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Advance Object Programming

420-P46-AS

Final Project Report

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Project Description

This project provides a solution for the management of the company Hi-Tech Distribution Inc. The developed system allows access to users with a valid user name and password and categorizes them by job title. The permissions of every user are limited to the role they play on the company for that four different forms where created. The manager of the company is allowed to oversee all the employees of the company together with their user names. Personnel on the sales department are allowed only to access and modify information pertinent to clients of the company. Products that can be books or software are managed by the inventory controller. Lastly, different clerks are able to set, review, change and delete orders based on the existent products, clients and their identification number.

Project Development Process

## Analysis:

The application requires to:

* Provide limited access to application features depending on the job title of the employee.
* Manage Employees, Clients, Products and orders (Save/update/delete/search/list).
* Ensure all users make part of the company (have a valid user name and password)
* Stores information on a Database.

## Design:

The application contains five Windows forms (GUI):

* Login form adds security on the system by validating every user and password. It also gives access to the form as it corresponds based on the job title of the employee. This form uses [ADO.net](http://ADO.net) Object Model in a connected mode to validate input data with stored data. The form also references to the class library “UsersBussinessSide” to define the needed classes and connections with the data access “DataAccessUsersDB”.
* The MIS Management form allows its user to save/update/delete/Search/list employees and users information. This form uses [ADO.net](http://ADO.net) Object Model in a connected mode to validate input data with stored data. The form also references to the class library “UsersBussinessSide” to define the needed classes and connections with the data access “DataAccessUsersDB”.
* The Sales Manager access to the form to save/update/delete/search/list clients’ information. The back end of this GUI was developed using [ADO.net](http://ADO.net) Object Model in a disconnected mode. In order to create objects referent to the project, the class library “ClassLibraryClient” was added as a reference on the project.
* Inventory Controllers are authorized to save/update/delete/search/list product information by using the specific form. The code of this form was built with the entity framework “HiTechDBModel”.
* The Clerk’s form save/update/cancel/search/list orders based on the clients and products. The code of this form was built with the entity framework “HiTechDBModel” as well as LINQ.

Additionally, the GUI contains a static class designed to ensure the validity of the data imputed.

## Implementation:

Source Code Listing:

Database used: HiTechDB

## Testing:

| Form | Action | Result |
| --- | --- | --- |
| Login | Valid user name and password | Access to specific form based on job title |
| Invalid user name and/or password | Error Message |
| MIS Management | save/update/cancel/search/list user or employee with valid information | Success Message  Operation executed on data source |
| save/update/cancel/search/list user or employee with invalid information | Error Message |
| Sales Management | save/update/cancel/search/list client with valid information | Success Message  Operation executed on data source |
| save/update/cancel/search/list client with invalid information | Error Message |
| Inventory management | save/update/cancel/search/list product with valid information | Success Message  Operation executed on data source |
| save/update/cancel/search/list product with invalid information | Error Message |
| Clerks | save/update/cancel/search/list order with valid information | Success Message  Operation executed on data source |
| save/update/cancel/search/list order with invalid information | Error Message |

## Deploying the Application:

In order to get an optimum use of the application it is necessary to have a computer with access to Visual Studio Enterprise 2015 and SQL Server 2014.

Conclusion

Along this project I had to learn the importance of planning before developing software. When analyzing the scope of the project I got to understand the value that software adds to a company and its users. In addition, successfully I understood the importance of deeply understanding the users in order to provide a useful solution.