DAMG6210 - Data Management and Database Design

Homework 09

1.

```
CREATE PROCEDURE GetEmployeesByDepartment
   @DepartmentName VARCHAR(25)
AS
BEGIN
   SELECT
      e.emp_no AS EmployeeID,
      e.emp_fname AS FirstName,
      e.emp_lname AS LastName,
      e.dept_no AS DepartmentID,
      d.dept_name AS DepartmentName,
      d.location AS City
   FROM employee e
   JOIN department d ON e.dept_no = d.dept_no
   WHERE d.dept_name = @DepartmentName;
END;
GO
```

To Execute Stored Procedure:

```
EXEC GetEmployeesByDepartment @DepartmentName = 'IT';
GO
```

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Run | Cancel | Disconnect | Change | Database: sample2 | Estimated Plan | Enable Actual Plan | Parse

```
248  --Assignment 9
249  CREATE PROCEDURE GetEmployeesByDepartment
250      @DepartmentName VARCHAR(25)
251  AS
252  BEGIN
253      SELECT
254          e.emp_no AS EmployeeID,
255          e.emp_fname AS FirstName,
256          e.emp_lname AS LastName,
257          e.dept_no AS DepartmentID,
258          d.dept_name AS DepartmentName,
259          d.location AS City
260      FROM employee e
261      JOIN department d ON e.dept_no = d.dept_no
262      WHERE d.dept_name = @DepartmentName;
263  END;
264  GO
265
266  EXEC GetEmployeesByDepartment @DepartmentName = 'IT';
267  GO
268
269
270
```

Results | Messages

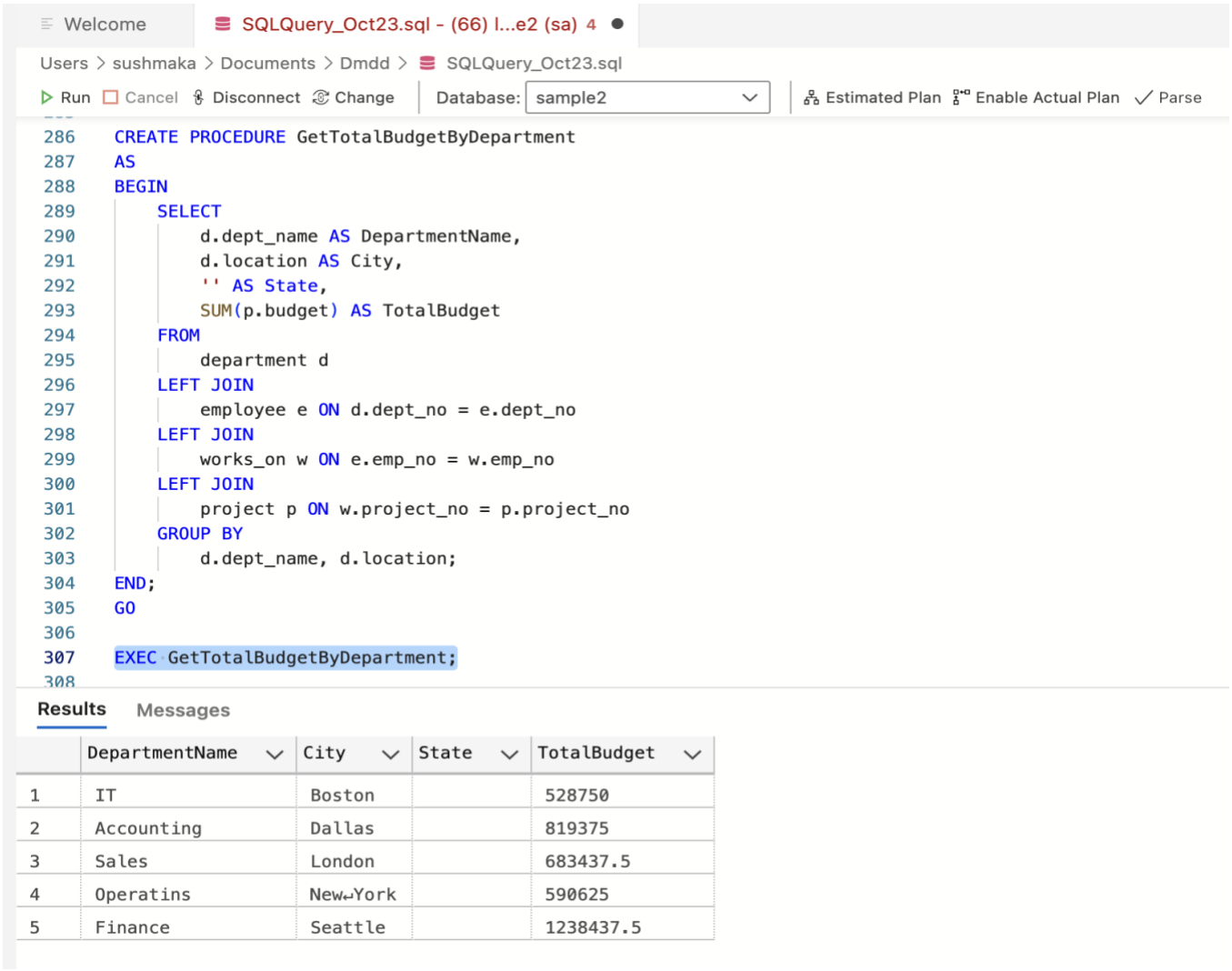
	EmployeeID	FirstName	LastName	DepartmentID	DepartmentName	City
1	15002	Peter	McDonalds	D3	IT	Boston
2	15004	Rohit	Joshi	D3	IT	Boston
3	15008	Lionell	Messi	D3	IT	Boston

2.

```
CREATE PROCEDURE GetTotalBudgetByDepartment
AS
BEGIN
   SELECT
      d.dept_name AS DepartmentName,
      d.location AS City,
      '' AS State,
      SUM(p.budget) AS TotalBudget
   FROM
      department d
   LEFT JOIN
      employee e ON d.dept_no = e.dept_no
   LEFT JOIN
      works_on w ON e.emp_no = w.emp_no
   LEFT JOIN
      project p ON w.project_no = p.project_no
   GROUP BY
      d.dept_name, d.location;
END;
GO
```

To Execute Stored Procedure:

```
EXEC GetTotalBudgetByDepartment;
GO
```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Database: sample2
Estimated Plan
Enable Actual Plan
Parse
286 CREATE PROCEDURE GetTotalBudgetByDepartment
287 AS
288 BEGIN
289 SELECT
290 d.dept_name AS DepartmentName,
291 d.location AS City,
292 '' AS State,
293 SUM(p.budget) AS TotalBudget
294 FROM
295 department d
296 LEFT JOIN
297 employee e ON d.dept_no = e.dept_no
298 LEFT JOIN
299 works_on w ON e.emp_no = w.emp_no
300 LEFT JOIN
301 project p ON w.project_no = p.project_no
302 GROUP BY
303 d.dept_name, d.location;
304 END;
305 GO
306
307 EXEC GetTotalBudgetByDepartment;
308
Results
Messages
DepartmentName
City
State
TotalBudget
1 IT Boston 528750
2 Accounting Dallas 819375
3 Sales London 683437.5
4 Operatins New↵York 590625
5 Finance Seattle 1238437.5

3.

```
CREATE PROCEDURE GetEmployeesByProject
   @ProjectName VARCHAR(50)
AS
BEGIN
   SELECT
      e.emp_fname AS FirstName,
      e.emp_lname AS LastName,
      d.dept_name AS DepartmentName,
      w.job AS JobRole,
      w.enter_date AS EntryDate
   FROM
      employee e
   INNER JOIN
      works_on w ON e.emp_no = w.emp_no
   INNER JOIN
      project p ON w.project_no = p.project_no
   INNER JOIN
      department d ON e.dept_no = d.dept_no
   WHERE
      p.project_name = @ProjectName;
END;
GO
```

To Execute Stored Procedure:

```
EXEC GetEmployeesByProject @ProjectName = 'ERP System';
GO
```

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```
311  CREATE PROCEDURE GetEmployeesByProject
312      @ProjectName VARCHAR(50)
313  AS
314  BEGIN
315      SELECT
316          e.emp_fname AS FirstName,
317          e.emp_lname AS LastName,
318          d.dept_name AS DepartmentName,
319          w.job AS JobRole,
320          w.enter_date AS EntryDate
321      FROM
322          employee e
323      INNER JOIN
324          works_on w ON e.emp_no = w.emp_no
325      INNER JOIN
326          project p ON w.project_no = p.project_no
327      INNER JOIN
328          department d ON e.dept_no = d.dept_no
329      WHERE
330          p.project_name = @ProjectName;
331  END;
332  GO
333
334  EXEC GetEmployeesByProject @ProjectName = 'CRM system';
335  GO
336
```

Results | Messages

	FirstName	LastName	DepartmentName	JobRole	EntryDate
1	Mark	Kelter	Finance	*NULL*	2019-01-04
2	Lionell	Messi	IT	DBA	2023-01-03

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```
310
311  CREATE PROCEDURE GetEmployeesByProject
312      @ProjectName VARCHAR(50)
313  AS
314  BEGIN
315      SELECT
316          e.emp_fname AS FirstName,
317          e.emp_lname AS LastName,
318          d.dept_name AS DepartmentName,
319          w.job AS JobRole,
320          w.enter_date AS EntryDate
321      FROM
322          employee e
323      INNER JOIN
324          works_on w ON e.emp_no = w.emp_no
325      INNER JOIN
326          project p ON w.project_no = p.project_no
327      INNER JOIN
328          department d ON e.dept_no = d.dept_no
329      WHERE
330          p.project_name = @ProjectName;
331  END;
332  GO
333
334  EXEC GetEmployeesByProject @ProjectName = 'ERP System';
335  GO
```

Results Messages

	FirstName	LastName	DepartmentName	JobRole	EntryDate
1	Rohit	Joshi	IT	Network Admin	2021-01-03
2	Matthew	Hoyer	Accounting	Financial Analyst	2024-01-07

4.

```
CREATE PROCEDURE GetEmployeeCountByDepartment
AS
BEGIN
   WITH EmployeeCount AS (
      SELECT
         dept_no,
         COUNT(emp_no) AS NumberOfEmployees
      FROM
         employee
      GROUP BY
         dept_no
   ),
   DepartmentBudget AS (
      SELECT
         d.dept_no,
         d.dept_name AS DepartmentName,
         SUM(p.budget) AS TotalDepartmentBudget
      FROM
         department AS d
      LEFT JOIN employee AS e ON d.dept_no = e.dept_no
      LEFT JOIN works_on AS w ON e.emp_no = w.emp_no
      LEFT JOIN project AS p ON w.project_no = p.project_no
      GROUP BY
         d.dept_no, d.dept_name
   )
   SELECT
      db.DepartmentName,
      ISNULL(ec.NumberOfEmployees, 0) AS EmployeeCount,
      ISNULL(db.TotalDepartmentBudget, 0) AS TotalBudget
   FROM
      DepartmentBudget AS db
   LEFT JOIN
      EmployeeCount AS ec ON db.dept_no = ec.dept_no;
END;
GO
```

To Execute Stored Procedure:

```
EXEC GetEmployeeCountByDepartment;
GO
```

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Run | Cancel | Disconnect | Change | Database: sample2

```
339
340 CREATE PROCEDURE GetEmployeeCountByDepartment
341 AS
342 BEGIN
343     WITH EmployeeCount AS (
344         SELECT
345             dept_no,
346             COUNT(emp_no) AS NumberOfEmployees
347         FROM
348             employee
349         GROUP BY
350             dept_no
351     ),
352     DepartmentBudget AS (
353         SELECT
354             d.dept_no,
355             d.dept_name AS DepartmentName,
356             SUM(p.budget) AS TotalDepartmentBudget
357         FROM
358             department AS d
359         LEFT JOIN employee AS e ON d.dept_no = e.dept_no
360         LEFT JOIN works_on AS w ON e.emp_no = w.emp_no
361         LEFT JOIN project AS p ON w.project_no = p.project_no
362         GROUP BY
363             d.dept_no, d.dept_name
364     )
365     SELECT
366         db.DepartmentName,
367         ISNULL(ec.NumberOfEmployees, 0) AS EmployeeCount,
368         ISNULL(db.TotalDepartmentBudget, 0) AS TotalBudget
369     FROM
370         DepartmentBudget AS db
371     LEFT JOIN
372         EmployeeCount AS ec ON db.dept_no = ec.dept_no;
373 END;
374
375
376
```

Messages

8:14:18 PM Started executing query at Line 340
Commands completed successfully.
Total execution time: 00:00:00.019

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Run | Cancel | Disconnect | Change | Database: sample2

```
361         LEFT JOIN project AS p ON w.project_no = p.project_no
362         GROUP BY
363             d.dept_no, d.dept_name
364     )
365     SELECT
366         db.DepartmentName,
367         ISNULL(ec.NumberOfEmployees, 0) AS EmployeeCount,
368         ISNULL(db.TotalDepartmentBudget, 0) AS TotalBudget
369     FROM
370         DepartmentBudget AS db
371     LEFT JOIN
372         EmployeeCount AS ec ON db.dept_no = ec.dept_no;
373 END;
374 GO
375
376 EXEC GetEmployeeCountByDepartment;
377
378
379
380
```

Results | Messages

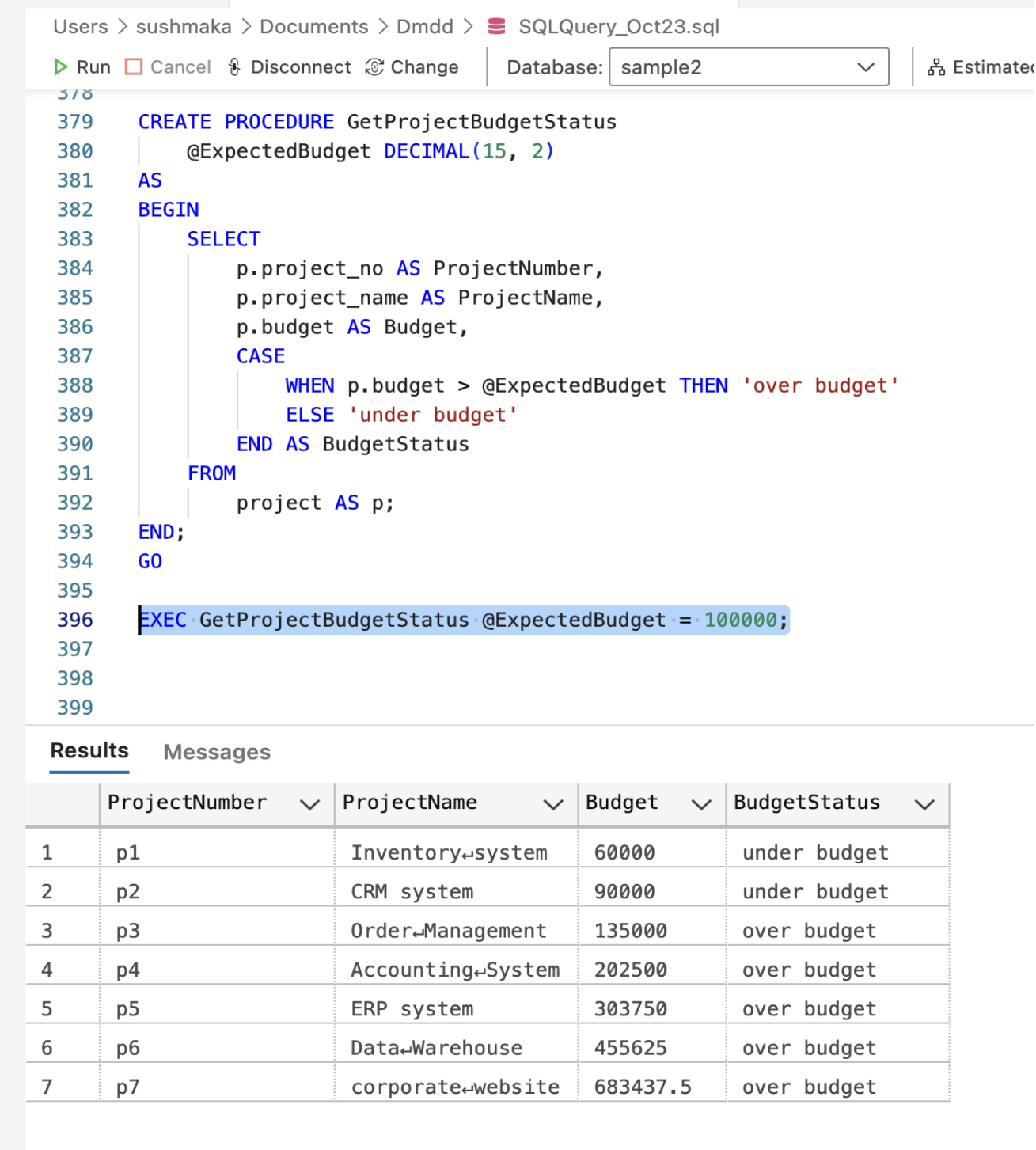
	DepartmentName	EmployeeCount	TotalBudget
1	Accounting	2	819375
2	Finance	4	1238437.5
3	IT	3	528750
4	Operatins	2	590625
5	Sales	1	683437.5

5.

```
CREATE PROCEDURE GetProjectBudgetStatus
   @ExpectedBudget DECIMAL(15, 2)
AS
BEGIN
   SELECT
      p.project_no AS ProjectNumber,
      p.project_name AS ProjectName,
      p.budget AS Budget,
      CASE
         WHEN p.budget > @ExpectedBudget THEN 'over budget'
         ELSE 'under budget'
      END AS BudgetStatus
   FROM
      project AS p;
END;
GO
```

To Execute Stored Procedure:

```
EXEC GetProjectBudgetStatus @ExpectedBudget = 100000;
```



References

Hoffer, J. A., Ramesh, V., & Topi, H. (2016). *Modern database management* (13th ed.). Pearson.