

Pay roll system project proposal computer science essay

[Technology](#), [Computer](#)



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8. 2 Java 6

1 TITLE

Payroll system

2 CUSTOMER

SMITH News Agent, Watford.

3 BACKGROUND/OVERVIEW

In Smith news agent, they are doing paper work calculation for employee's monthly salary. And they are maintaining all employee's details and salary details in paper works. They have to keep all details for long time for shop purpose. It takes long time to do all employees' salary calculation. To solve the entire problem I decide to develop a system for payroll. All data are going to store in a database and all calculation is going to calculate by system.

4 MAIN FUNCTIONS OF THE SYSTEM

In the system, Manager or Assistant Manager can login as an administrator. They can add employee details like First Name, Last Name, Address, Phone No, NI number, Bank Details, Tax Code, etc. For salary calculation they can enter employee's working hours for that month. If they want they can add bonus also. Automatically the system will calculate the salary and it will generate the reports. Administrator can view and print the reports and details and if they want they can delete the employee's details.

5 STATEMENT OF PROBLEM

In Tax Code, there are two type of Tax Code in using. Those are:

5. 1 Tax Codes end with a letter

This Tax Code is made up of several numbers and a letter. This type of Tax Code is called " Suffix" codes. For example: 647L, 375K, etc (paypershop, nd).

5. 2 Other Tax Codes

This Tax Code has two letters. There is no Number or is the letter ' D' followed by a Zero For example: BR, D0, and NT (direct, nd).

In payment type, they are paying regular hours, bank holiday hours and holiday hours. They are not paying for sick hours.

6 SOLUTIONS FOR PROBLEM STATEMENT

For Tax Code problem, I am going to use second type of Tax Code method (Other Tax Codes). For payment type problem, I am going to add a column called Pay Type. When they enter working hours they can select what type of working hours.

For example: REG – Regular

BH – Bank Holiday

SICK – Sickness Hours

7 AIMS AND OBJECTIVES

7. 1 AIMS

The main aim of the project is to develop a system to store employee's all details and working hours. The system has to calculate the payment and tax. The system also generates the reports.

7. 2 OBJECTIVES

To understand the current system

I went to Smith news agent (my customer) store and met the manager. I collected the details about how they are doing current salary calculation and how they are keeping are records. It is unstructured interviews.

To study a similar system

I went to Dowson house hotel and met the manager. I got some details about how their current system working, how they are calculating the payment and tax and how they are storing their employee's detail.

To study about Unified Modelling Language(UML)

It is help to create the logical design of the System. For e. g. Activity diagram, Use case diagram, Class diagram.

To study about programming languages

Java, Visual Basic. Net

To study database applications

Oracle, Mysql

Design the system

Testing and implementation

Test the system and make sure it works according to the customer's requirements, which includes verification and validation.

Install the developed system in store. And train the manager and assistant manager.

Get feedback from the manager and assistant manager. Make any change if they want changes or new features.

8 Literature review

8. 1 Visual Basic. Net

Visual Basic was one of the first languages along with Paradox and Dbase designed to take advantage of GUI interfaces with visual programming in mind. We can build the menus, forms and reports of a program by visual drag and drop operations. Then complete the coding by filling in the skeleton programs developed during prototyping of the programs interface. Coding VB pioneered the use of standard 3rd party components such as VBX and now ActiveX.

Now, VB. NET has many new and improved language features. The . NET framework comes with ADO. NET, which follows the disconnected paradigm, i. e. once the required records are fetched the connection no longer exists. Error handling has changed in VB. NET. A new Try-Catch-Finally block has been introduced to handle errors and exceptions as a unit, allowing appropriate action to be taken at the place the error occurred thus discouraging the use of ON ERROR GOTO statement. Security has become more robust in VB. NET. In addition to the role-based security in VB6, VB. NET comes with a new security model, Code Access security (David, Chittibabu 2004).

8. 2 Java

Java was designed to be easy to use. Therefore it is easy to write, compile, debug, and learn than other programming languages. Java is object-oriented because programming in Java is cantered on creating objects, manipulating

objects, and making objects work together. This allows you to create modular programs and reusable code. One of the most significant advantages of Java is its ability to move easily from one computer system to another. The ability to run the same program on many different systems is crucial to World Wide Web software, and Java succeeds at this by being platform-independent at both the source and binary levels.

Java is one of the first programming languages to consider security as part of its design. The Java language, compiler, interpreter, and runtime environment were each developed with security in mind. In Java, multithreaded programming has been smoothly integrated into it, while in other languages, operating system-specific procedures have to be called in order to enable multithreading. Multithreading is a necessity in visual and network programming (Herbert 2007).

8. 3 My Front End GUI

After a lot of research I was decided to use VB. Net for my front end GUI. There are some good features in VB. Net. For example, we can build the menus, forms and reports of a program by visual drag and drop operations. Then we have to complete the coding. Like these there are lot of features.

Why I did not chose the java? There are lot drawbacks. Java language programs runs on a virtual machine. Therefore it runs slowly and it takes more memory-consuming. In java, No separation of specification from implementation and No preconditions and post conditions. And Exceptions not caught within a method must be declared as thrown by that method. The

default look and feel of GUI applications written in Java using the Swing toolkit is very different from native applications.

8. 4 ORACLE (PL/SQL)

Oracle is the No 1 database and has the most advanced feature set. Oracle is made up of a set of processes running in our operating system. Oracle database system has the following properties:

Atomicity: That is Results of a transaction's execution are either all committed or all rolled back.

Consistency: The database is transformed from one valid state to another valid state. Illegal transactions aren't allowed and, if an integrity constraint can't be satisfied then the transaction is rolled back.

Isolation: The results of a transaction are invisible to other transactions until the transaction is complete thus increasing the security on data.

Durability: Once committed (completed), the results of a transaction are permanent and survive future system and media failures and thus ensuring maintenance and protection of data (Steven, Bill 2005).

We are using PL/SQL (procedural SQL) language to use the Oracle. With PL/SQL, we can use SQL statements to manipulate Oracle data and flow-of-control statements to process the data. Moreover, we can declare constants and variables, define procedures and functions, and trap runtime errors. PL/SQL is a block-structured language. A PL/SQL block has three parts: a

declarative part, an executable part, and an exception-handling part (In PL/SQL, a warning or error condition is called an exception).

8. 5 MySQL

MySQL is open source Relational DataBase Management System (RDBMS). It is using Structured Query Language (SQL). The Mysql has lot of advantages. It is available on many different operating systems. We can use in different platform. It is free to use for personal, private, or development use. It is using Indexes like primary key index and unique index to avoid duplicate row data. We have the opportunity to optimize searching against even large amounts of text located in any field indexed as such.

8. 6 My Back End

I decided to use Oracle (PL/SQL) to use back end. In oracle, lot of advantages are there. PL/SQL makes it easy to detect and process predefined and user-defined error conditions called exceptions. Anonymous PL/SQL blocks can be embedded in an Oracle Pre-compiler. And one of the main advantages is recent version (10g) oracle has the concept of Flashback technology.

Flashback provides an

Efficient recovery from human errors

Faster database recovery

Helps in simplifying the management and administration processes

Why I was rejected the MySQL? There are some drawbacks. The indexes take up disk space. Normally the space usage is not significant, but because of creating index on every column in every possible combination, the index file would grow much more quickly than the data file. In the case when a table is of large table size, the index file could reach the operating system's maximum file size. The indexes slow down the speed of writing queries, such as INSERT, UPDATE and DELETE. Because MySQL has to internally maintain the “ pointers” to the inserted rows in the actual data file.