Design and Development of Software Suite For Employee Utilization Analysis: A Case Study

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Abstract- *Companies need to induct employees belonging to diverse backgrounds with varied work experience. Human resources work on different projects with varied complexity. It is required to identify the noteworthy parameters that contribute to evaluate the human resource utilization and their contribution in the projects. In light of this, author has designed and developed a software suite for "Eduquity Career Technologies, Bangalore" analyze utilization of human resources. Based on the present analysis recommendations could be made for future resource allocation and areas of improvement.*

Keywords*- resource utilization, software suite, automatio, analytics*

I. INTRODUCTION

Employees are the most valuable and possibly, the most costly asset to any corporate organization. Literature review divulges that there are a few reported researches on human resource utilization analysis. Ajmani et al have reported Principal Component Analysis and K-means clustering were used to assess the relative association of employees based on experience to complexity [1]. Kisumbe et al have presented an analysis on human resources utilization and the need to re-balance the realization of organizational and employee's objectives [2]. They have used questionnaire and interview tools for data collection. Yet another paper by Ernst presents a review of staff scheduling and rostering, an area that has become increasingly important as business becomes more service oriented and cost conscious in a global environment [3].

In the background of the research portrayed above, the present study demonstrates design and development of software suite for Employee Utilization Analysis for "Eduquity Career Technologies, Bangalore". The Eduquity Career Technologies conduct online exams to various clients. It conducts various type online exams in different centers all over India. Employees of the company are personally visiting various centers to conduct the exams. The employee has to conduct the exam based on the project provided to him/her within the time period of the project.

Author has reported the design and development of software suite for "Employee Utilization Analysis". The software collects data of tests conducted by each employee and analyzes how many tests each employee is conducting and compares with his/her salary.

The rest of paper is designed as follows; Introduction followed by the materials and methods utilized in the present study. Then the third section summarizes the computational details, results and discussions. The conclusion at the end justifies the suitability of software suite for the analysis of human resource utilization.

II. MATERIALS AND METHODS

The reported software suite developed using Visual studio 2010 for user interface design. Database connectivity is done using SQL server 2008. This tool keeps track of each employee records such as center details, project details, employee details and travel details of employee where he is conducted the exam. Thus this tool automated the manual system and generates monthly information for timely decision making. This section explains conceptual framework of the reported software suite.

A.Use case diagrams

In order to analyze the various systems, we make use of Use case diagram which is the type of the behavioral UML diagram. By using this diagram, we will come to know about the various types of roles in the system and how those roles interact with the system.
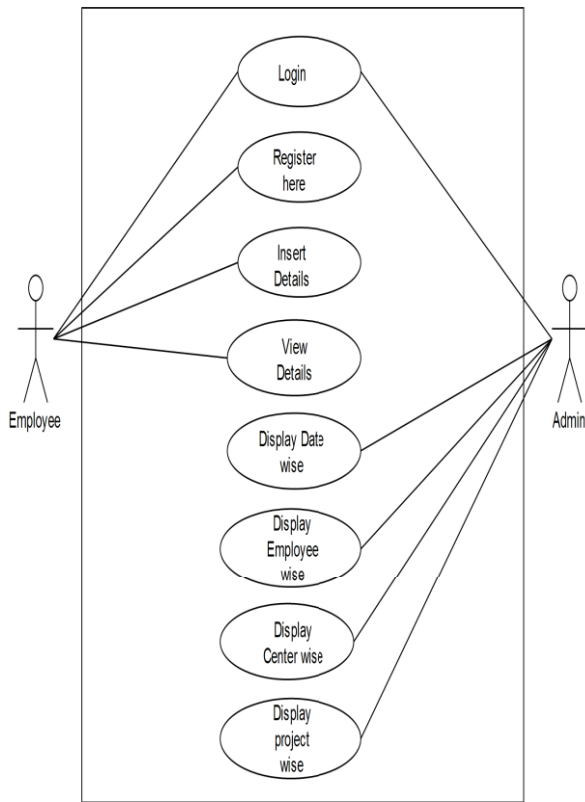
Figure 1: Use case diagram

B. Activity Diagram

Activity diagram is another important behavioral diagram in UML diagram to describe dynamic aspects of the system. Activity diagram is essentially an advanced version of flow chart that modeling the flow from one activity to another activity.

Figure 2: Activity Diagram

C. Data flow Diagram:

A data flow diagram (DFD) maps out the flow of information for any process or system. It uses defined symbols like rectangles, circles and arrows, plus short text labels, to show data inputs, outputs, storage points and the routes between each destination.
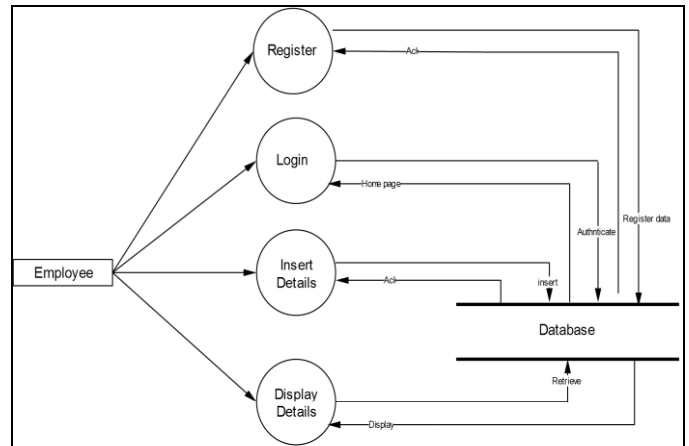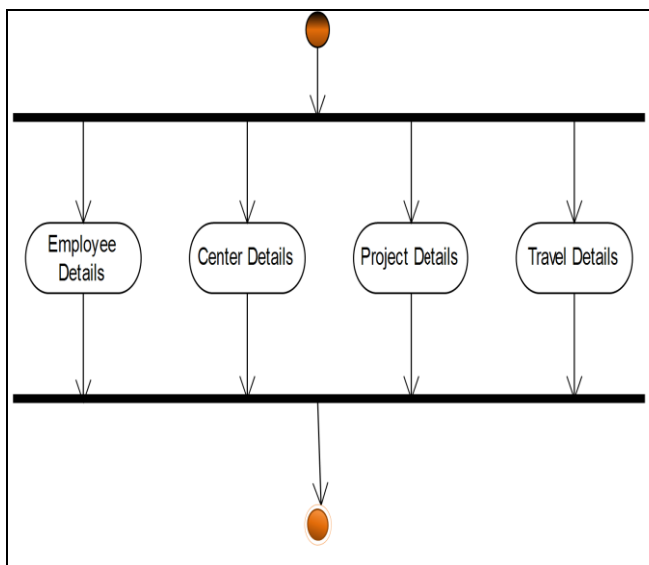
Level 1:(EMPLOYEE)

Figure 5.3 DFD Level 1 (Employee)
Level 1:(ADMIN)
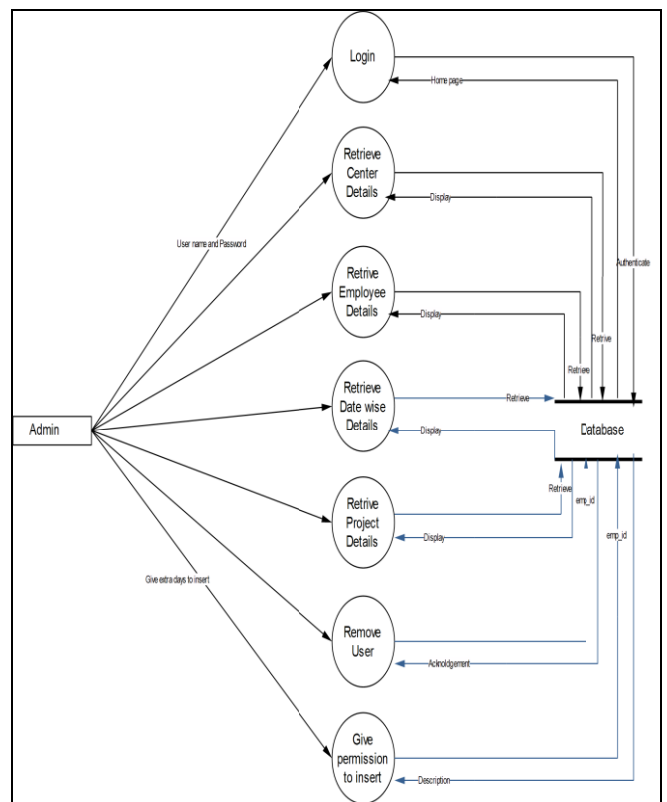

Figure 3 DFD Level 1 (Admin)

III. COMPUTATIONAL DETAILS, RESULTS AND DISCUSSIONS

The aforesaid development is carried out in is carried out in Visual Studio 2010. This software is aimed at reducing the manual operations by automating entire manual system.

Following are the some problems in existing manual system those are resolved by reported software suite.

A. Time Consuming:

But in manual system all records' details were in one single excel sheet and it was time consuming to retrieve the record as they wanted and also difficult to do analyze. With this software admin can retrieve the record as and when they want.

B. Not Secured:

Maintaining manual records of all employee details for conducting exam was challenging job for admin. Record may be misplaced or deleted or lost. The reported software resolved this issue.

C. Difficulty in Remembering Dates:

The person who went to conduct the exam may forget the dates after some days. By using this software the person can know about exam dates.

With present mode of measure company is not able to analyze and consolidate the overall employee output with respect to their work done, So that it does not provide timely information for quick decision making.

"Employee Utilization Analysis Software" based on window-based web application. The software is developed for employees who are working in "Eduquity Career Technologies, Bangalore". It provides the information about employee who will conduct online exam for different clients on different days/dates.

This keeps track of each employee records such as center details, project details, employee details and travel details of employee where he is conducted the exam. This system reduces manual entry and gives monthly information for timely decision making.

IV. CONCLUSION

The software "Employee Utilization Analysis" mainly capture the data from employee and generates the various reports based on conditions of the admin.

The generated report helps the admin to analyze how much work done by each employee. The date wise report helps to analyze on which date which exam conducted with center wise information.

The future work with this project is analyze exam conducted by each employee and compare with their salaries.

V. ACKNOWLEDGMENT

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