**Part 01(Functions)**

**Use ITI DB:**

1. Create a scalar function that takes a date and returns the Month name of that date.
2. Create a multi-statements table-valued function that takes 2 integers and returns the values between them.
3. Create a table-valued function that takes Student No and returns Department Name with Student full name.
4. Create a scalar function that takes Student ID and returns a message to user.
   1. If first name and Last name are null, then display 'First name & last name are null.'
   2. If First name is null, then display 'first name is null'
   3. If Last name is null, then display 'last name is null.'
   4. Else display 'First name & last name are not null'
5. Create a function that takes an integer which represents the format of the Manager hiring date and displays department name, Manager Name and hiring date with this format.
6. Create multi-statement table-valued function that takes a string.
   1. If string='first name' returns student first name
   2. If string='last name' returns student last name
   3. If string='full name' returns Full Name from student table

Note: Use “ISNULL” function

1. Create function that takes project number and display all employees in this project (Use MyCompany DB)

**Part 02 (Views)**

**Note : # means number and for example d2 means department which has id or number 2**

**Use ITI DB:**

1. Create a view that displays the student's full name, course name if the student has a grade more than 50.
2. Create an Encrypted view that displays instructor names and the topics they teach.
3. Create a view that will display Instructor Name, Department Name for the ‘SD’ or ‘Java’ Department “use Schema binding” and describe what is the meaning of Schema Binding
4. Create a view “V1” that displays student data for students who live in Alex or Cairo.

Note: Prevent the users to run the following query

Update V1 set st\_address=’tanta’

Where st\_address=’alex’;

1. Create a view that will display the project name and the number of employees working on it. (Use Company DB)

**Use IKEA\_Company DB:**

1. Create a view named “v\_clerk” that will display employee Number, project Number, the date of hiring of all the jobs of the type 'Clerk'.
2. Create view named “v\_without\_budget” that will display all the projects data without budget
3. Create view named “v\_count “ that will display the project name and the Number of jobs in it
4. Create a view named” v\_project\_p2” that will display the emp# s for the project# ‘p2’. (use the previously created view “v\_clerk”)
5. modify the view named “v\_without\_budget” to display all DATA in project p1 and p2.
6. Delete the views “v\_ clerk” and “v\_count”
7. Create view that will display the emp# and emp last name who works on deptNumber is ‘d2’
8. Display the employee lastname that contains letter “J” (Use the previous view created in Q#7)
9. Create view named “v\_dept” that will display the department# and department name
10. using the previous view try enter new department data where dept# is ’d4’ and dept name is ‘Development’
11. Create view name “v\_2006\_check” that will display employee Number, the project Number where he works and the date of joining the project which must be from the first of January and the last of December 2006.this view will be used to insert data so make sure that the coming new data must match the condition

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**Part 03**

**Create a database “by Wizard” named “RouteCompany”**

1. Create the following tables with all the required information and load the required data as specified in each table using insert statements[at least two rows]

|  |  |  |
| --- | --- | --- |
| Table Name | Details | Comments |
| Department | |  |  |  | | --- | --- | --- | | DeptNo (PK) | DeptName | Location | | d1 | Research | NY | | d2 | Accounting | DS | | d3 | Marketing | KW | | 1-Create it programmatically  [By Code] |
| Employee | |  |  |  |  |  | | --- | --- | --- | --- | --- | | EmpNo (PK) | Emp Fname | Emp Lname | DeptNo | Salary | | 25348 | Mathew | Smith | d3 | 2500 | | 10102 | Ann | Jones | d3 | 3000 | | 18316 | John | Barrymore | d1 | 2400 | | 29346 | James | James | d2 | 2800 | | 9031 | Lisa | Bertoni | d2 | 4000 | | 2581 | Elisa | Hansel | d2 | 3600 | | 28559 | Sybl | Moser | d1 | 2900 | | 1-Create it programmatically 2-PK constraint on EmpNo  3-FK constraint on DeptNo 4-Unique constraint on Salary 5-EmpFname, EmpLname don’t accept null values |
| Project | |  |  |  | | --- | --- | --- | | ProjectNo (PK) | ProjectName | Budget | | p1 | Apollo | 120000 | | p2 | Gemini | 95000 | | p3 | Mercury | 185600 | | 1-Create it by Wizard  2-ProjectName can't contain null values  3-Budget allow null |
| Works\_on | |  |  |  |  |  | | --- | --- | --- | --- | --- | | EmpNo (PK) | ProjectNo(PK) | Job | Enter\_Date | | | 10102 | p1 | Analyst | | 2006.10.1 | | 10102 | p3 | Manager | | 2012.1.1 | | 25348 | p2 | Clerk | | 2007.2.15 | | 18316 | p2 | NULL | | 2007.6.1 | | 29346 | p2 | NULL | | 2006.12.15 | | 2581 | p3 | Analyst | | 2007.10.15 | | 9031 | p1 | Manager | | 2007.4.15 | | 28559 | p1 | NULL | | 2007.8.1 | | 28559 | p2 | Clerk | | 2012.2.1 | | 9031 | p3 | Clerk | | 2006.11.15 | | 29346 | p1 | Clerk | | 2007.1.4 | | 1-Create it Wizard  2- EmpNo INTEGER NOT NULL  3-ProjectNo doesn't accept null values  4-Job can accept null  5-Enter\_Date can’t accept null  and has the current system date as a default value[visually]  6-The primary key will be EmpNo,ProjectNo)  7-there is a relation between works\_on and employee, Project tables |
| Testing Referential Integrity | 1-Add new employee with EmpNo =11111 In the works\_on table [what will happen]  2-Change the employee number 10102 to 11111 in the works on table [what will happen]  3-Modify the employee number 10102 in the employee table to 22222. [what will happen]  4-Delete the employee with id 10102 | |
| Table Modification | 1-Add TelephoneNumber column to the employee table[programmatically]  2-drop this column[programmatically]  3-Build A diagram to show Relations between tables | |

1. Create the following schema and transfer the following tables to it
   1. Company Schema
      1. Department table
      2. Project table
   2. Human Resource Schema
      1. Employee table
2. Increase the budget of the project where the manager number is 10102 by 10%.
3. Change the name of the department for which the employee named James works.The new department name is Sales.
4. Change the enter date for the projects for those employees who work in project p1 and belong to department ‘Sales’. The new date is 12.12.2007.
5. Delete the information in the works\_on table for all employees who work for the department located in KW.

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