A DISSERTATION REPORT ON

"Visitor's Management System"

Submitted to BVDU-Amplify-DITM, Pune in the partial fulfillment of the requirements for completing the course 'SUMMER INTERNSHIP DISSERTATION' in program

Submitted by

Abhik Rai BSIT/15/021 1715390024

Academic Year: 2017-2018

Under the guidance of Mrs. Chanda Hirway



BVDU-Amplify-DITM 2nd floor College of Architecture, Katraj, Pune.

Internship Completion Certificate (Issued by company)



Forbes Marshall Krohne Marshall Forbes Vyncke Forbes Marshall Arca Codel International Forbes Solar Forbes Marshall Steam Systems

HR: SS: RM: 17

Date: 4th August 2017

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. Abhik Rai** of Bharati Vidyapeeth University Pune, has successfully completed his internship in our organization under the guidance of Mr. Shrikant Joshi.

His Internship was on "Visitors Management System" from 5^{th} June 2017 to 28^{th} July 2017.

He has been sincere & hardworking in all his efforts. We wish him very best in all his future endeavors.

Thanking you,
For Forbes Marshall Pvt. Ltd.

, 5

Section Manager-HR/Learning & Development

Forbes Marshall Private Limited

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Energy Conservation | Environment | Process Efficiency

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DATA SHEET

DATA SHEET

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COMPANY PROFILE

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Company Phone No 02027145595

Company Website and Mail Id WWW. for bes mars hall. com

Work and Department allotted I.T depardment

Internal Guide Name M. Shrukant Joshu

Internal Guide Contact No 02039858429

Internal Guide Mail Id Snjoshi & forbesmarshall.com

PERIOD OF INTERNSHIP: From 5th June To 5th August

Signature of Student

ture of Internal Guide



BVDU-Amplify-DITM 2nd floor College of Architecture, Katraj,Pune.

Internship Completion Certificate

This is to certify that the Dissertation report entitled "Visitor's Management System"

Submitted by

Abhik Rai BSIT/15/021

1715380024

Academic Year: 2017-2018

This bonafide work is carried out by the student under the supervision of 'Mrs. Chanda Hirway' and it is submitted towards the partial fulfilment of the requirement of BVDU-Amplify-DITM, Pune.

Course Coordinator Head of Dept.

Mrs Chanda Hirway Prof. Prashant Hinduja

Seal/Stamp of College

Place: Pune

Date:

Principal

(BVDU-Amplify-DITM,

Pune

Acknowledgements

It is a great honour and pleasure to express my heartfelt gratitude to those who helped contribute to the preparation & completion of this project.

I take this opportunity and privilege to express my deep sense of gratitude to Col. R **Manoharan.** Director of **BVDU-Amplify-DITM** as he has been a source of inspiration to me.

I am deeply indebted to **Prof. Prashant Hinduja**, our Head of Department at **BVDU-Amplify**, Pune, without whose help completion of the project was highly impossible.

I would like to thank **Prof. Chanda Hirway**, my Class Coordinator at **BVDU-Amplify**, Pune, for Supporting and guiding me throughout my Internship Experience

I would like to thank **Prof. Bhaskar Anand**, my Class Coordinator at **BVDU-Amplify**, Pune, for Supporting and guiding me throughout my Internship Experience

I take this opportunity and privilege to articulate my deep sense of gratefulness to the I.T Department Manager and the staff of **FORBES MARSHALL** for their timely help and positive encouragement.

I wish to express a special thanks to all teaching and non-teaching staff members of **BVDU-Amplify-DITM**, Pune for their continuous support. I would like to acknowledge all my family members, relatives and friends for their help and encouragement.

Abstract

Forbes Marshall is a leader in process efficiency and energy conservation for Process Industry.

I worked with the I.T Department of Forbes Marshall as an I.T Intern in their Kasarwadi Branch.

Firstly, I was briefed about the project that I was going to work on. Then I studied the Oracle Apex application. I learned about the Oracle Apex application and its use and about the PL/SQL queries.

In this internship, I worked on a project to create an application in which the employee of the company can Add Appointment and Work Permit so that the security can view the appointments and work permits created and manage them. The application is handled by the admin in which the admin can add, update, delete and view all fields of the application.

I also learned what it is like to work in the Professional environment. Many Issues occurred while working for Forbes Marshall like Requirements being changed, time constraints and co-worker's issues but at the end the project/ my tasks were completed on time.

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Organizational study/Observation/team/processes & regulations

About the company

Forbes Marshall is a leader in process efficiency and energy conservation for Process Industry, with over seven decades of experience building steam engineering and control instrumentation solutions. Their unique complementary strength allows them to design and offer industry-specific solutions that focus on energy conservation and process efficiency for diverse sectors. Their knowledge, innovative solutions, reliable products and global presence make them a trusted partner.

Their Energy Conservation Audits, systems and customized solutions have been able to save energy and fuel costs for the customers. They design and manufacture a wide range of advanced technology instrumentation for continuous stack emission monitoring, road tunnel atmosphere sensing, and plant safety equipment that is capable of meeting today's tough environmental and legislative demands.

For 70 years, the company has collaborated process industry in providing solutions in process efficiency, energy conservation and environmental monitoring. Highly skilled and dedicated engineers spend considerable time visiting process plants to identify solutions.

With focused investments in manufacturing, R&D and services, they create value for their stakeholders. They consistently bring new and innovative products to the market. Several of their products have received awards for innovation. The Minimax Modular Boiler, the Effimax (a unique boiler efficiency monitoring system), the Wireless Trap Monitoring System for remote monitoring of multi-location traps Thermodynamic Trap, Two Orifice Float Trap, Distributed Control system, Thermocompressor, and the Electronic Compound Regulation Burner Operation and Control System, Stack Analysers, Vortex Flowmeter, the MAC (Master Air Controller) and Biosens, a revolutionary new analyser for instant BOD analysis, are examples of our cutting-edge research

Their core values of Family Spirit, Integrity, Innovation & Entrepreneurship and Delivering Value not only to the customers but also to the members and society make Forbes Marshall a place that puts people first: members, customers, suppliers, associates and the community.

The company is concerned with the community beyond the factory's gate. Since the inception of the company, sustainable social initiatives have been the key drivers of their philosophy to contribute and give back to the community in which they operate. Their diverse and sustained programs support health, education and life skills development in communities. They also help the community, particularly women, to engage in entrepreneurial ventures to support their families and thereby gain the skills and confidence in dealing with issues that impact their lives.

The company has been listed several times among the Top 5 "Best Workplaces in India", and first in the manufacturing industry by surveys conducted by the Great Place to Work Institute in association with Economic Times.

They Provide:

- Solutions
- Services
- Products

Their Partners:

- Bapu Trust for Research on Mind & Discourse
- DASRA
- Sneha
- Social Venture

Their Values:

- Forbes Marshall Family Support
- Integrity
- Innovation & Entrepreneurship
- Value Delivery to the Customers, Members & Society

Vision and Mission:

To conserve the energy, environment & .to manage the processes efficiently.

Team:

- Director
- I.T Dept. Manager
- I.T Dept. Employees
- I.T Dept. Intern

Social Initiatives:

- Shehernaz Medicare
- Education
- Health Outreach
- Women Empowerment

Process and Regulations:

The Company followed the normal top-down process where every changes and idea were supposed to be informed to the manager who would approve the idea or suggest some changes to make it better or truncate it.

Introduction

2.1 Overview:

This report is a detailed explanation of the steps taken to achieve the project titled-Visitor's Management System, which is managed by the security and the company employees.

2.2 Existing System:

The company had an existing application of Visitor's Management System, which was created in VB.Net and was purchased from a third party vendor, and was being used for many years. But they were not happy with the application as the application had many features, which were of no use to the company, and therefore they wanted to build a customized application of their own.

2.3 Work Proposal/Contribution in Detail:

The company wanted a customized application according to their needs. So I was told to study the existing system and then prepare the requirements and draw a rough U.I sketch of the application titled Visitor's Management System. In this System, the main aim was to manage the visitors of the company.

In this application, the company employee can add an appointment or work permit and these appointments and work permits can be seen by the security at the gate through which he can update the further details of the visitor and also add his photograph and print an id card for the visitor.

Scope of Work

3.1 Objective:

The main objective of this project is to create an application in which the employee of the company can *Add Appointment* and *Work Permit* so that the security can view the appointments and work permits created and manage them. The application is handled by the admin in which the admin can add, update, delete and view all fields of the application.

3.2 Technology & Associated Platforms:

- ➤ The User Interface Design is created using Oracle Apex 4.2.
- ➤ The code is written using SQL and PL/SQL queries.
- ➤ The database used is Oracle 10g

Feasibility Analysis

4.1 Objective:

The Objective of this feasibility study was to understand whether the following project was possible to complete within given certain circumstances. A good feasibility study will show the strength and deficits before the project is planned or budgeted for. The following are the various types of feasibility studies that were undertaken.

4.2 Types of Feasibility Done:

Technical Feasibility:

This is concerned with specifying the equipment and the software to satisfy the user requirements. The technical needs of the system vary considerably but might include:

- The facility to produce outputs at a given time.
- Response time under certain conditions.
- Ability to process a certain volume of transactions at a specified speed.
- Facility to communicate data to a distant location.

Technical feasibility centres on the existing computer system, hardware, software and to what extent it can support the system. In examining the technical feasibility, the configuration of the system is given more importance than the actual hardware. The configuration should provide the complete picture of the system requirements, for example how many workstations are required and how these units are interconnected so that they would operate smoothly. Specific hardware and software products can then be evaluated keeping in view the logical needs.

Economic Feasibility

Economic analysis is the most frequently used method for evaluating the effectiveness of a new system. More commonly known as cost/benefit analysis, the procedure is to determine the benefits and savings that are expected from a candidate system and compare them with costs. If benefits outweigh costs, then the decision is made to design and implement the system. We assume that the benefit of the project is greater than the cost. So if we can develop the project easily then it is used for the evaluation of the proposed. We calculate the cost/benefit analysis and we assume that the benefit is feasible so we start developing the project. It is an analysis of the cost to be incurred in the system and benefits the derivable from the system. An Economic Feasibility Study should demonstrate the net benefit of the proposed course of action in the context of direct and indirect benefits and costs to the organization and to the public as a whole. It should be required for both pilot and long-term activities, plans and projects.

Operational Feasibility

It determines how acceptable the software is within the organization. The evaluations must then determine the general attitude and skills. Such restriction of the job will be acceptable. To the users are enough to run the proposed budget, hence the system is supposed to the feasible regarding all except feasibility. In operational feasibility, we attempt to ensure that every user can access the system easily. We develop a menu that users can easily access and we provide shortcut keys. We show a proper error message when any mistakes are made in the program. We provide help and a guideline menu to help the user. Changes in the ways individuals are organized into groups may then be necessary and the groups may now compete for economic resources with the needs of stabilized ones by converting a number in a file in software.

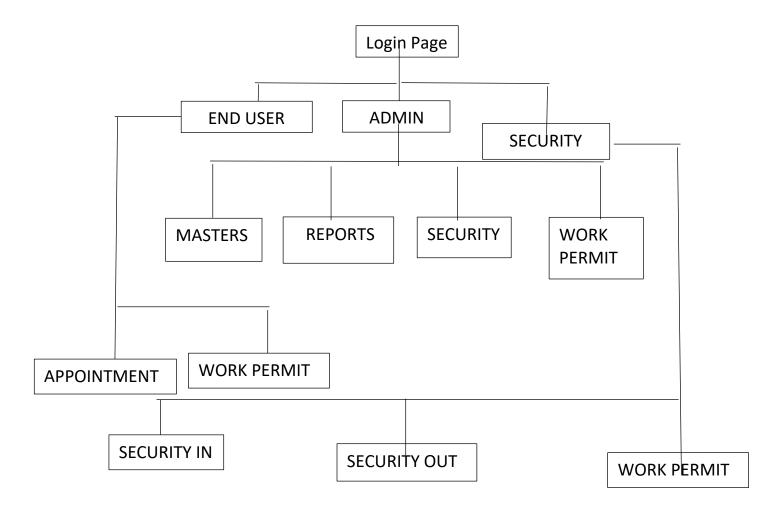
Behavioral Feasibility Normal human psychology of human beings indicate that people are resistant to change and computers are known to facilitate change. Any project formulations should consider this factor also. Before the development of the Project titled "Visitor's Management System", the need to study the feasibility of the successful execution of the project was felt and thus the following factors are considered for a Feasibility Study. 1. Need Analysis. 2. Provide the user's information pertaining to the preceding requirement.

4.3 Table of Feasibility Studies:

The result of the Feasibility Study was not provided to us as we were interns and they told only about the final results that was we can proceed further with our designing phase.

Chapter 5 System Design

5.1 User-Interface Sketch/Flow:



Chapter 6 Implementation

6.1Theoretical Implementation:

- Created different usernames for logging in to the application for the Admin, Security and the company employee.
- Created the database table with the required fields.
- Designed the U.I by firstly creating the tabs using conditions in SQL.
- Created the pages and the text fields.
- Wrote the PL/SQL code through which the details added by the admin, end user and the security are added or updated using the text fields and the details are stored and retrieved using the Oracle database.
- Testing the validations and functions

6.2 Actual Work of Contribution:

Day	Date	Work Executed	Learnings
1.			Learnt about what is Oracle
	5/6/17	Get information about Oracle	Apex, why it is used and how it
		apex	works
2.			Learnt PL/SQL syntaxes and
	6/6/17	Get information about PL/SQL	queries for using functions,
			procedures, triggers, etc.
3.			Went through all modules of
	7/6/17	Explore Oracle apex application	oracle apex application and saw
			how each module works
4.		Create some applications in	Created some applications like
	8/6/17	oracle apex using PL/SQL	data entry and used PL/SQL
		query	queries
5.		Create some applications	Created applications using html
	9/6/17	manually in oracle apex	code and added processes and
			validations to the application
6.		Analyze the project screenshots	Analyzed the project and its
	12/6/17	and gather the required	requirements
		information	

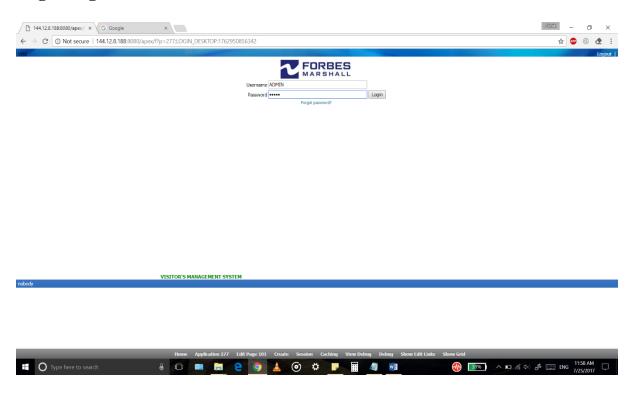
7.		Draw the Data Flow	Drew the DFD and ERD
/•	12/6/17		
	13/6/17	Diagram(DFD) and the Entity	Diagrams
0		Relationship Diagram(ERD)	7
8.	1 4 /6 /17	Make the required tables in	Made the table in excel
	14/6/17	excel showing the data types	showing the data types with the
		and then make the table in	scale and then wrote SQL query
		Oracle	to create tables in Oracle
9.	. = =	Draw rough User Interface(UI)	Drew the rough User
	15/6/17	sketch and study how to insert	Interface(UI) sketch and
		images in oracle in database	searched on google for inserting
			images in oracle database
10.		Start designing the UI in trainee	Designed UI in trainee
	16/6/17	workspace in oracle apex	workspace in oracle apex and
			studied about list of
			values(LOV) function
11.		Create U.I for addition of new	Learnt about adding different
	19/6/17	appointment and vendor details	items in oracle apex and editing
		in oracle apex	each item.
12.		Create U.I for addition of new	Learnt about adding different
	20/6/17	user and department details in	items in oracle apex and editing
		oracle apex	each item.
13.		Create report pages for	Learnt about adding a page
	21/6/17	appointment, vendor, user and	using report and form and
		department details for	editing the form.
		application in oracle apex	
14.		Attach the application with	Learnt insert query in PL/SQL
	22/6/17	database and store the details in	and showing the inserted data in
		respected tables in Oracle using	the report in another form in
		PL/SQL query	oracle apex.
15.		Edit reports and perform update	Learnt update and delete query
		and delete action on report data	in PL/SQL and editing the form
	23/6/17	using PL/SQL query and read	created by default by using
		about inserting images in	form and report page and read
		Oracle and validations	about validations in oracle apex
16.	- - / - /	Complete the required	Learnt about validations of
	26/6/17	validations in the project	email, password, and mobile
			number using SQL query
17.	,	Complete the authorizations	Learnt about different
	27/6/17	schemes for the project	authorization schemes in
			Oracle. Created custom
			authorization scheme
18.		Complete the required changes	Completed the required changes
	28/6/17	suggested by the internal guide	(alignments, U.I, etc.)

19.	29/6/17	Change the login page U.I and add company logo on the login page	Added company logo on the login page and changed the U.I using HTML and CSS code
20.	30/6/17	Read about authentication schemes in Oracle(different pages to be displayed for security, admin and end user)	Learnt about authentication schemes and tried to create a custom authentication scheme in demo application
21.	3/7/17	Complete authentication schemes of the project application	Completed the authentication schemes for end user, admin and security guard using SQL query
22.	4/7/17	Study the new pages to be created in the existing application for the security	Studied the new pages to be created and gathered the information required
23.	5/7/17	Create new tabs/pages and reports in the application for the security guards	Created new pages and reports for the security guard and added new details in the report
24.	6/7/17	Complete the image insertion in the report for the security guard	Completed the image insertion in report using blob and HTML code
25.	7/7/17	Create a new report for the printing of an id card with the appointment details and photo	Created new report which includes the details that will be shown on the id card and that can be printed(Printing process not completed)
26.	10/7/17	Display report according to security logged in with their location	Wrote query to show the report according to the security's location
27.	11/7/17	Display report according to the status of the appointment	Wrote query to show report according to the appointment status (in, out, cancelled)
28.	12/7/17	Display appointment details using interactive reports	Displayed details using interactive reports which also displays the image
29.	13/7/17	Edit report fields according to the security in and out tabs	Displayed report fields according to the tabs. Each tab which displays different report fields
30.	14/7/17	Create list of values(LOV's) for existing vendors and all details of employees working in the company	Created LOV's using SQL query using select, etc.
31.	17/7/17	Study the new work permit page to be created in the application	Studied the page and gathered the required information and data

32.	18/7/17	Create rough U.I sketch and table design	Created rough U.I and table format and approved by the internal guide
33.	19/7/17	Create the U.I using oracle apex and create the table with data types	Created the U.I in oracle apex using report with form and created the table using SQL Query
34.	20/7/17	Create report of work permit	Created the report and made changes as per instructions
35.	21/7/17	Show report as per the logged in user	Customized the report using SQL query
36.	22/7/17	Create a new tab of work permit in the application	Created new tab in the application
37.	24/7/17	Customize work permit report for the security	Customized report for security using SQL query
38.	25/7/17	Customize work permit page for security	Customized work permit page using SQL query in oracle apex
39.	26/7/17	Make changes in the application as per the company's need	Made changes in the application as per the company's need
40.	27/7/17	Test the application for errors	Tested the application by adding all details and checking for any errors
41.	28/7/17	Create report of the application	Created the report of the application

6.3 Screenshots:

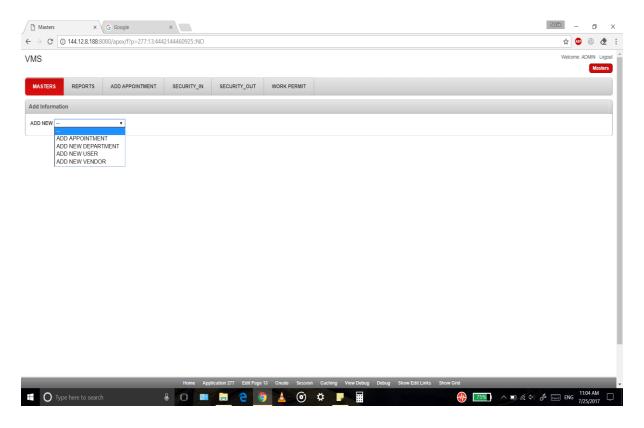
Login Page:



In the login page

- 1. The End User can login using their Token Number and Password
- 2. The Security of each location (Kasarwadi, Chakan, MIDC Pimpri) can login with their respective username and password
- 3. The Admin can login using his username and password

Masters Page:

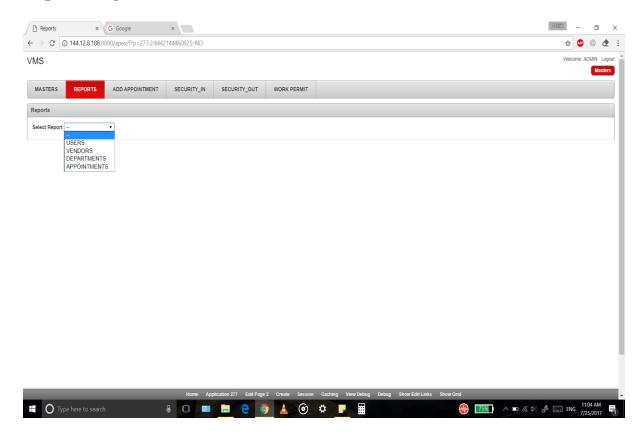


This page can only be seen by the Admin.

In this page, the Admin can select the details he wants to add from the Select List. From the Select List the Admin can choose to add:

- 1. Appointment
- 2. Department
- 3. Vendor
- 4. User

Reports Page:



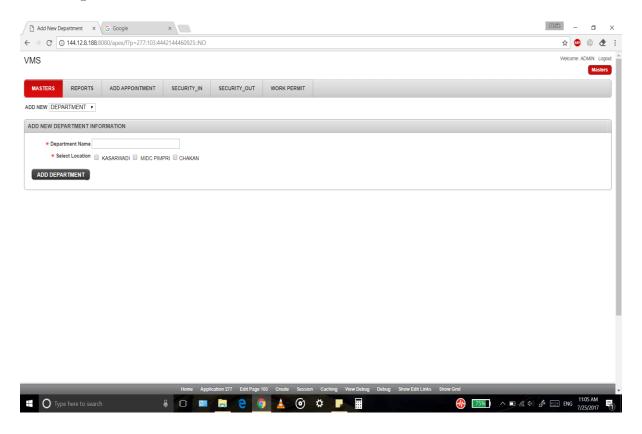
This page can only be seen by the Admin.

In this page, the Admin can select the Report he wants to view from the Select List.

From the Select List the Admin can choose to view the reports of:

- 1. Appointment
- 2. Department
- 3. Vendor
- 4. User

Add Department Details:



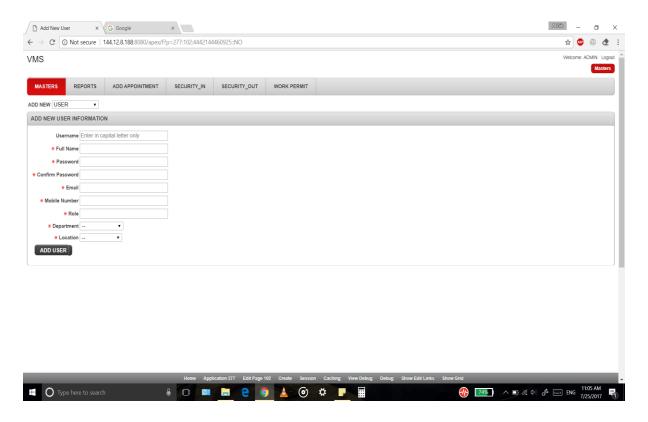
In this page, the Admin can add new Department details.

The Admin has to add the:

- 1. Department Name
- 2. Location

The admin can select one or more locations *Star '*' marked fields are mandatory*.

Add User Details:



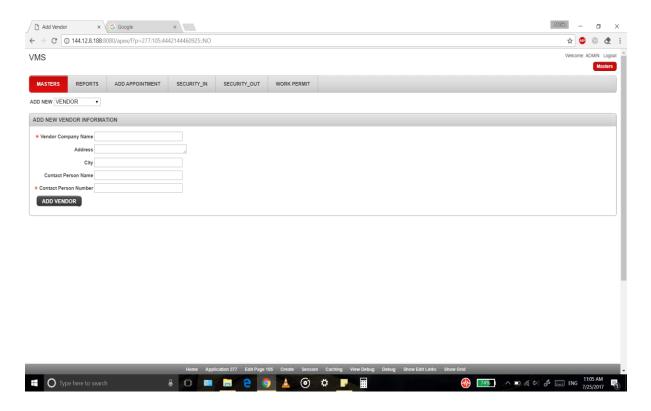
In this page, the Admin can add new User details.

The Admin has to add the:

- 1. Username
- 2. Full Name
- 3. Password and Confirm Password
- 4. Email
- 5. Mobile Number
- 6. Role
- 7. Department
- 8. Location

Star '*' marked fields are mandatory.

Add Vendor Details:



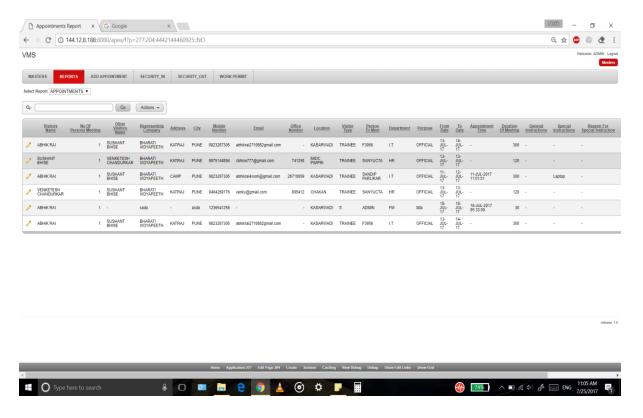
In this page, the Admin/ End User can add new Vendor details.

The Admin/ End User has to add the:

- 1. Vendor Company Name
- 2. Address
- 3. Contact Person Name
- 4. Contact Person Number

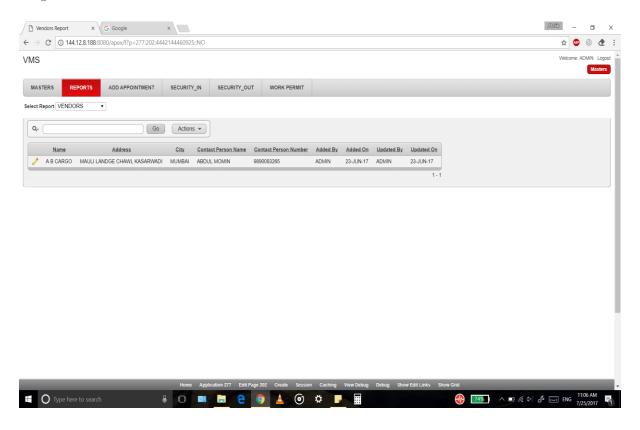
Star '*' marked fields are mandatory.

Report of Appointments Table:



In this page, the Admin can view the Appointments Reports of all the locations and End Users.

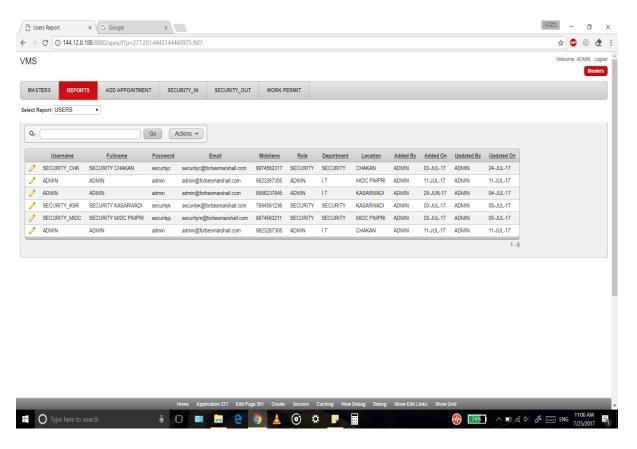
Report of Vendor Table:



In this page, the Admin can view the Vendors Report.

If the Admin wishes to update some details of the Vendor, he can update by clicking the pencil icon from the report.

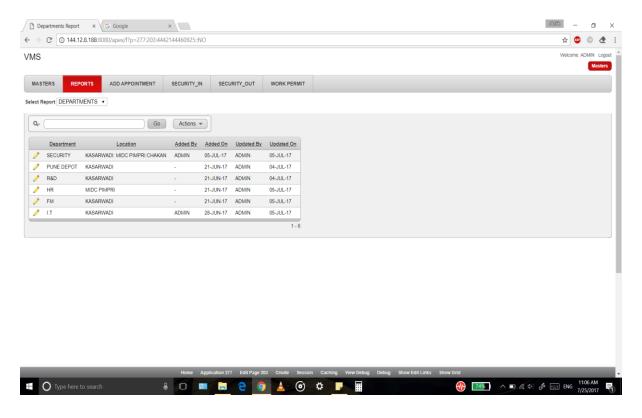
Report of Users Table:



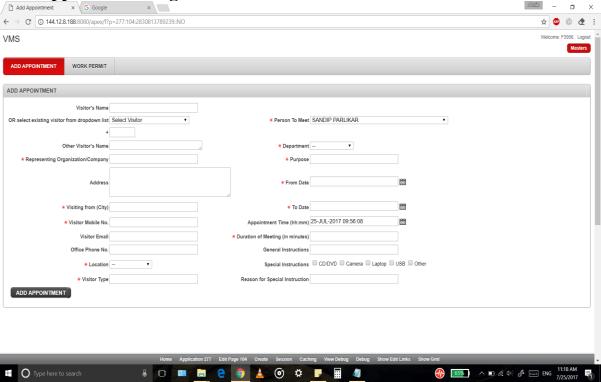
In this page, the Admin can view the Users Report.

If the Admin wishes to update some details of the User, he can update by clicking the pencil icon from the report.

Report of Departments Table:



In this page, the Admin can view the Departments Report. If the Admin wishes to update some details of the Department, he can update by clicking the pencil icon from the report. **Add Appointment Page:**



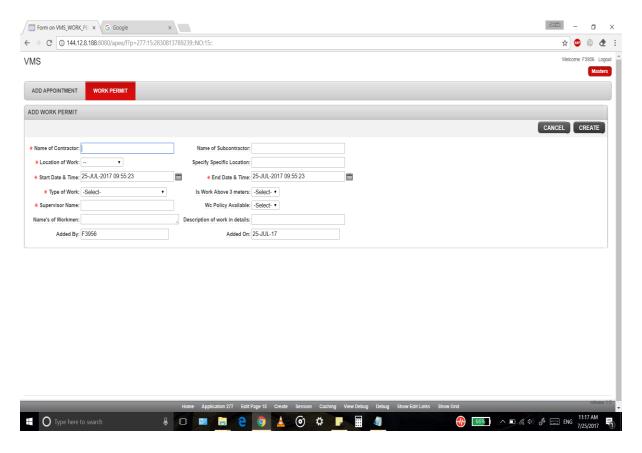
In this page, the End User/Admin can add new Appointments.

The details to be filled are:

- 1. Visitors Name or Existing Visitor Name
- 2. + Number of other visitors
- 3. Company name
- 4. Visiting from city
- 5. Mobile number
- 6. Email
- 7. Location
- 8. Visitor type
- 9. Person to meet
- 10.Department
- 11.Purpose
- 12. From date and to date
- 13. Appointment time
- 14. Duration of meeting

Star '*' marked fields are mandatory.

Create Work Permit:

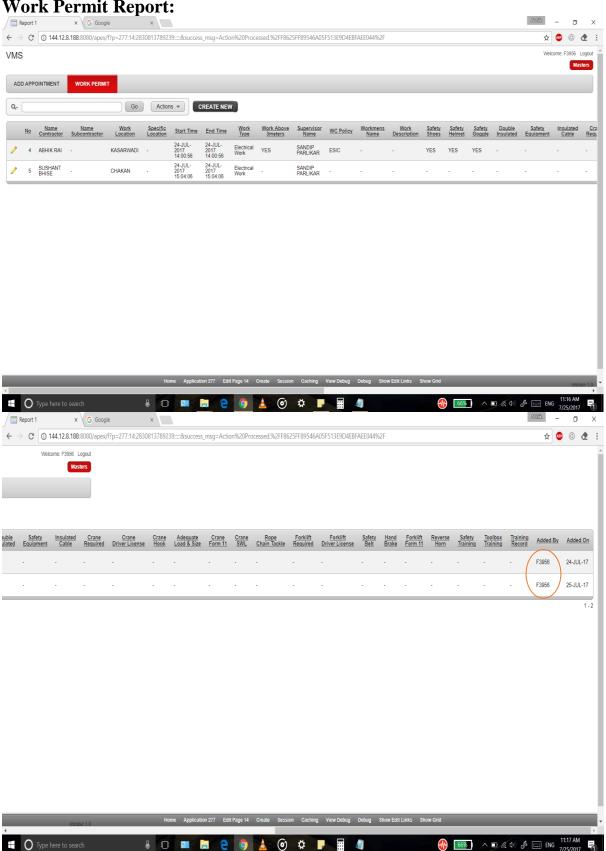


In this page, the End User can add new Work Permit The details to be filled are:

- 1. Name of Contractor
- 2. Name of Subcontractor
- 3. Location of Work
- 4. Specific Location
- 5. From date and time
- 6. To date and time
- 7. Type of work
- 8. Is work above 3 meters
- 9. Supervisor Name
- 10.WC Policy available
- 11. Names of Workmen
- 12.Description of Work

Star '*' marked fields are mandatory.

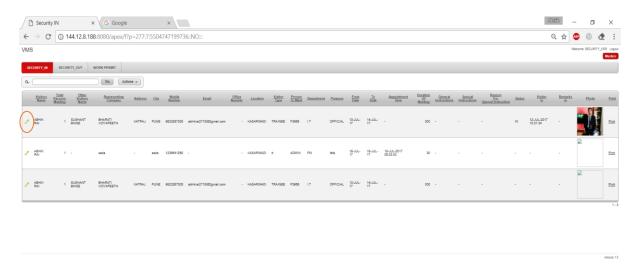




The Admin and the End User can view the Work Permit Report.

- 1. If the End User is logged in then they will be able to see the Work Permit created only by them and not of others.
- 2. If Admin is logged in then he will be able to see all the Work Permits.

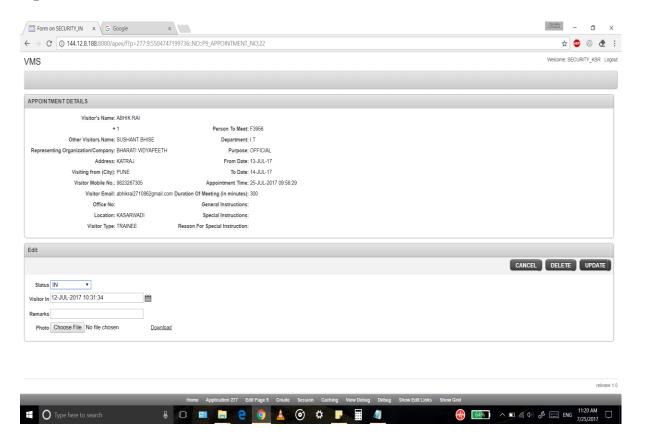
SECURITY_IN Report:





The Security_IN Report will be displayed as per the logged in security location. For example, Chakan Security will only see the Appointments created in Chakan. The security has to update the Appointment Details by clicking on the pencil icon in the report.

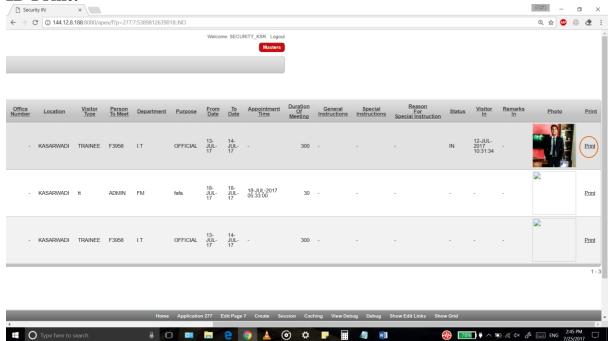
Update SECURITY_IN Details:



After clicking on the pencil icon this page will be displayed, in which the security has to update the following details:

- 1. Status (IN or Cancelled)
- 2. Visitor In time
- 3. Remarks
- 4. Photo

ID Print:

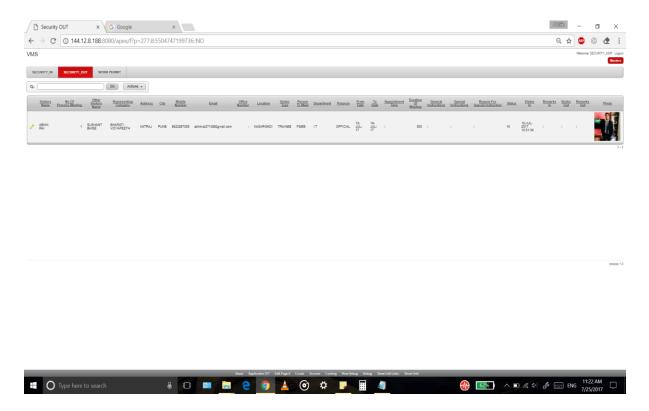


After updating the details, the security can print the ID by clicking on the print option from the report and then the next screen will be displayed as shown below. Then the ID can be printed by using the browser's print option.





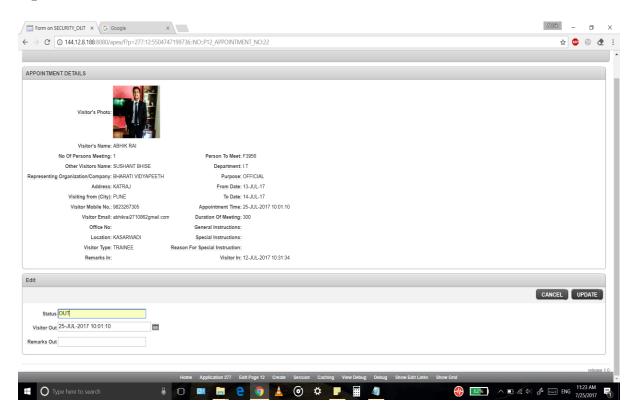
SECURITY_OUT Report:



The Security_OUT Report will be displayed as per the logged in security location. For example, Chakan Security will only see the Appointments created in Chakan. Only the Appointments with Status "IN" will be shown in the Security_OUT Report.

The security has to update the Appointment Details by clicking on the pencil icon in the report.

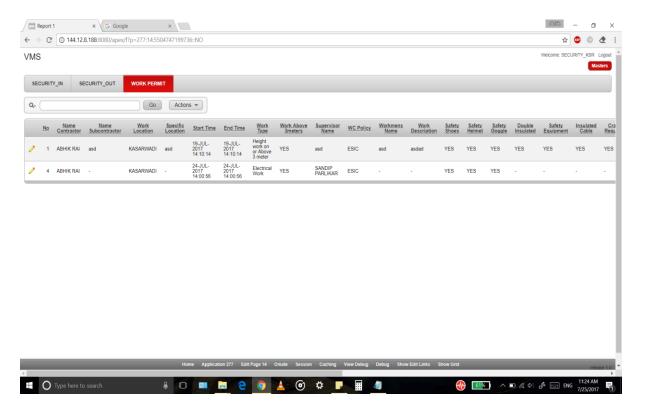
Update SECURITY_OUT Details:



After clicking on the pencil icon this page will be displayed, in which the security has to update the following details:

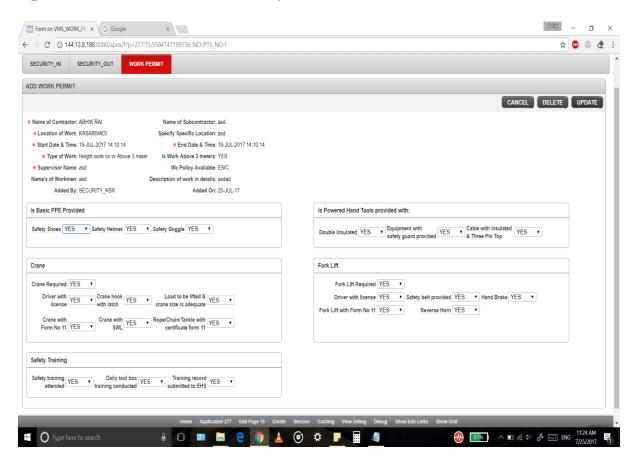
- 1. Status (OUT)
- 2. Visitor Out time
- 3. Remarks

Work Permit Report for Security:



The Work Permit Report will be displayed as per the logged in security location. For example, Chakan Security will only see the Work Permits with Work location of Chakan. The security has to update the Work Permit details by clicking on the pencil icon in the report.

Update Work Permit for Security:



After clicking on the pencil icon this page will be displayed, in which the security has to update the following details:

- 1. Is basic PPE Provided
- 2. Crane details
- 3. Is Powered hand tools provided with
- 4. Fork Lift details
- 5. Safety Training Details

All fields are optional.

Chapter 7 Testing

For the testing of the application, I was asked to test the validations and the functions of the applications.

Types of testing used are:

- Integration testing
- Feature testing

Integration Testing

It is the phase of software testing in which individual software modules are combined and tested as a group. It occurs after unit testing and before validation testing. Integration testing takes as its input modules that have been unit tested, groups them in larger aggregates, applies tests defined in an integration test plan to those aggregates, and delivers as its output the integrated system ready for system testing.

Feature Testing

A Software feature can be defined as the changes made in the system to add new functionality or modify the existing functionality. Each feature is said to have a characteristic that are designed to be useful, intuitive and effective.

In reality, a new test set is created for testing that feature corresponding to that cycle of that release. The extremely important and generally used new features ought to be tested thoroughly.

Conclusion/Learnings

As this project was created in Oracle Apex, which was completely new to me so I got to study and know how the application works, when it is used and its advantages. I also learnt to write the PL/SQL queries and how to use the database.

Chapter 9

Future Scope

In the future, I would like to suggest adding the ability to capture the Visitor's image on the security gate and update it directly into the applications database for a faster process and to create an ID card layout using oracle glass so that the printout will be taken in the size of the ID card.

Chapter 10

References

- YouTube
- Oracle Documentation
- Google
- Company guide