**PROJECT ON**

**NEW PROJECT LTD**

**Developed by:**

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| **Names** | **Reg. No** |
| **Emmanuel Okundaye Salihu** | **R173028901199** |
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**NEW PROJECT LTD**

**Batch Code:**

**Start Date: End Date:**

**Name of the Coordinator: *Mrs. Titi Martins.***

**Name of Developers: *Emmanuel Okundaye Salihu, Egbewumi Oluwapelumi, Inuwa Hauwa Walida, and Chukwu Fortune*.**

**Date of Submission: *19 July 2019***

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**CERTIFICATE**

This is to certify that this report titled *New Project Ltd* embodies the original work done by *Emmanuel Okundaye Salihu, Egbewumi Oluwapelumi, Inuwa Hauwa Walida, and Chukwu Fortune* in partial fulfillment of their course requirement at NIIT.

Coordinator: *Mrs. Titi Martins*

**ACKNOWLEDGEMENT**

**We have benefited a lot from the feedback and suggestions given to us by *Mrs. Titi Martins***

**SYSTEM ANALYSIS**

**System Summary**: New Project LTD is a company that provides professional staff for different kind of contract projects. They distribute Time Cards to all their Employees on a daily basis, to have a record of all work duties performed. Due to the various kind of contract projects performed, the company stores a file of all the different kind of work duties performed by all their employees in the Work Details file. When a client requests for a project from the company, there are various parameters that will affect the project execution before a bill will be sent to the client for the outstanding payment.

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| DATABASE DESIGN |

Database Name: TimeCard

Number of Schemas: 4

Schema Names:

1. Payment
2. ProjectDetails
3. CustomerDetails
4. HumanResources

Number of Tables: 9

Table Names:

1. CustomerDetails.Clients
2. HumanResources.Employees
3. ProjectDetails.Projects
4. Payment.PaymentMethod
5. Payment.Payments
6. ProjectDetails.WorkCodes
7. ProjectDetails.ExpenseDetails
8. ProjectDetails.Timecard
9. ProjectDetails.TimeCardExpenses

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| SCHEMATIC DIAGRAM OF THE DATABASE |

DATABASE NAME: TimeCard



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| TABLE DESIGN |

Database Name: TimeCard

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Data Type | Width | Description |
| ClientID | *Int* |  | Client number |
| CompanyName | *varchar* | 40 | Company Name |
| Address | *varchar* | 50 | Company Address |
| City | *varchar* | 30 | Company City |
| State | *varchar* | 30 | Company State |
| Zip | *varchar* | 40 | Zip code |
| Country | *varchar* | 30 | Company Country |
| ContactPerson | *varchar* | 20 | Contact person |
| Phone | *varchar* | 100 | Company phone number |

The CustomerDetails.Client Table

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Data Type | Width | Description |
| EmployeeID | *int* |  | Employee number |
| FirstName | *varchar* | 30 | Employee first name |
| LastName | *varchar* | 30 | Employee last name |
| Title | *varchar* | 40 | Employee Designation |
| Phone | *varchar* | 100 | Employee phone number |
| BillingRate | *money* |  | Employee billing rate |

HumanResources.Employees Table

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Data Type | Width | Description |
| ProjectID | *int* |  | Project number |
| ProjectName | *varchar* | 50 | Project name |
| ProjectDescription | *varchar* | 100 | Project Description |
| ClientID | *int* |  | ID of Client |
| BillingEstimate | *money* |  | Estimation of bill |
| EmployeeID | *int* |  | ID of Employee |
| StartDate | *datetime* |  | Start date of project |
| EndDate | *datetime* |  | End date of project |

ProjectDetails.Projects Table

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Data Type | Width | Description |
| PaymentMethodID | *int* |  | Payment Method number |
| Description | *varchar* | 100 | Description of payment method |

Payment.PaymentMethod Table

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Data Type | Width | Description |
| PaymentID | *int* |  | Payment number |
| ProjectID | *int* |  | ID of Project |
| PaymentAmount | *Money* |  | Amount paid |
| PaymentDate | *Datetime* |  | Date of payment |
| EndDate | *Datetime* |  | EndDate of project |
| CreditCardNumber | *int* |  | CreditCard number |
| CreditHolderName | *varchar* | 40 | Name of credit card owner |
| CreditCardExpiryDate | *Datetime* |  | Expiry date of credit card |
| PaymentMethodID | *Int* |  | ID of payment method |
| PaymentDue | *money* |  | Due payment |

Payment.Payments Table

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Data Type | Width | Description |
| WorkCodeID | *Int* |  | Work Code number |
| Description | *varchar* | 100 | Desscription of Work |

Project.WorkCodes Tables

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Data Type | Width | Description |
| ExpenseCodeID | *Int* |  | Expense code number |
| Description | *varchar* | 100 | Description of the expense |

ProjectDetails.ExpenseDetails Table

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Data Type | Width | Description |
| TimeCardID | *Int* |  | Time Card number |
| EmployeeID | *Int* |  | ID of Employee |
| DateIssued | *Datetime* |  | Date issued |
| DaysWorked | *Int* |  | Days Worked |
| ProjectID | *Int* |  | ID of Project |
| BillableHours | *Int* |  | Billable Hours |
| BillingRate | *Money* |  | Billing Rate |
| TotalCost |  |  | Total Cost |
| WorkCodeID | *Int* |  | Work Code ID |
| TimeCardDetailID | *Int* |  | Time Card Details ID |
| WorkDescription | *varchar* | 100 | Description of work |

` ProjectDetails.TimeCard Table

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Data Type | Width | Description |
| TimeCardExpensesID | *Int* |  | Time Card Expense number |
| TimeCardID | *Int* |  | ID of Time Card |
| ExpenseDate | *Datetime* |  | Expense Date |
| EndDate | *Datetime* |  | End Date of project |
| ExpenseAmount | *Money* |  | Expense Amount |
| ProjectID | *Int* |  | ID of project |
| ExpenseCodeID | *int* |  | Expense Code ID |

ProjectDetails.TimeCardExpenses Table

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| VALIDATION PERFORMED |

|  |  |
| --- | --- |
| **Validation Required** | **Method(s) used for validation** |
| ClientID must be auto generated. | Identity specification |
| CompanyName, ContactPerson, Address, City, State, Zip, Country and Phone should not be left blank. | NOT NULL clause in the CREATE TABLE statement |
| Phone must be in the format: ‘[0-9][0-9]-[0-9][0-9][0-9]-[0-9][0-9][0-9][0-9]-[0-9][0-9][0-9]-[0-9][0-9][0-9]’. | CHECK constraint |

CustomerDetails.Clients Table

|  |  |
| --- | --- |
| **Validation Required** | **Method(s) used for validation** |
| EmployeeID should be auto generated. | Identity specification |
| Title must have any one of the following values: Trainee, Team Member, Team Leader, Project Manager or Senior Project Manager. | CHECK constraint |
| BillingRate should be greater than 0. | CHECK constraint |
| FirstName and Phone should not be left blank. | NOT NULL clause in the CREATE TABLE statement |
| Phone must be in the format: ‘[0-9][0-9]-[0-9][0-9][0-9]-[0-9][0-9][0-9][0-9]-[0-9][0-9][0-9]-[0-9][0-9][0-9]’. | CHECK constraint |

HumanResources.Employees Table

|  |  |
| --- | --- |
| **Validation Required** | **Method(s) used for validation** |
| ProjectID shoulde be auto generated | Identity specification |
| ProjectName, StartDate and EndDate should not be left blank | NOT NULL in the create table statement |
| BillingEstimate should be greater 1000 USD | CHECK constraint |
| EndDate sould be greater than the StartDate | CHECK constraint |

ProjectDetails.Project Table

|  |  |
| --- | --- |
| **Validation Required** | **Method(s) used for validation** |
| PaymentMethodID should be auto generated | Identity specification |
| Description should not be left blank | NOT NULL in the create table |

PaymentMethodID Table

|  |  |
| --- | --- |
| **Validation Required** | **Method(s) used for validation** |
| PaymentID should be auto generated | Identity specification |
| ProjectID is a foreign key from the Project table | Foreign Key Referral |
| PaymentAmount should be greater than 0 | Check constraint |
| PaymentDate should be greater than the end date of the project. | CHECK constraint |
| If a credit card is not used for payments, CreditCardNumber, CardHoldersName, and CreditCardExpDate should be made NULL. | NOT NULL in the create table statement |
| If a credit card is used, the CreditCardExpDate value should be greater than the payment date. | CHECK constraint |
| PaymentDue can allow NULL but should not be greater than PaymentAmount. | NOT NULL in the create table statement |

Payment.Payments Table

|  |  |
| --- | --- |
| **Validation Required** | **Method(s) used for validation** |
| WorkCodeID should be auto generated | Identity specification |
| Description should not allow NULL | NOT NULL in the create table statement |

ProjectDetails.WorkCodes Table

|  |  |
| --- | --- |
| **Validation Required** | **Method(s) used for validation** |
| ExpenseID should be auto generated | Identity specification |
| Description should not allow NULL | NOT NULL in the CREATE TABLE statement |

ProjectDetails.ExpenseDetails Table

|  |  |
| --- | --- |
| **Validation Required** | **Method(s) used for validation** |
| TimeCardID should be auto generated. | Identity Specification |
| EmployeeID is a foreign key from the Employee table. | Foreign Key Referral |
| DateIssued should be greater than the current date and the project start date. | CHECK constraint |
| DaysWorked should be greater than 0. | CHECK constraint |
| ProjectID is a foreign key from the Projects table. | Foreign Key Referral |
| Billable hours should be greater than 0. | CHECK constraint |
| TotalCost should be automatically calculated by using the following formula: TotalCost=Billable Hours \* BillingRate. | Multiplication Operator |
| WorkCodeID is a foreign key from the WorkCodes table. | Foreign Key Referral |

ProjectDetails.TimeCard Table

ProjectDetails.TimeCard Table

|  |  |
| --- | --- |
| **Validation Required** | **Method(s) used for validation** |
| TimeCardExpenseID should be auto generated. | Identity specification |
| TimeCardID is a foreign key from the TimeCards table. | Foreign Key Referral |
| ExpenseDate should be less than the project end date. | CHECK constraint |
| ExpenseAmount should be greater than 0. | CHECK constraint |
| ExpenseDate should not allow NULL. | NOT NULL in the table create statement |
| ProjectID is a foreign key from the Projects table. | Foreign Key Referral |
| ExpenseID is a foreign key from the ExpenseDetails table. | Foreign Key Referral |

|  |  |  |  |
| --- | --- | --- | --- |
| **Report Name** | **Report Type** | **Description** | **Tables/Queries Used** |
| Project and Employee Details Report | Query Output | This report displays the project details such as Project ID, Project Name, and the Employee Name , and Employee Title for the employees working on the project | SELECT p.ProjectID, p.ProjectName, e.FirstName + ' ' + e.LastName as 'Employee Name',  e.Title FROM HumanResources.Employees e JOIN ProjectDetails.Projects p  ON e.EmployeeID = p.EmployeeID. |

**REPORTS OUTLINE**

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| **CONFIGURATION** |

Hardware: PC compatible with an *Intel Pentium-IV* processor, *512-MB RAM*, and *40GB* of *Hard disk*.

Operating System: *Microsoft Windows XP* with *Service Pack 2*.

Software: *Microsoft SQL Server 2005* Standard Edition.