**152-080 Databases**

# **Unit 11: Creating Indexes**

# Introduction

In this lab you will create clustered and non-clustered indexes on two tables and understand how they can also act as constraints on tables.

First, create a new database called **IndexDB.**

**CREATE DATABASE IndexDB;**

# Instructions

You are to complete the following actions. Make sure you are using the IndexDB for this assignment. For each question below – paste in print screens of your progress in each step.

1. Table Name: **Employees**

**YOUR COMMAND WAS:**Graphical user interface, text, application

Description automatically generated

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Colum Name** | **EmployeeNumber** | **FirstName** | **LastName** | **Username** | **DateHired** | **HourlySalary** |
| **Key Type** |  |  |  |  |  |  |
| **Property** |  |  |  |  |  |  |
| **Null/Unique** | NOT NULL | NOT NULL | NOT NULL |  |  |  |
| **Check** |  |  |  |  |  |  |
| **Default Value** |  |  |  |  |  |  |
| **FK Ref Table** |  |  |  |  |  |  |
| **FK Ref Column** |  |  |  |  |  |  |
| **Data Type** | INT | NVARCHAR | NVARCHAR | NCHAR | DATE | MONEY |
| **Length** |  | 20 | 20 | 8 |  |  |

2. Table Name: **Rooms**

**YOUR COMMAND WAS:**Text

Description automatically generated

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Colum Name** | **RoomID** | **Room Number** | **Location Code** | **Room Type** | **Bed Type** | **Rate** | **Available** |
| **Key Type** |  |  |  |  |  |  |  |
| **Property** |  |  |  |  |  |  |  |
| **Null/Unique** | NN |  |  |  |  |  |  |
| **Check** |  |  |  |  |  |  |  |
| **Default Value** |  |  | Silver Spring | Bedroom | Queen | 75.85 | 0 |
| **FK Ref Table** |  |  |  |  |  |  |  |
| **FK Ref Column** |  |  |  |  |  |  |  |
| **Data Type** | INT | NVARCHAR | NVARCHAR | NVARCHAR | NVARCHAR | MONEY | BIT |
| **Length** |  | 10 | 50 | 20 | 20 |  |  |

3. Insert the following employee record into the Employees table.

**YOUR COMMAND WAS**:

Logo, company name

Description automatically generated

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| EmployeeNumber | FirstName | LastName | Username | DateHired | HourlySalary |
| 62480 | James | Bond | Jbond | 1998-10-25 | 28.02 |

4. Create the follow index on the EmployeeNumber column of table Employees.

CREATE INDEX **IX\_Employees** ON Employees(EmployeeNumber);

Verify the existence of the Index you just created. What type of index was it?

A picture containing logo

Description automatically generated

5. Insert the following employee record into the Employees table.

**YOUR COMMAND WAS**:

Graphical user interface

Description automatically generated with low confidence

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| EmployeeNumber | FirstName | LastName | Username | DateHired | HourlySalary |
| 35844 | Gertrude | Monay | Gmonay | 2006-06-22 | 14.36 |

Was it successful? If no, explain.

|  |
| --- |
| It worked |

6. Delete the index **IX\_Employees** from the Employees table.

**YOUR COMMAND WAS**:

A picture containing text

Description automatically generated

7. Create a new clustered index called **IX\_Employees\_Clustered** on the EmployeeNumber column of table Employees.

**YOUR COMMAND WAS**:

A picture containing logo

Description automatically generated

What type of Index was it?

|  |
| --- |
| Clustered |

8. ALTER the Employees table and ADD a Primary Key constraint called **PK\_EmployeeNumber** on the EmployeeNumber column.

**YOUR COMMAND WAS**:

Graphical user interface, text, application, chat or text message

Description automatically generated

Was it successful?

|  |
| --- |
| Yes |

What type of Index is the Primary Key?

|  |
| --- |
| Non-clustered |

9. Drop both of the following Indexes: **IX\_Employees\_Clustered**, **PK\_EmployeeNumber**

**YOUR COMMAND WAS**:

Graphical user interface, text

Description automatically generated

Verify that it was success.



10. Re-create the Primary Key **PK\_EmployeeNumber** back to the Employees table (same command from Step #8).

What type of Index is the Primary Key this time?

Clustered

11. Re-create the index **IX\_Employees\_Clustered** back on the Employees table (same command from Step #7)

Was it successful? If not, explain.

No, because you can’t created more than one clustered index on a table.

12. Insert the following record to the **Rooms** table.

**YOUR COMMAND WAS**:

Text

Description automatically generated

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Room Number | Location Code | Room Type | Bed Type | Rate | Available |
| 105 | SLSP |  | King | 85.75 | 1 |
| 106 | SLSP |  | Queen | 75.85 | 1 |

13. Create a unique non-clustered index called **IX\_Rooms\_NCU** on the RoomNumber column of table Rooms.

**YOUR COMMAND WAS**:

Graphical user interface, application

Description automatically generated with medium confidence

14. Insert the following record to the Rooms table.

**YOUR COMMAND WAS**:

Graphical user interface, text

Description automatically generated with medium confidence

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Room Number | Location Code | Room Type | Bed Type | Rate | Available |
| 105 | SLSP | Conference | King | 95.00 | 1 |

Was it successful? If not, explain.

|  |
| --- |
| No, because the room number is a duplicate and it’s suppose to be unique. |

15. Delete the index **IX\_Rooms\_NCU** you created in step #13.

**YOUR COMMAND WAS**:

A picture containing graphical user interface

Description automatically generated

Was it successful? Explain.

|  |
| --- |
| Yes |