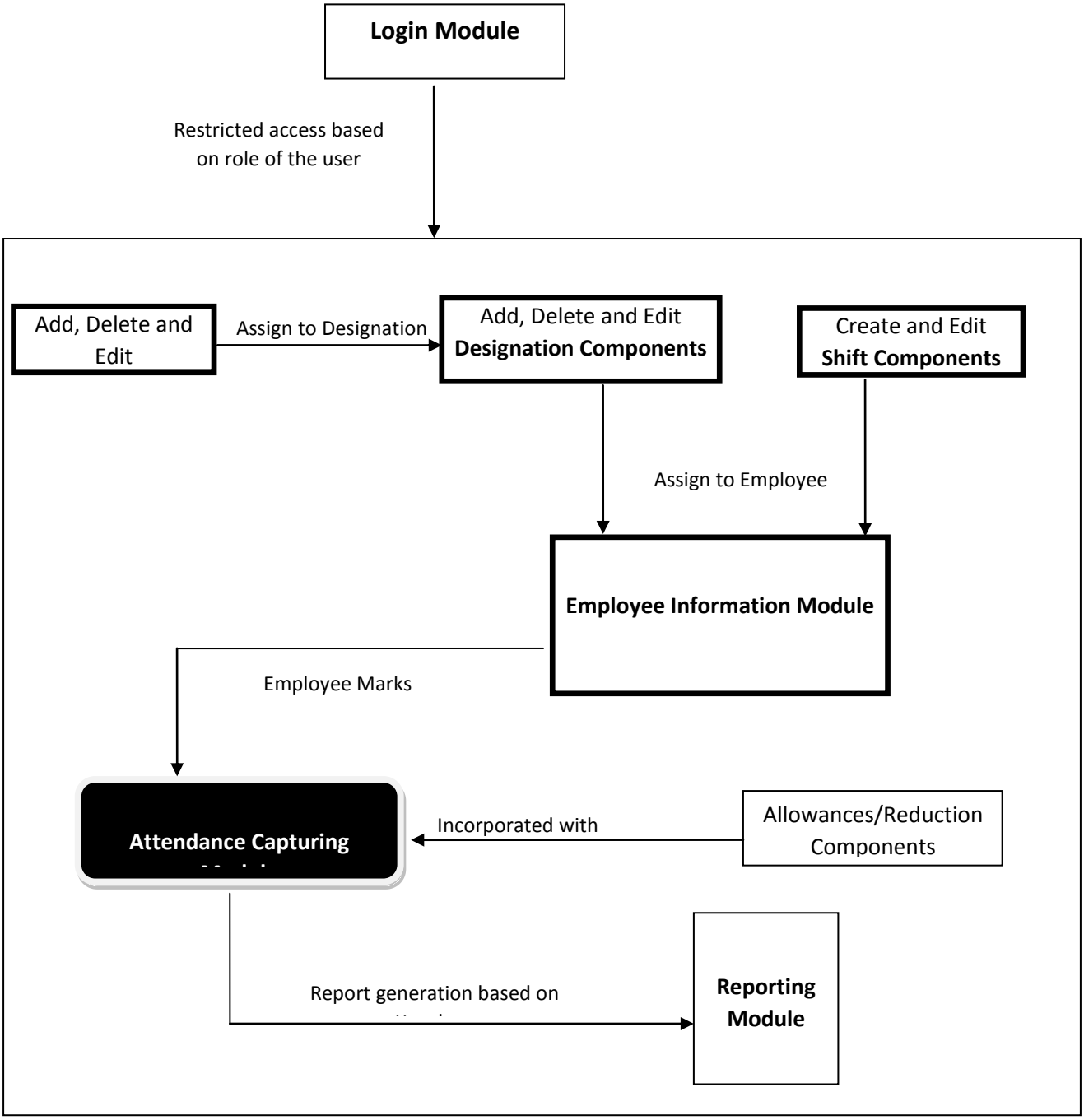

Figure 3.9 Block schematic diagram of the HRMS

An elaborate description of the above design methodology goes as follows:

1. Login and Registration Module

This module enables employee to log in and access the details. It also enables admin to register any employee and update employee's general information along with contact, qualification and other details. The admin can create and modify several components like salary, designation, allowances, reductions, shifts. The employee registration can be done only buy the admin type of user having this privilege.

2. Add, Delete and Edit Salary Components

The admin can create various salary components like Basic, HRA, PF etc. that can be dynamically assigned to designations will designation is being created. There can be only one salary component of for each type whose value can be set to anything whether it be in percentage or fixed. It can also be an allowance or reduction type of component.

3. Add, Delete and Edit Designation Components

The admin can create components based on designations that can be dynamically assigned to employee will employee is being registered by the admin. There can be only one salary component of for particular designation name that carry information regarding that particular designation like salary for that designation.

4. Delete, View and Update Employee Information Module

The admin can register employee that has information about its designation and salary. Every employee has a unique username and also role is decided for every employee, based on that role the employee gets permission to access a particular route.

5. Create and Edit Shifts Components

The admin can create shift components to define the shift starting and ending hours, based on which when an employee mark his/her attendance, overtime and late arrivals is computed.

6. Reporting Module

Reporting module calculates the net salary of an employee by adding the ALLOWANCES and subtracting the DEDUCTIONS on the base salary. Also the shift management bonus and deduction (on late reporting to the office) is also calculated and reported here.

7. Attendance Capturing Module

This module captures the attendance and makes your salary adjustments as per absence/presence for the month. Also the reports are generated in sync with this document in the mongoDB database. This document contains the achieve of the whole database of the employees attendance.

8. Payroll module incorporated with allowances and reductions

Shift Management and payroll management with addition of allowances and deduction of deductions are finally calculated in this module. This helps the management to keep an all over view on employees. HR manager can keep a track of the employees on all records. Records are again managed in a mongoDB schema.

9. Security Features

The security features have been achieved by providing separate layers of abstraction to various designation of users. For an instance, when a user (a general employee) logs in to the portal, he is only allowed to view the relevant data and not to edit it. On the other hand, if a user of admin category (an HR manager) logs in to the portal, he's provided all the read and write access rights. The backbone of security features is the subtlety of Passport JS.

.

Passport

Figure 3.10 PassportJS

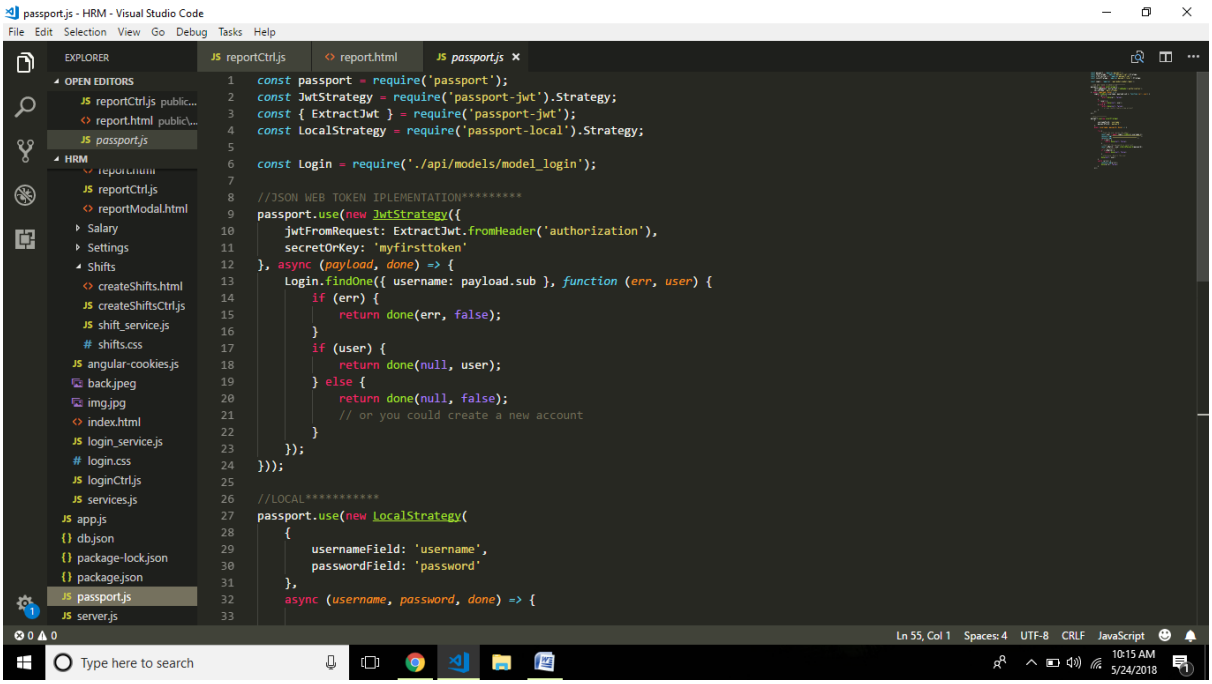

Figure 3.10 JWT Token strategy

Chapter-4

PERFORMANCE ANALYSIS

In this chapter will get an insight about the performance and input/output at various stages. We will cover every stage one by one to complete understands the functioning and how the particular stage is performing that particular function.

Login Module

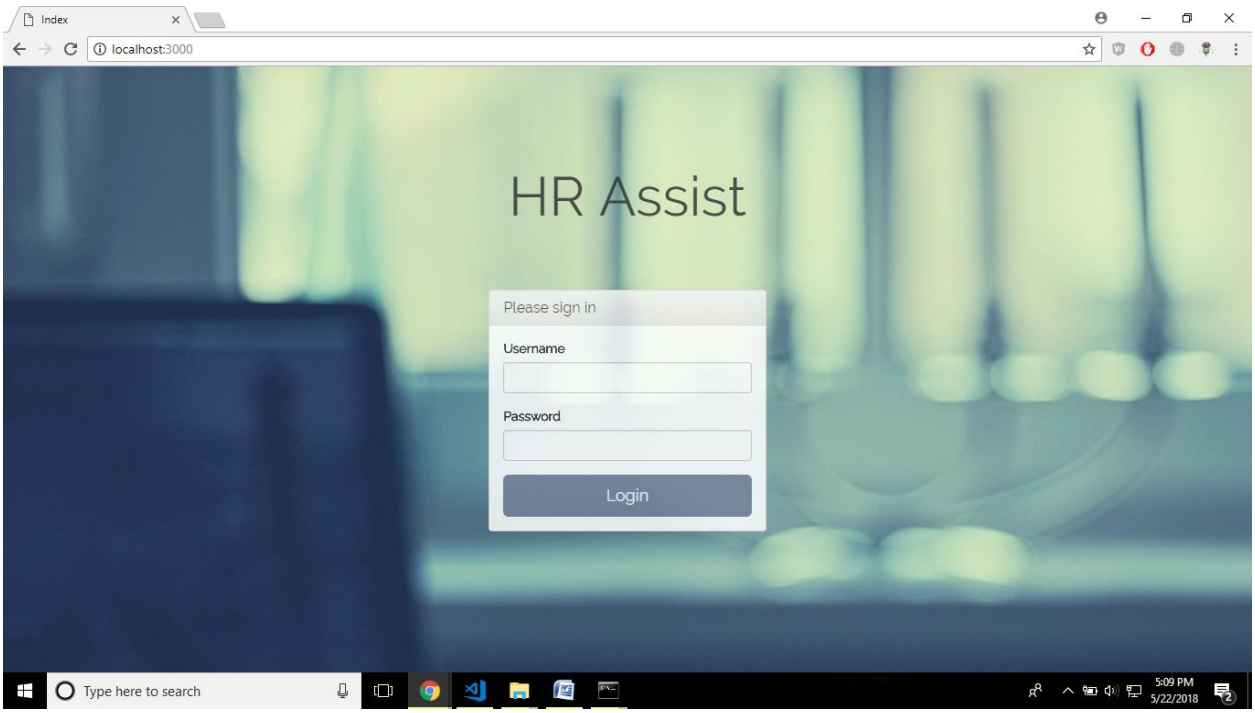

Figure 4.1 Login Screen

There are basically two types of roles:

- **Admin**

  In admin login the user has complete access of the application, user can create various components and can view report for all employees.

- **Employee**

  In employee login the user has only access to his salary report and can mark his/her attendance. All other routes expect these two are protected from the employee.

As we can see there are various modules as show in the navigation bar:

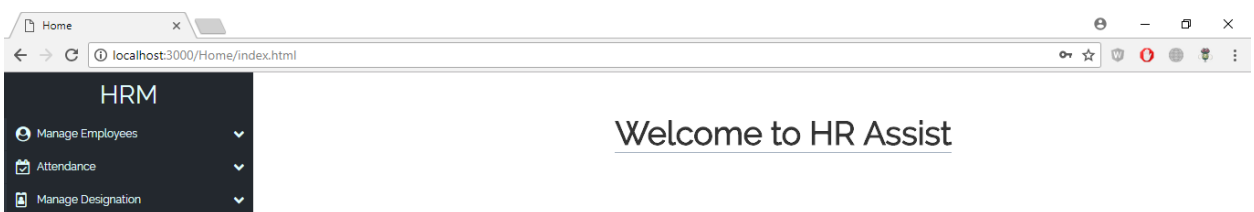

Figure 4.2 Modules in HRMS

Salary Component

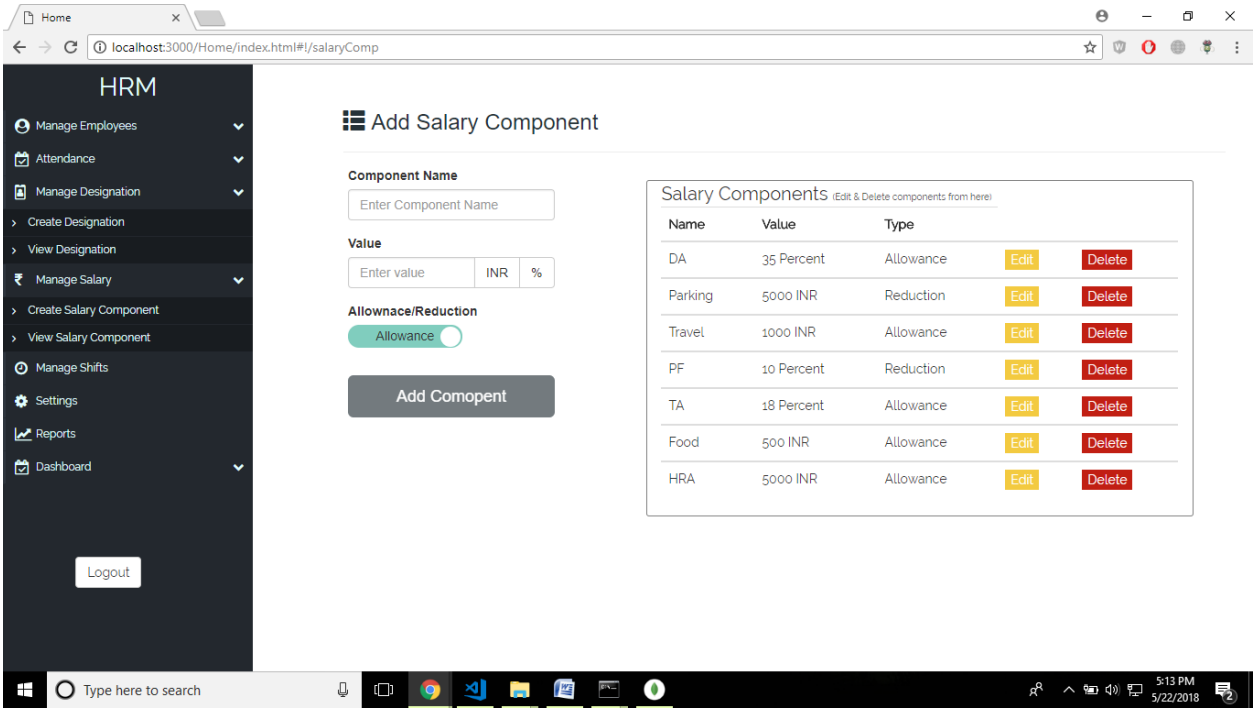

Figure 4.3 Salary Module

From the above route one can create, edit or delete the salary component. Salary component basically has three fields.

- **Component Name**: is name of the component
- **Value**: The value can be fixed in INR or can be in percentage
- **Value type:** is whether a the value is of type Reduction or Allowance

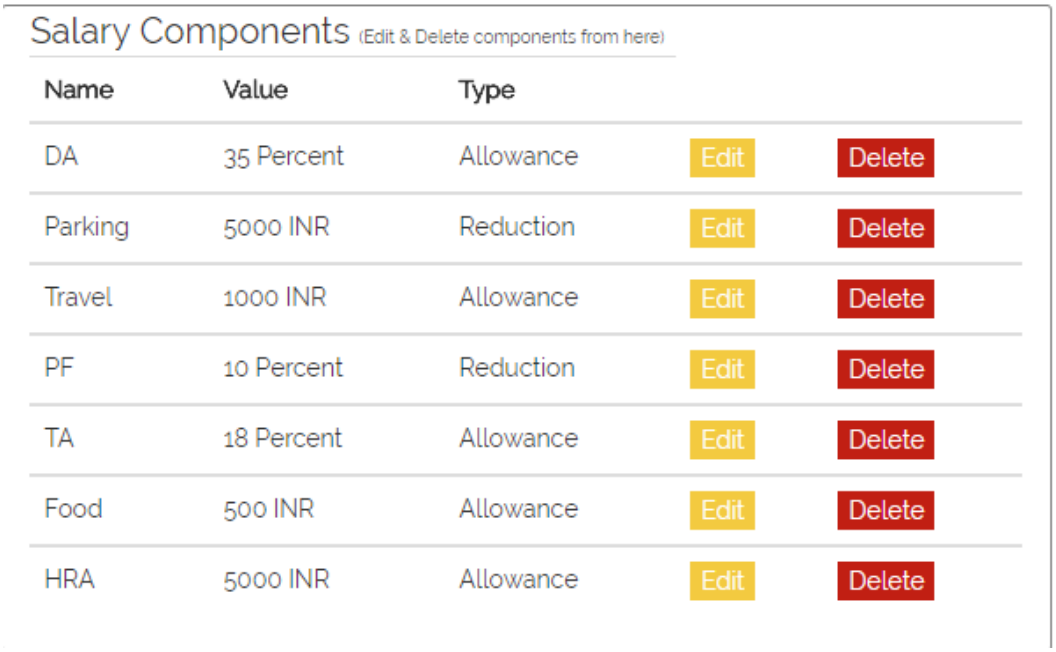

Figure 4.4 Salary Components

Component model is used to increase the reuse ability of the code as the same components can be used again and again and changes made in the data will automatically reflect to all the components. In this case the same component is used in designation module and employee module

The database for the salary components collection is designed and structured in following way as shown:

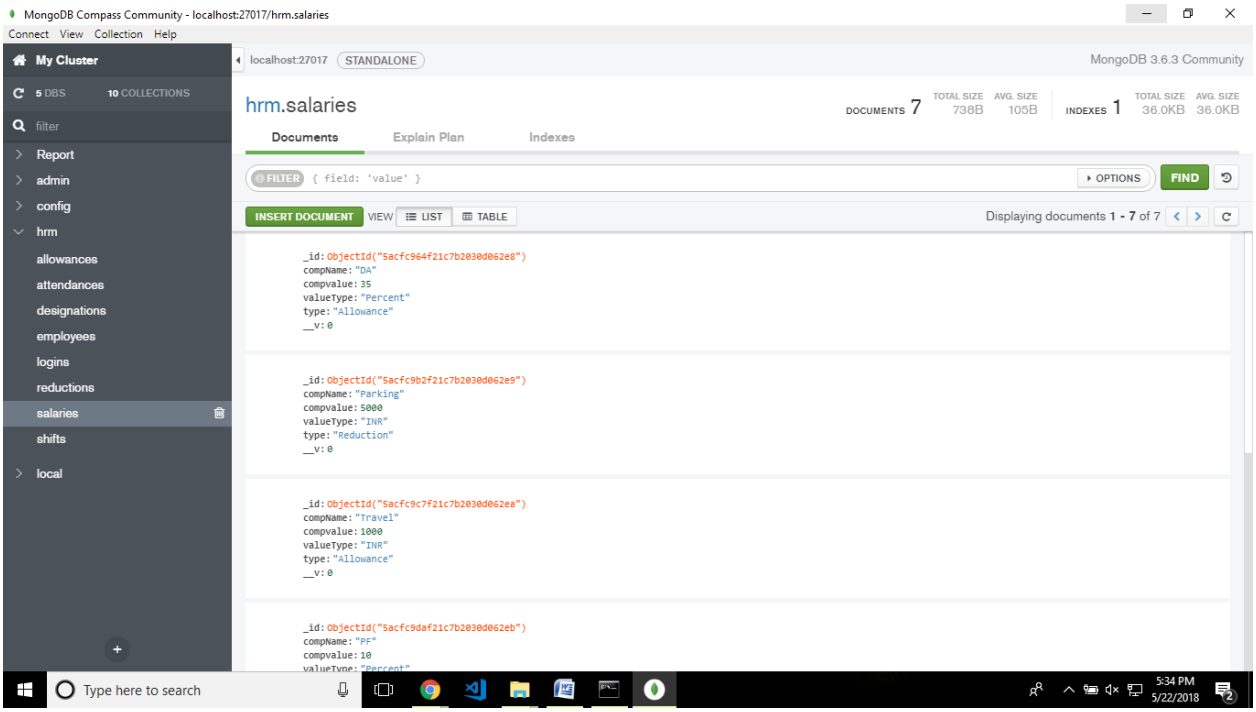

Figure 4.5 Schemas of Salary Components

Designation Component

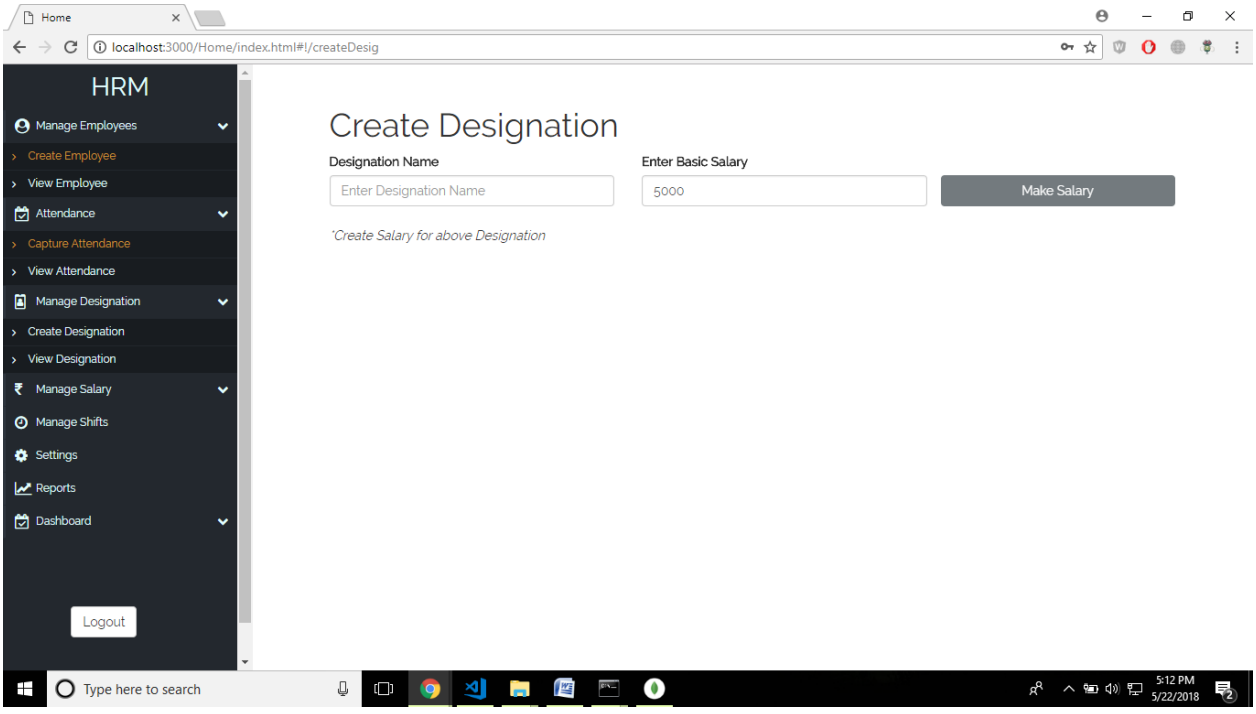

Figure 4.6 Designations Module

For creating a designation one has to enter Designation Name and basic Salary after that salary components can be assigned to that designation the total salary is calculated based on those components dynamically. The components of reduction type appear red in color while components of allowance type are green in color.

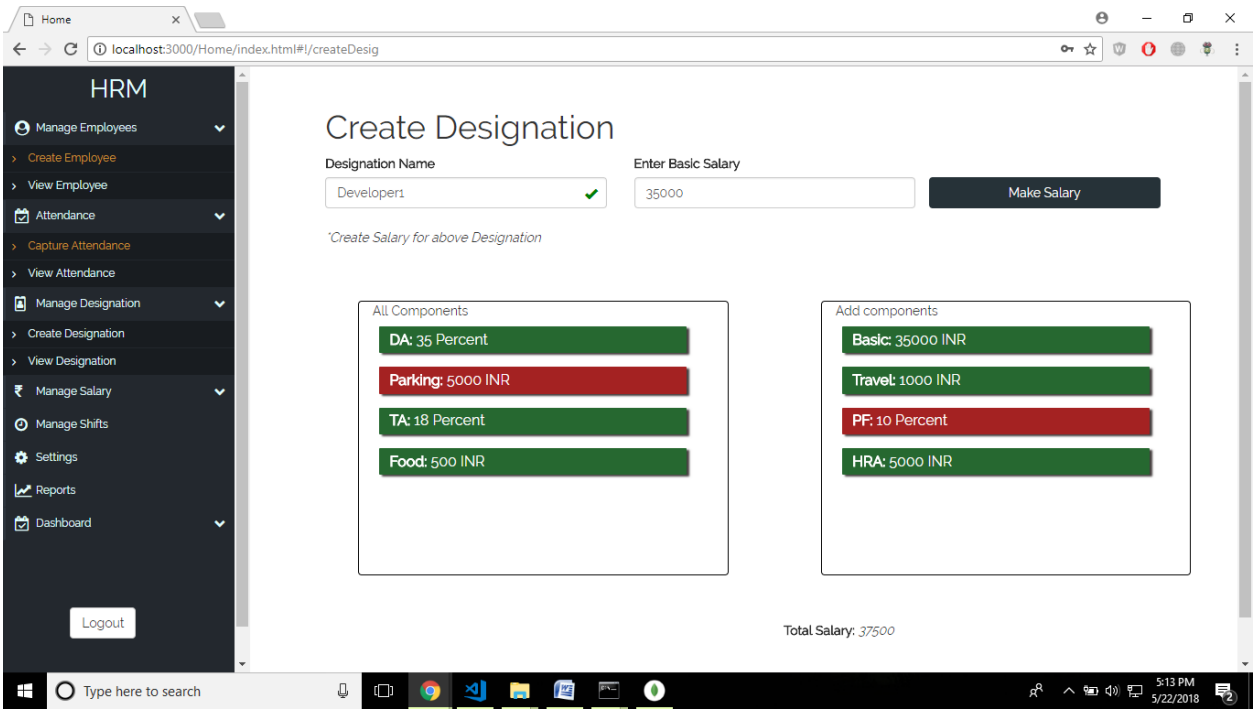

Figure 4.7 Assign components to designation

View Designations

View and Edit the created designations from View Designation. Designation component has following schema.

- **name**: is name of the designation component
- **total**: The total salary for that designation
- **salary:** Array of salary components assigned to that particular designation

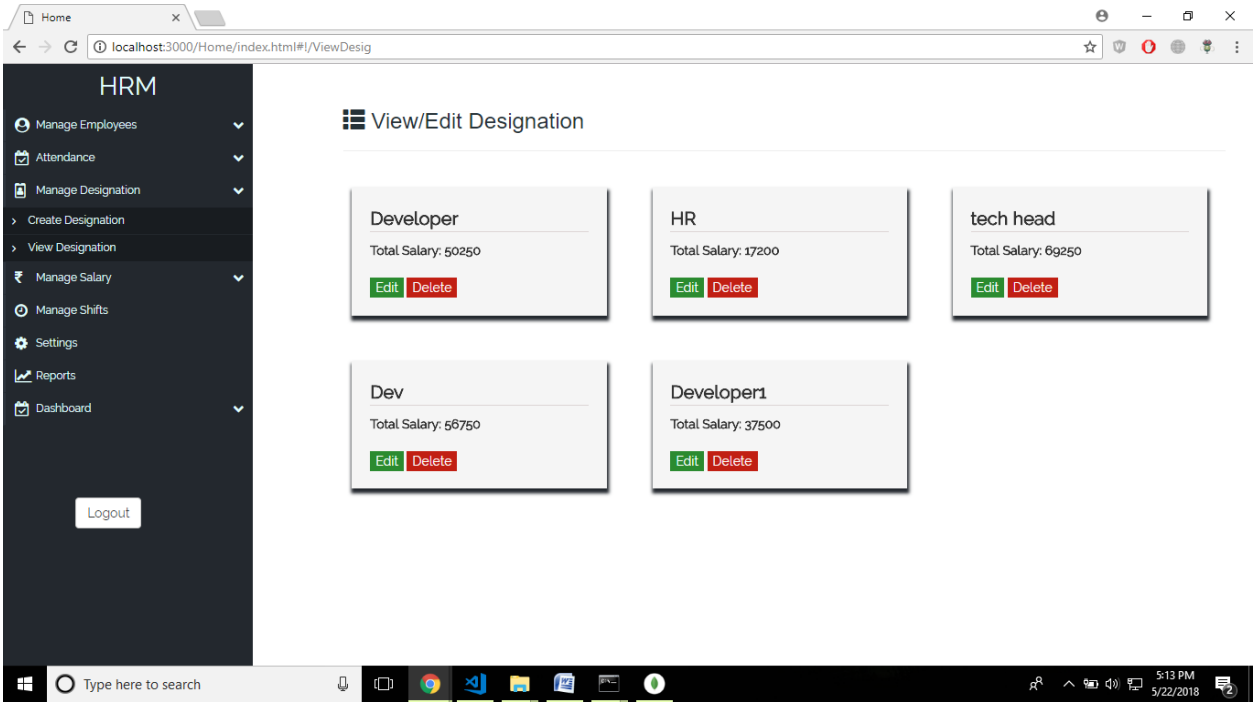

Figure 4.8 View Designations

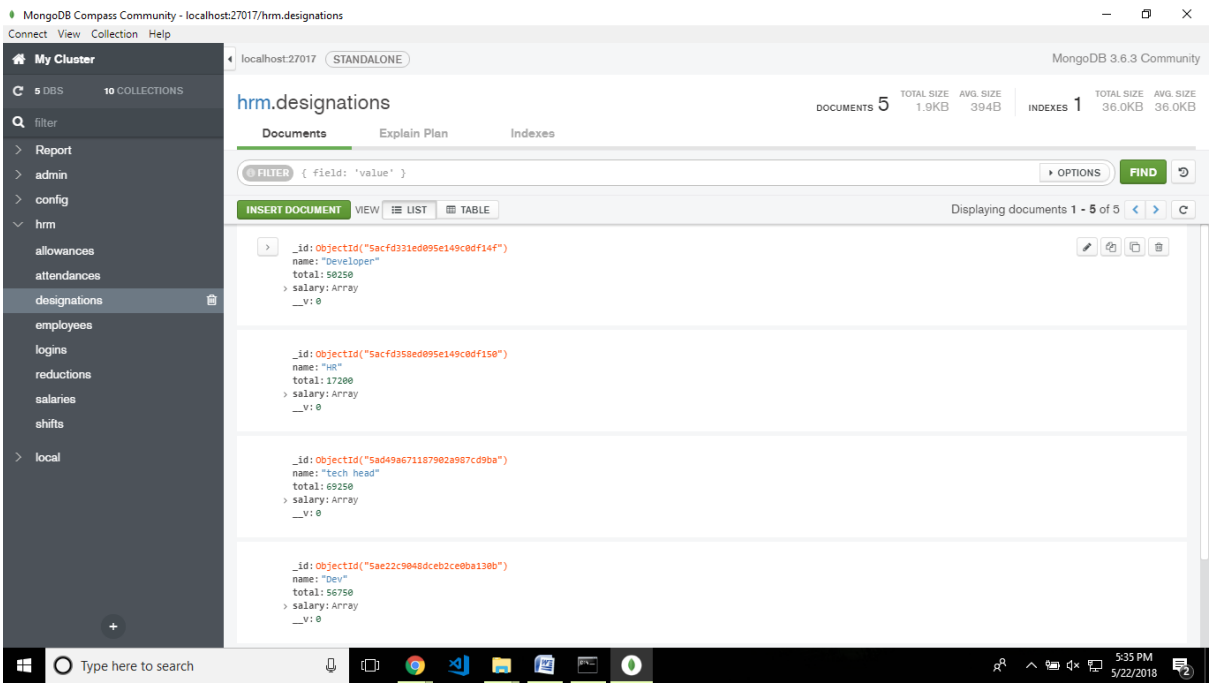

Figure 4.9 Schemas of Designation Components

Manage Shifts

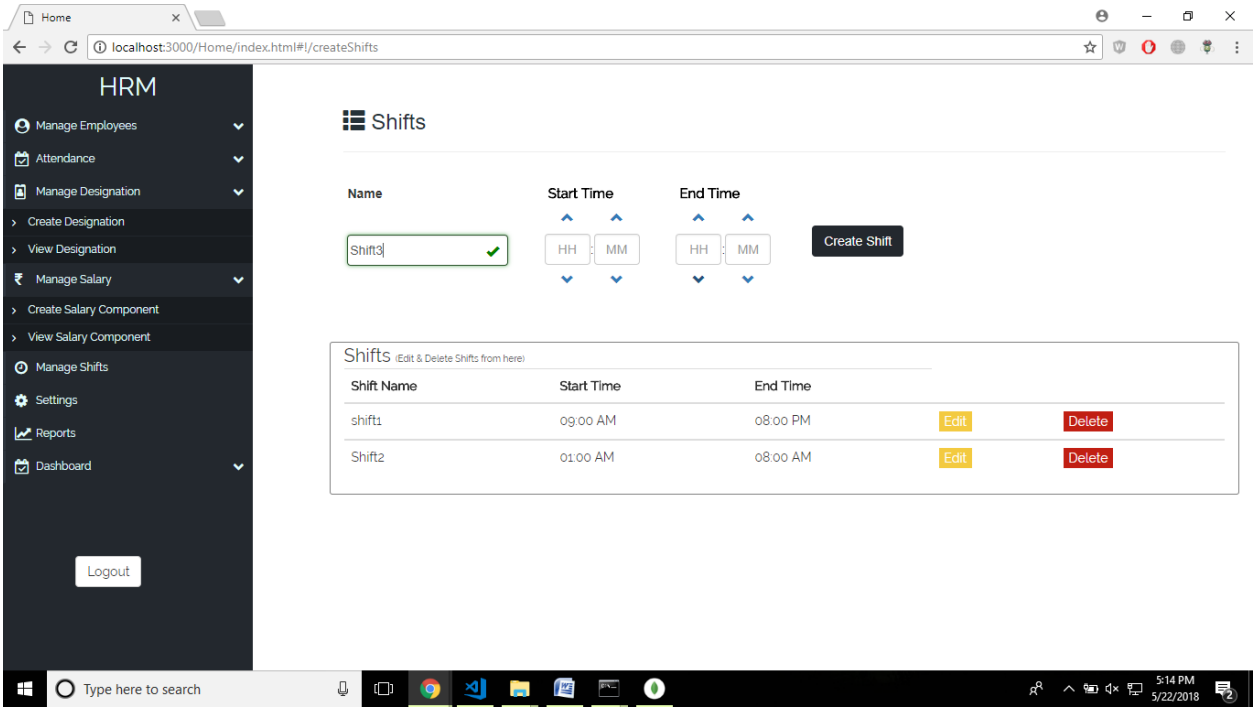

Figure 4.10 Shifts Module

From the above route one can easily Create, Edit and Delete Shifts. One shift cannot overlap existing shift timing. Shift component basically has three fields.

- **Shift Name**: is name of the shift.
- **Start Time**: Starting time of the shift in 24hr format.
- **End Time:** End time of the shift in 24hr format.

Opportune simple to use shift designing perform provides intensive flexibility to the shift planner. once it involves shift designing for producing company to Retail business, industry to a method outsourcing company, Opportune shift management module will handle wide variation from making multiple shift, break shift, weekly rotation policy and monthly / quarterly hands plans.

The database for the shift components collection is designed and structured in following way as shown:

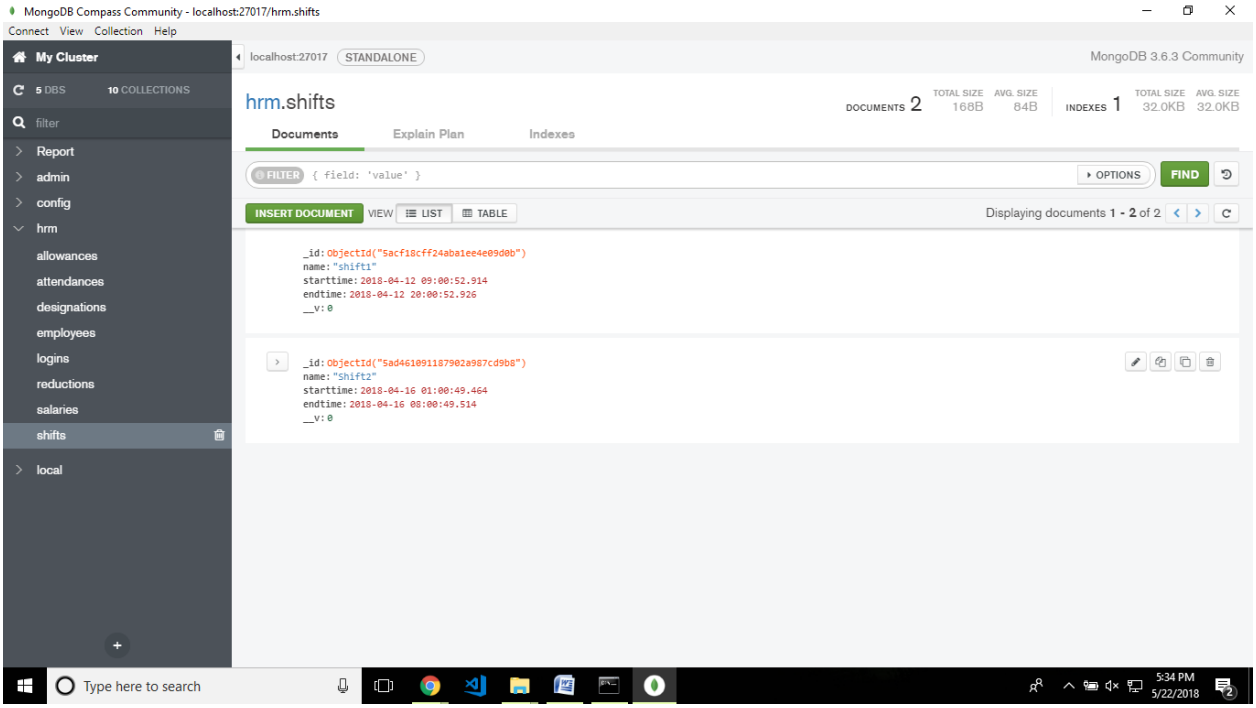

Figure 4.11 Schemas of Shift Components

Settings

Settings Module is one of the important module of this Human Resource Management System because when it comes to payroll management and attendance tracking it becomes very important to also track the timings of employees who are devoting extra hours at work and employees who are arriving late. Based on these the management can reward and make deduction for the respective ones.

From settings one can create, edit and delete the reduction and allowance slabs There are mainly two slabs in settings which the user can configure:

Reduction Slabs:

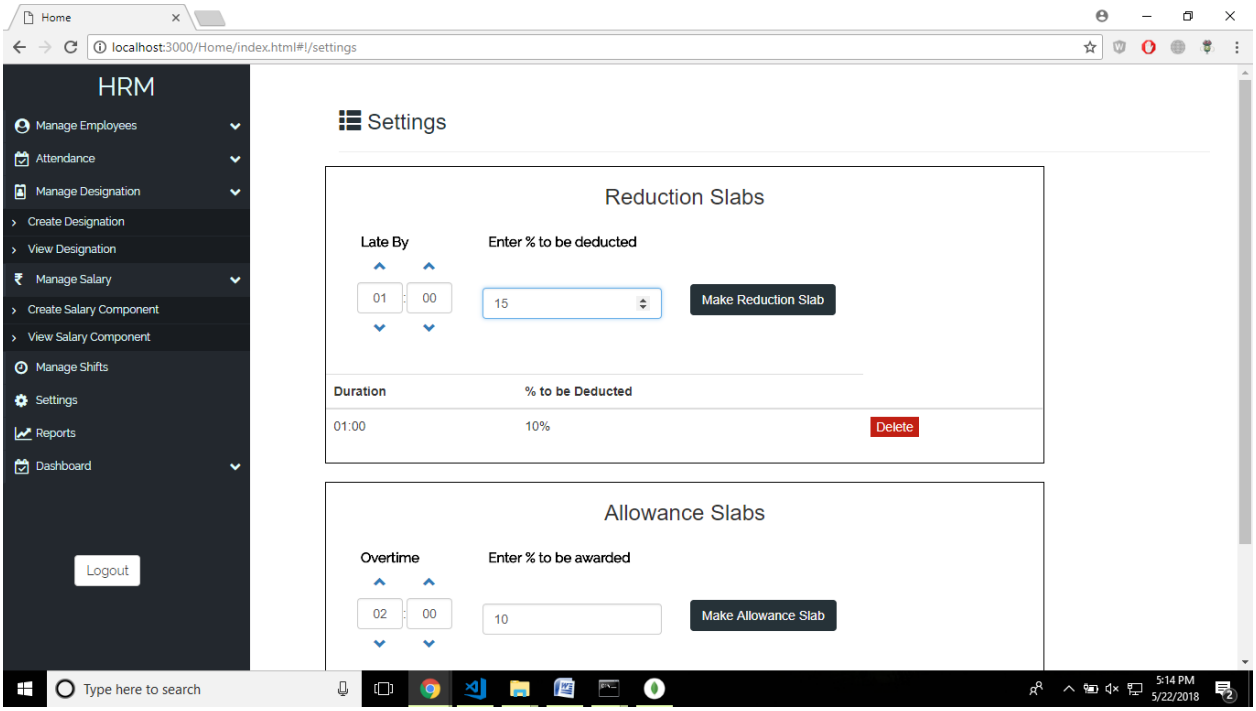

Figure 4.12 Managing Allowance Slab

Allowance Slabs:

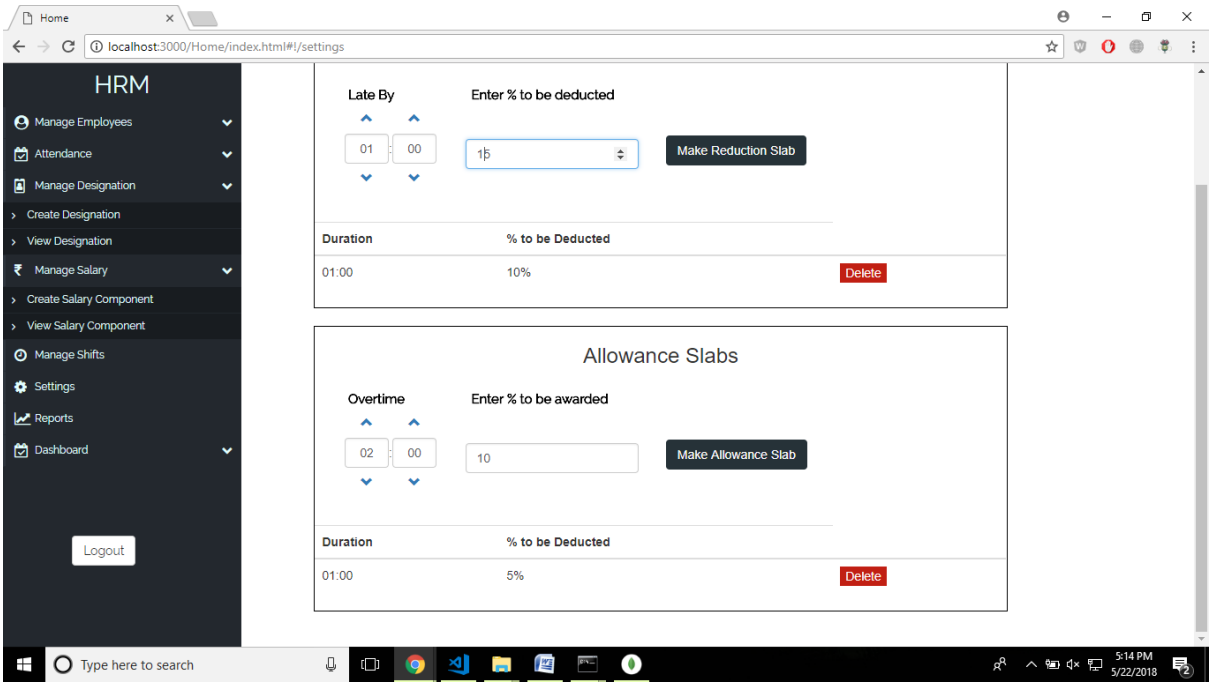

Figure 4.13 Managing Allowance Slab

From here the admin can set the deduction and allowance rates with consolidate within the attendance and gives the amount to be paid extra to the employee for overtime or the amount to be deducted for late arrivals.

The database for the reduction and allowance components collection is designed and structured in following way as shown:

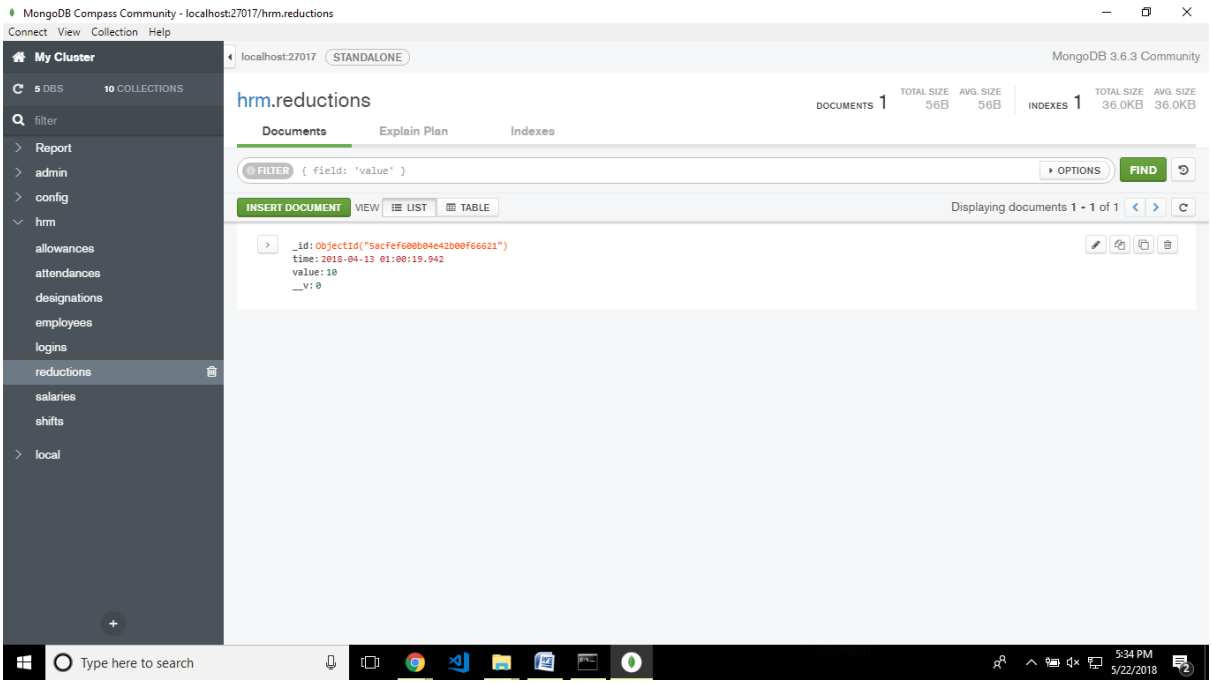

Figure 4.14 Schemas of Slab Components

Employee

The admin user can register new Employee from the above route. While registering a new employee a unique username should be assigned and role should also be defined for that new user. At the time of registration user set his/her password through that he/she can login into the Human Resource Management System. The database for the employee document is designed in such a way so that it inherits the designation components and shits with it.

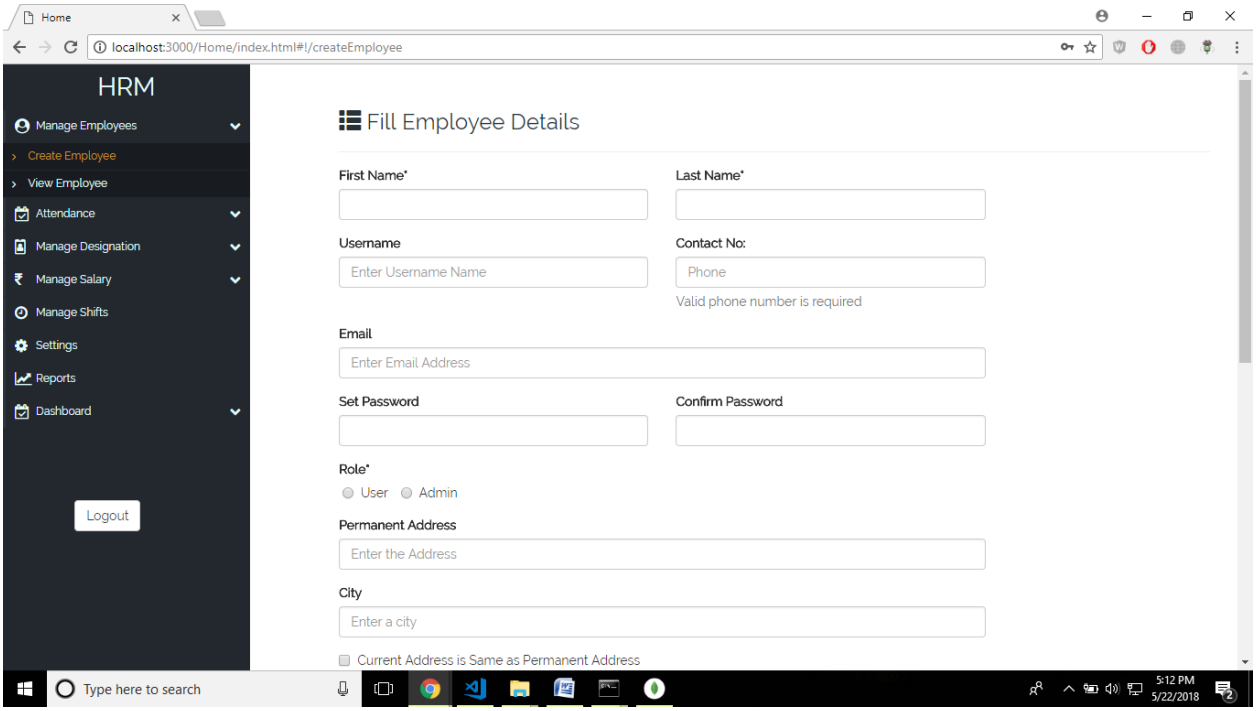

Figure 4.15 Employee Registration

To get more clarity about the designed and structure of employee collection refer to the following:

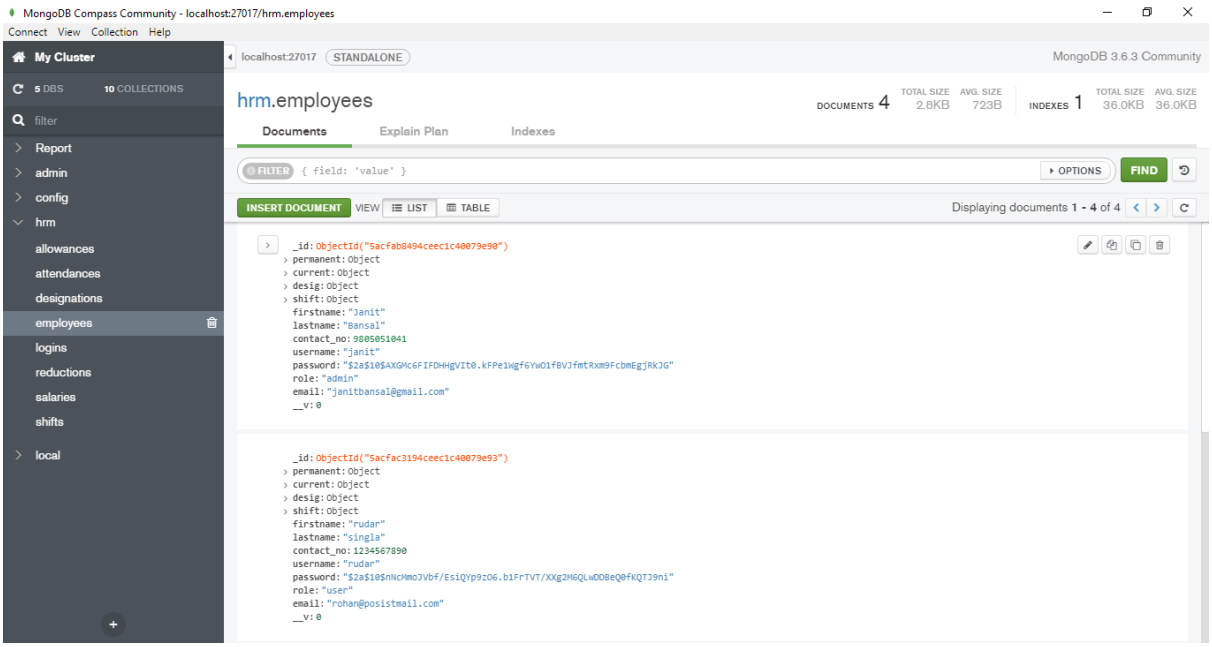

Figure 4.16 Schemas of Employee Components

Capture Attendance

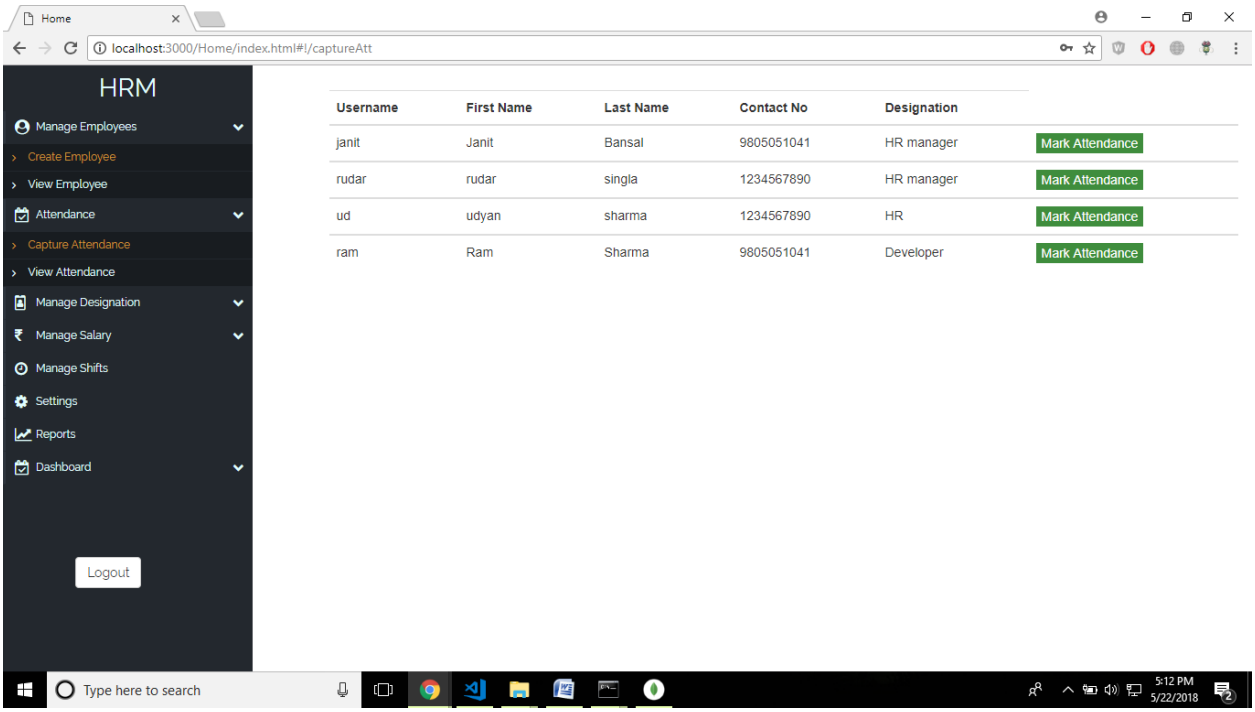

Figure 4.17 Capture Attendance

The admin can mark attendance for any employee while with employee login the user can mark only his/her own attendance. The database for the same is as follows:

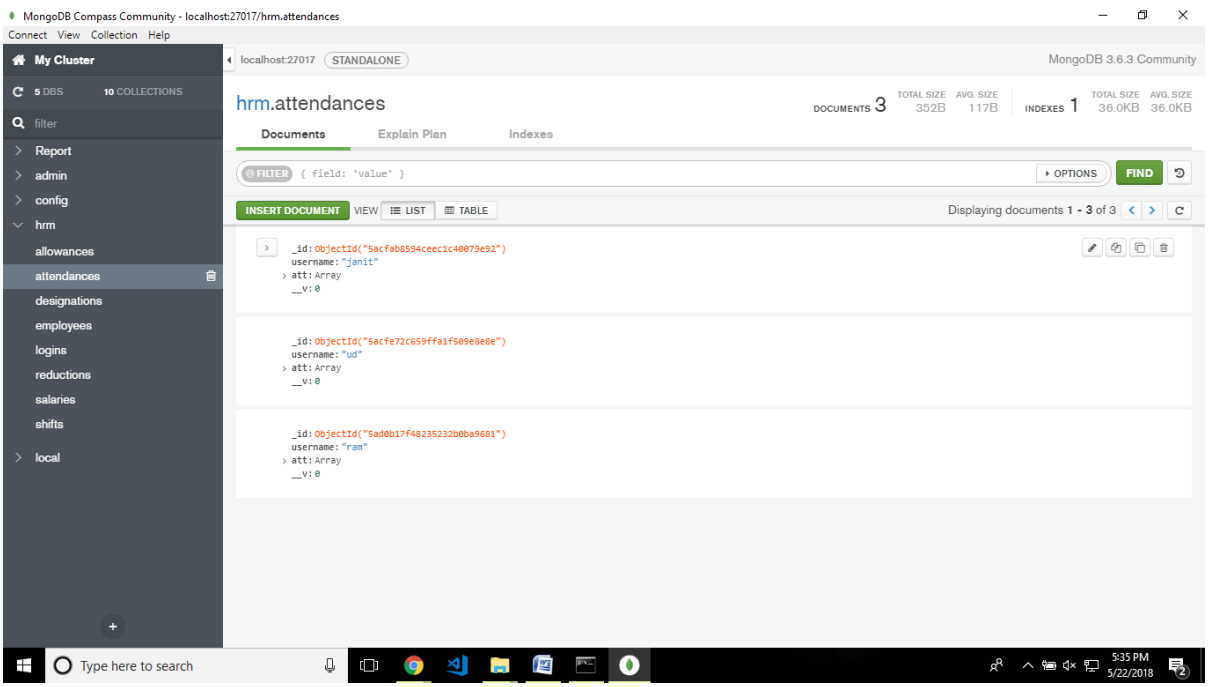

Figure 4.18 Schemas of Attendance log

Reporting Module

Reporting module calculates the net salary of an employee by adding the ALLOWANCES and subtracting the DEDUCTIONS on the base salary. Also the shift management bonus and deduction (on late reporting to the office) is also calculated and reported here.

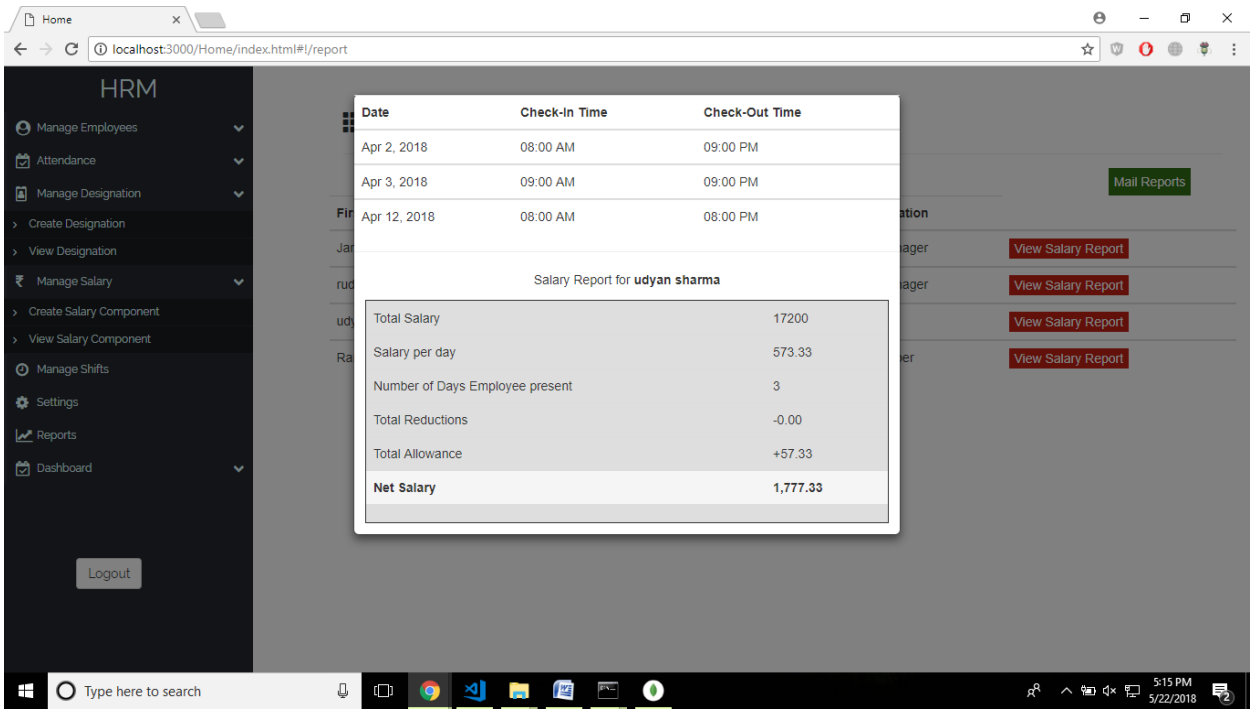

Figure 4.19 Reports

From this report one can get information about his/her calculated salary, no of working days and attendance log. This report is dynamically generated and one can send the respective reports to the all the registered employees to their mail box by single click. For this the KUE library of node is used which is used for load balancing. KUE uses Redis-server behind the scene for memory management.

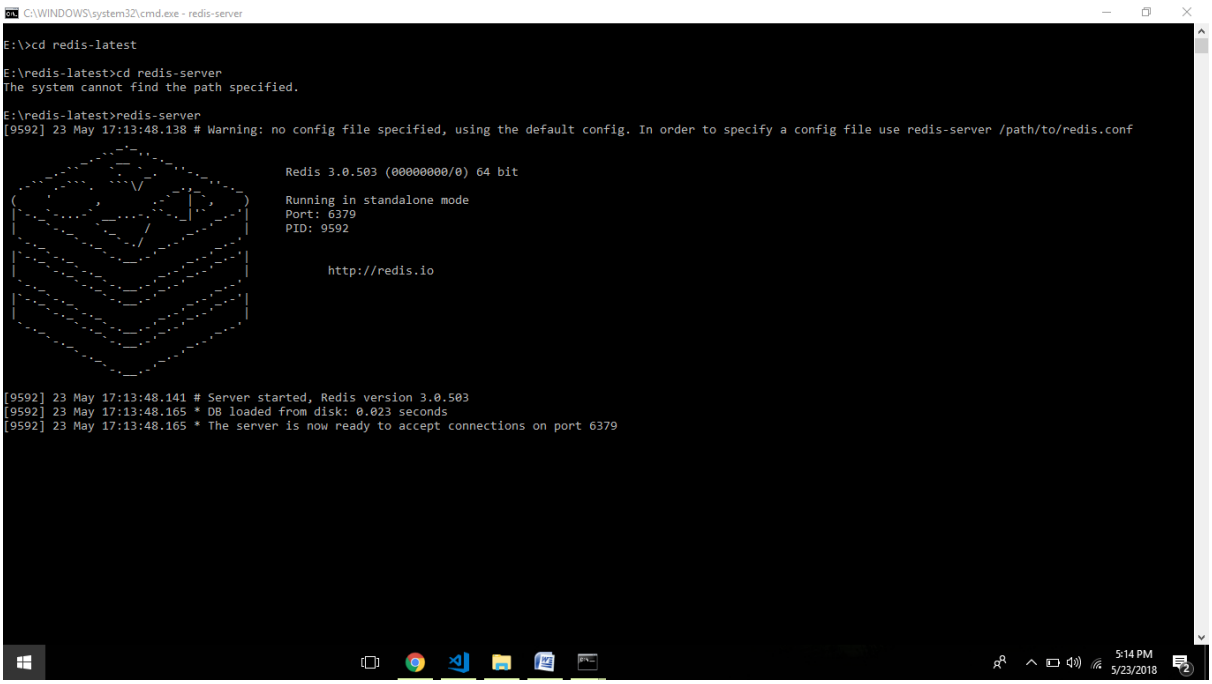

Figure 4.20 Running Redis Server

Chapter-5

CONCLUSION

5.1 Conclusion

Working on this project so far has been an experience filled with learning new aspects of technology. This project gave us a deep insight into the many unseen phases of the Human Resource Management System.

The thought of successful completion of the project and visualizing it making things easier for endless number of HR departments, which has been a constant source of motivation for both of us.

The thrill of learning new learning and exploring new spheres of technologies which were, before sometime, completely untouched by us helps us keep undeterred and to keep pushing further in terms of implementation and optimization.

I am contended with the accomplishments so far and feel proud to present this report before you as a representation of our efforts. I am working diligently and passionately towards achieving the goal I have set for this project and expect best results to appear.

I will conclude by thanking the reader (whomsoever it may concern) for sparing some of their invaluably precious time in reading, assessing or evaluating this project report. Any criticisms will be positively accepted and will be considered as touchstones for the betterment of our performance.

Working with Posist has been an utterly wonderful and productive experience and so was the experience developing this project. I feel so much grown and satisfied with the amount of hard work I've put in it and the amount of knowledge that I've gained.

5.2 Future Scope

The Human Resource Management System is an ambitious project. It can be various other aspects of Human Resource System like training, recruitment etc. I am very thankful for being provided this great opportunity to work on it. This project had gone through various research works. On the basis of the research work, I have successfully designed and implemented this HRMS project.

Software scope

- Extensibility
- Reusability
- Understandability
- Cost-effectiveness

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