

Project 1

Project 1 – SQL implementation

Due: Submission of Milestone 1,2,3,4 in Blackboard by Saturday June 22nd midnight.

DO NOT submit a ZIP file and naming convention should be followed as given in deliverables.

Background

Through the continual learning of database design, development, and implementation, this project will help the learner to engage with the design of the database through a topic given to each group.

Submissions

The submissions will include both a Word Document and several .txt files for creating the database itself as outlined in each milestone deliverable. Submissions will be made through group submission within Blackboard.

Database creation project Overview

Students will form groups of 2 or max 3 and collaboratively create a database with data and reports for the respective systems given to each group.

Milestone 1:

Post the topic chosen (before May 27th, 11:59 pm) by mentioning the tag "@General" in Teams General channel with your group number and topic name.

Example like @General Project Group 22 "Seneca Lab system". You can choose any topic, but it should be unique from other groups.

You have to choose one topic from the list of topics given in file name "Topics for Database Applications.pdf". It is a first come first served basis. No 2 teams should choose the same topic.

Milestone 2:

Post the ERD Word document in Teams Group channel (before June 2nd , 11:59 pm) by mentioning the tag "@group number or @Rani Gnanaolivu in Teams individual group channel with your completed ERD diagram.

1. ERD Word document (Groupnumber_ERD.docx)

- 1.1. The submission will be a single MS Word document submitted through blackboard. This will include an ERD diagram of the chosen application for the group, include the topic chosen, name

of each student in the group and tables chosen. Failure to mention the name of the student next to the table chosen will lose marks.

- 1.1.1. Entity Relationship Diagram
- 1.1.2. Should have a minimum of 6 tables for the chosen topic.
- 1.1.3. Mention PK, FK and relationship types between entities.
- 1.1.4. Mention required fields as Bold.
- 1.1.5. Use one specific color for all entity names.
- 1.1.6. Use one specific color for all field names.
- 1.1.7. Who will implement which table: Add a text box mentioning the name of the student next to the entity name who will implement SQL coding for that table.

Confirm and post the 2 tables selected from the ERD in Teams Group number channel before June 8th, 11:59 pm

Milestone 3:

Each team member in the group will select 2 tables from the ERD with a minimum of one child table and one parent table and work individually and as a group to complete Project 1. There are deliverables for individual submission, which will be 70% of the total project and 30% for group work.

Individual Work: 3 files

Each student should post 2 files in the Group Teams channel.

Complete the CREATE, INSERT commands for the 2 tables selected from the ERD in Teams Group number channel before June 9th, 11:59 pm

1. **Creation Script: (Groupnumber_creationscript_firstname.txt)**
 - 1.1. Each student in the group picks 2 tables to do the creation script. Student1-> Table1, Table 2 creation, Student2-> Table3, Table4 creation, Student1-> Table5, Table 6 creation. A single txt file provides the scripting to create all the 2 tables selected, including all constraints and features as designed in the ERD and data dictionary. Minimum 5 attributes needed for each table. At least one CHECK constraint, one NOT NULL for all tables and a foreign key for the child table should be created.
2. **Data Dictionary Word document (Groupnumber_datadictionary_firstname.docx)**
 - 2.1. The submission will be a single MS Word document submitted through blackboard. This will include Title of the project, group number, name of the student and tables chosen, data dictionary of 2 tables chosen.
3. **Data Script: (Groupnumber_datascript_firstname.txt)**
 - 3.1. A single txt file provides the scripting to insert sample data into the 2 tables created. The amount of data should be enough to allow adequate testing of an application built upon the designed database. Rule of Thumb: 20-30 rows per data tables and their associated bridge tables, and an appropriate number of rows in lookup tables.
 - 3.2. Each student in the group who has the 2 tables to do creation script does the data script for those 2 tables. Student1-> Table1, Table 2 data inserts, Student2-> Table3, Table4 data inserts, Student1-> Table5, Table 6 data inserts.

Milestone 4:

Each team member in the group should use the same 2 tables selected from the ERD.

Combined work of reports in one Word file in the Group Teams channel.

Complete the SELECT,JOIN,VIEW commands for the 2 tables selected from the ERD in Teams Group number channel before June 16th , 11:59 pm

Group File submission: SELECT, JOIN, VIEWS

1. **Group SQL REPORT Word document (Groupnumber GROUPSQL REPORT.docx)** Combine all your creation and insert scripts from your team members and create reports with your table and other team members' table.
 - 1.1. The submission will be a single MS Word document submitted through blackboard. This will include the name of team members and a list of who made which table.
 - 1.2. Specify at least 6 SELECT reports with a combination of team members tables. (6 simple SQL queries with WHERE clause, aliases and screen shot of results)- Each team member will have one SELECT query from each of their table.
 - 1.3. 3 JOIN query reports chosen from different team members with sorting and aliases for selected columns and a where clause with 2 conditions with String and Integer data type columns. Each team member will have one JOIN query from their tables.
 - 1.4. 3 VIEW query chosen from different team members with sorting and aliases for selected columns and a where clause with 2 conditions with String and Integer data type columns. Each team member will have one VIEW query from their tables.

Milestone 5:

Each group will present their ERD during lab hour or lecture hour in the week of June 10th according group number alphabetically. Each team member shows the demo of table created and data inserted, and one SELECT query of their table created.

You have to be physically present to give your demonstration. No show will have a mark reduction of 25 out of 100 marks.

Milestone 1 to 4: Total Submission of all files in Blackboard with any corrections due June 23rd 11:59 pm.

Individual Work: 3 files -70%

**Project 1 – Individual
Submission (3 files)**

Deliverables

Groups will produce each of the following: **DO NOT submit a ZIP file and naming convention should be followed.**

1. Data Dictionary Word document (**Groupnumber_datadictionary_firstname.docx**): **15 marks**
 - 1.1. The submission will be a single MS Word document submitted through blackboard. This will include Title of the project, group number, name of the student and tables chosen, data dictionary of 2 tables chosen.
2. Creation Script: (**Groupnumber_creationscript_firstname.txt**): **15 marks**
 - 2.1. Each student in the group picks 2 tables to do the creation script. Student1-> Table1, Table 2 creation, Student2-> Table3, Table4 creation, Student1-> Table5, Table 6 creation. A single txt file provides the scripting to create all the 2 tables selected, including all constraints and features as designed in the ERD and data dictionary. Minimum 5 attributes needed for each table. At least one CHECK constraint, one NOT NULL and a foreign key for the child table should be created.
3. Data Script: (**Groupnumber_datascript_firstname.txt**): **15 marks**
 - 3.1. A single txt file provides the scripting to insert sample data into the 2 tables created. The amount of data should be enough to allow adequate testing of an application built upon the designed database. Rule of Thumb: 20-30 rows per data tables and their associated bridge tables, and an appropriate number of rows in lookup tables.
 - 3.2. Each student in the group who has the 2 tables to do creation script does the data script for those 2 tables. Student1-> Table1, Table 2 data inserts, Student2-> Table3, Table4 data inserts, Student1-> Table5, Table 6 data inserts.
4. Demo during week of June 10th: **25 marks.**

Group Submission (2 files) -30%

1. ERD Word document (**Groupnumber_ERD.docx**) **10 marks.**
 - 1.1. The submission will be a single MS Word document submitted through blackboard. This will include an ERD diagram given for the group, include the topic chosen, name of each student in the group and tables chosen. Failure to mention the name of the student next to the table chosen will lose marks.
2. Group SQL REPORT Word document (**Groupnumber_GROUPSQL_REPORT.docx**) **20 marks.**

Combine all your creation and insert scripts from your team members and create reports with your table and other team members' table.

 - 2.1. The submission will be a single MS Word document submitted through blackboard. This will include the name of team members and a list of who made which table.
 - 2.2. Specify at least 4 reports with a combination of team members tables. (4 simple SQL query with WHERE clause, aliases and screen shot of results),
 - 2.3. 4 JOIN or view of 2 tables chosen from different team members with sorting and aliases for selected columns and a where clause with 2 conditions with String and Integer data type columns.

Examples:

A Sample **Data Dictionary**: Groups will produce a data dictionary for **each** of their chosen tables. This data dictionary will include the same information as the ERD in table format in addition to data types, sizes, notes, and example data. A sample table is included below.

TABLE: **Employees**

Column	Data Type	Size, Precision	Default	PK/FK	Required	Range	Sample Data	Notes
EmployeeID	NUMBER	4		PK	Y	1-9999	1234	Autonumbered identity
firstName	String	25			Y		"Bob"	
lastName	String	25			Y		"McKenzie"	
phone	NUMBER	11			Y	2000000000-9999999999	9055551212	Assuming North American phone number
balanceOwing	NUMBER	9,2	0.00		Y	-10000 to 10000	345.65	Monetary value
DOB	DATE				Y		1972/05/16	Date of Birth (YYYY/MM/DD)

Sample creation script

```
-- USER 1--
CREATE TABLE BOOKS (
    bookId NUMBER(5) PRIMARY KEY,
    bookName VARCHAR(50) NOT NULL,
    author VARCHAR(50) NOT NULL,
    genre VARCHAR(30) NOT NULL,
    costPrice NUMBER(4,2) NOT NULL,
    sellingPrice NUMBER(4,2) NOT NULL,
    CONSTRAINT genre_chk FOREIGN KEY (genre) REFERENCES
    GENRES(genre)
);
```

Sample data script

```
-- USER-1 --
INSERT ALL
    INTO LOCATIONS VALUES (001, '00312-21312', '50 Garfield City ', 'Dholakpur', 'Rajkot',
    'Bharat', '152001')
    INTO LOCATIONS VALUES (002, '4200-121212', '13 Laura South', 'Shewtia', NULL, 'Peru',
    '12976A')
    INTO LOCATIONS VALUES (003, '4011-40203', '15 Solah Strah', 'Ahmedabad', 'Gujarat',
    'India', '36098')
    INTO LOCATIONS VALUES (004, '0420-32301', '1313 Tera Suroor', 'Em Ran', 'Hashmi',
    'Japan', '9238JX')
    INTO LOCATIONS VALUES (005, '2211-23022', '20 Sin Cos Tan', 'Trigono', 'Ganit', 'Italy',
    '190JI')
```

Sample SQL REPORTS

```
SELECT CHECKNUMBER AS "Check", AMOUNT as "PaymentAmount"
FROM RETAILPAYMENTS
WHERE customernumber >140 and amount >5000
```

	Check	PaymentAmount
1	AU364101	36251.03
2	DB583216	36140.38
3	DL460618	46895.48
4	HJ32686	59830.55
5	ID10962	116208.4
6	IN446258	65071.26
7	JE105477	120166.58
8	JN355280	49539.37