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DATABASE SYSTEMS LAB
L51 + L52

EXERCISE 9 AND 10

PL/SQL Iterations, Subprograms and Cursors

LIVESQL LINKS:

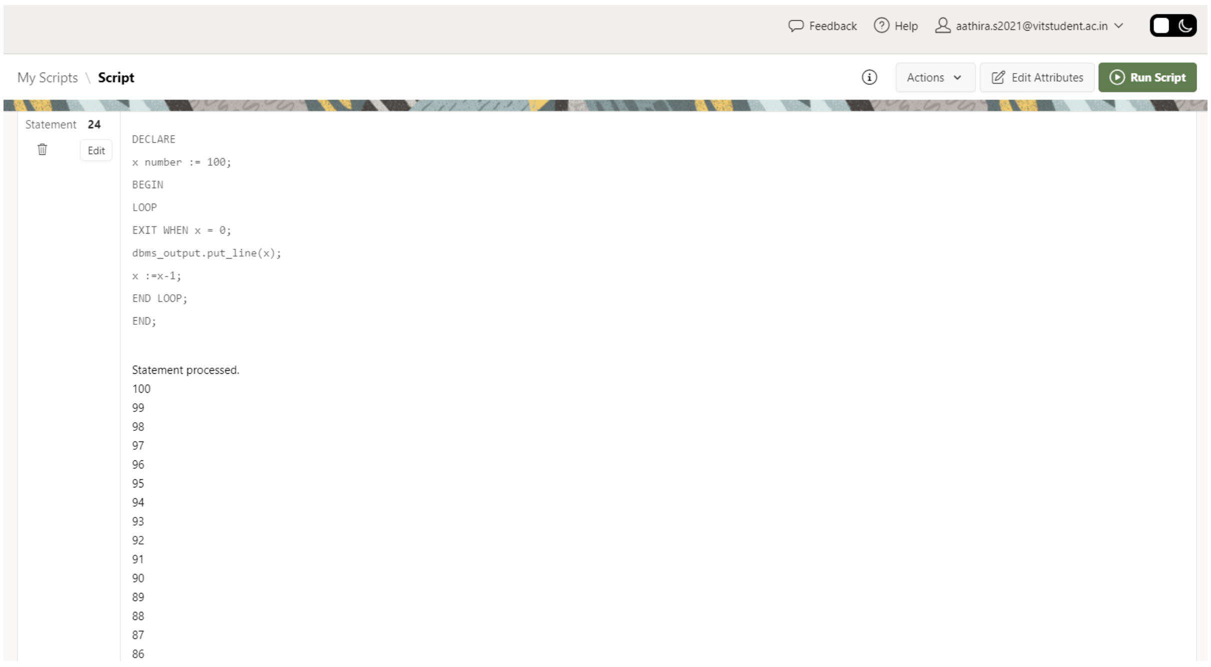
Exercise 9 & 10: https://livesql.oracle.com/apex/livesql/s/bfv4b5ttuh2s2ajsp0zd4yuk

Exercise 9

Aim: To understand the concepts of Iterations and Subprogram (Procedures and Functions)

Iterations (outcome: c)

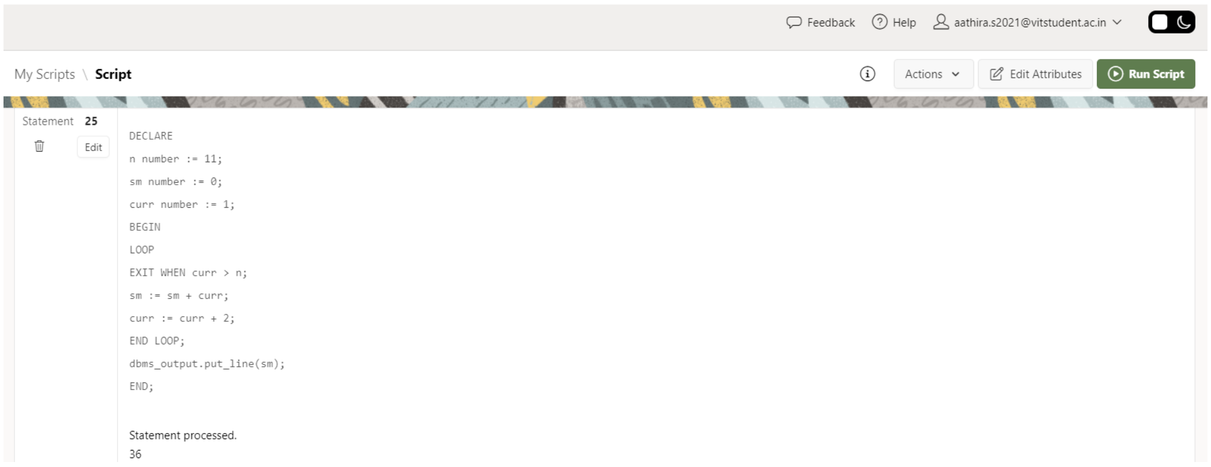
1. Write a PL/SQL code to print the numbers in reverse order from 100 to 1.



```
DECLARE
x number := 100;
BEGIN
LOOP
EXIT WHEN x = 0;
dbms_output.put_line(x);
x :=x-1;
END LOOP;
END;
```

```
Statement processed.
100
99
98
97
96
95
94
93
92
91
90
89
88
87
86
```

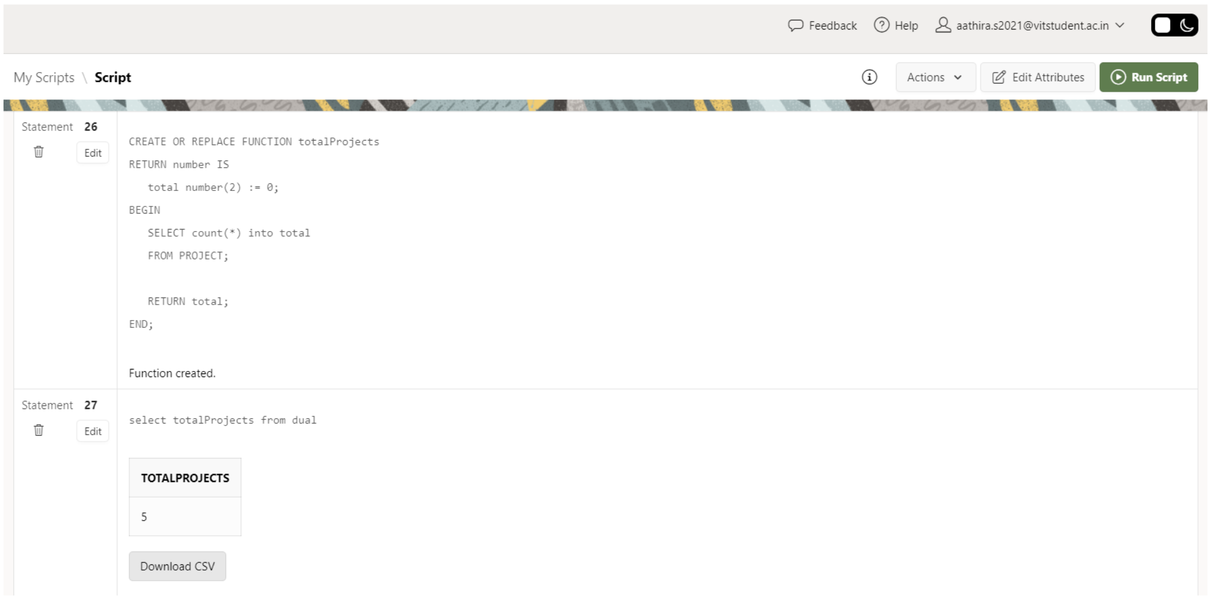
2. Create a PL/SQL block to find the sum of series 1+3+5+……+n.



```
DECLARE
n number := 11;
sm number := 0;
curr number := 1;
BEGIN
LOOP
EXIT WHEN curr > n;
sm := sm + curr;
curr := curr + 2;
END LOOP;
dbms_output.put_line(sm);
END;

Statement processed.
36
```

Functions (outcome: m)

3. Write a function to give the number of rows in the table.

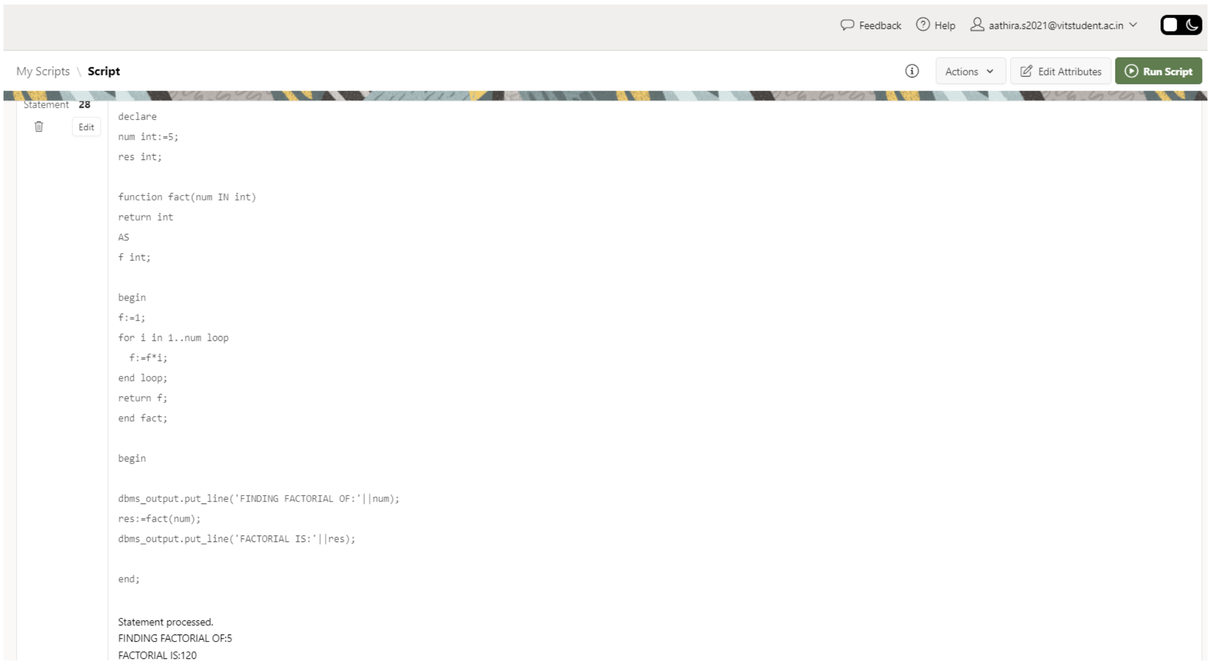


```
CREATE OR REPLACE FUNCTION totalProjects
RETURN number IS
   total number(2) := 0;
BEGIN
   SELECT count(*) into total
   FROM PROJECT;

   RETURN total;
END;

Function created.
```

```
select totalProjects from dual
```

TOTALPROJECTS
5

4. Write a PL/SQL to find the factorial of the given number using function.

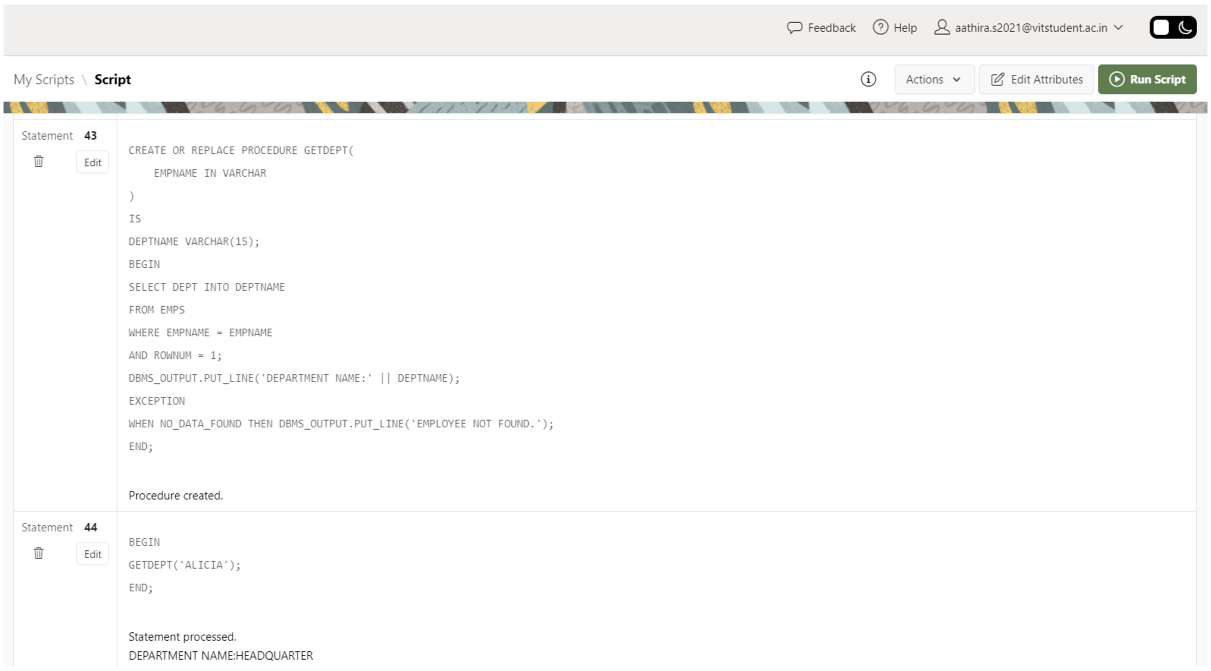


```
declare
num int:=5;
res int;

function fact(num IN int)
return int
AS
f int;

begin
f:=1;
for i in 1..num loop
  f:=f*i;
end loop;
return f;
end fact;

begin

dbms_output.put_line('FINDING FACTORIAL OF:'||num);
res:=fact(num);
dbms_output.put_line('FACTORIAL IS:'||res);

end;
```

```
Statement processed.
FINDING FACTORIAL OF:5
FACTORIAL IS:120
```

Procedure

5. Write a procedure to accept an employee name and display his Department names.



```
CREATE OR REPLACE PROCEDURE GETDEPT(
    EMPNAME IN VARCHAR
)
IS
DEPTNAME VARCHAR(15);
BEGIN
SELECT DEPT INTO DEPTNAME
FROM EMPS
WHERE EMPNAME = EMPNAME
AND ROWNUM = 1;
DBMS_OUTPUT.PUT_LINE('DEPARTMENT NAME:' || DEPTNAME);
EXCEPTION
WHEN NO_DATA_FOUND THEN DBMS_OUTPUT.PUT_LINE('EMPLOYEE NOT FOUND.');
END;
```

```
Procedure created.
```

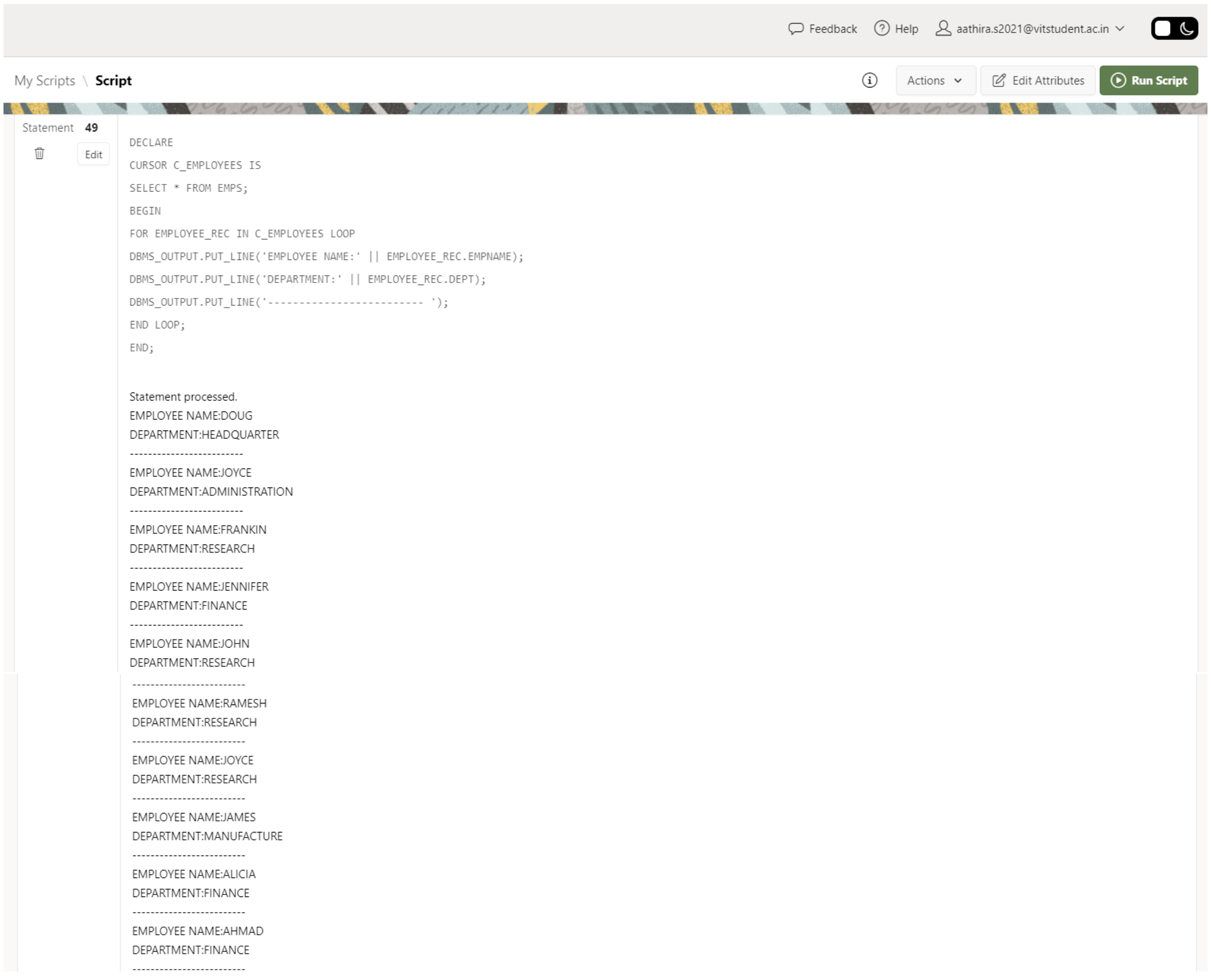
```
BEGIN
GETDEPT('ALICIA');
END;
```

```
Statement processed.
DEPARTMENT NAME:HEADQUARTER
```

Exercise 10

Aim: To understand implicit and explicit cursor in PL/SQL

1. Retrieve all the rows from the table using cursors.



```
DECLARE
CURSOR C_EMPLOYEES IS
SELECT * FROM EMPS;
BEGIN
FOR EMPLOYEE_REC IN C_EMPLOYEES LOOP
DBMS_OUTPUT.PUT_LINE('EMPLOYEE NAME:' || EMPLOYEE_REC.EMPNAME);
DBMS_OUTPUT.PUT_LINE('DEPARTMENT:' || EMPLOYEE_REC.DEPT);
DBMS_OUTPUT.PUT_LINE('------------------------ ');
END LOOP;
END;
```

```
Statement processed.
EMPLOYEE NAME:DOUG
DEPARTMENT:HEADQUARTER
------------------------
EMPLOYEE NAME:JOYCE
DEPARTMENT:ADMINISTRATION
------------------------
EMPLOYEE NAME:FRANKIN
DEPARTMENT:RESEARCH
------------------------
EMPLOYEE NAME:JENNIFER
DEPARTMENT:FINANCE
------------------------
EMPLOYEE NAME:JOHN
DEPARTMENT:RESEARCH
------------------------
EMPLOYEE NAME:RAMESH
DEPARTMENT:RESEARCH
------------------------
EMPLOYEE NAME:JOYCE
DEPARTMENT:RESEARCH
------------------------
EMPLOYEE NAME:JAMES
DEPARTMENT:MANUFACTURE
------------------------
EMPLOYEE NAME:ALICIA
DEPARTMENT:FINANCE
------------------------
EMPLOYEE NAME:AHMAD
DEPARTMENT:FINANCE
------------------------
```

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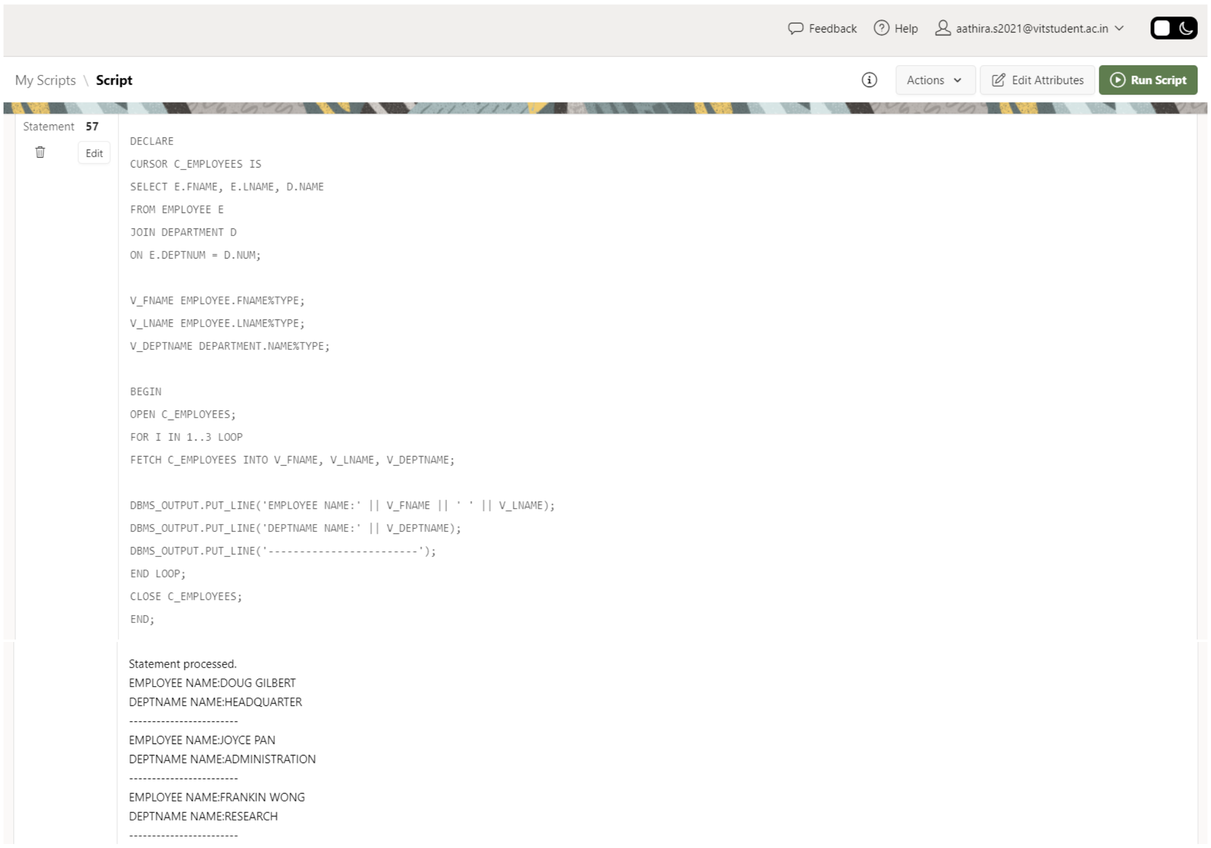
2. Write a cursor program to display few records using joins.



```
DECLARE
CURSOR C_EMPLOYEES IS
SELECT E.FNAME, E.LNAME, D.NAME
FROM EMPLOYEE E
JOIN DEPARTMENT D
ON E.DEPTNUM = D.NUM;

V_FNAME EMPLOYEE.FNAME%TYPE;
V_LNAME EMPLOYEE.LNAME%TYPE;
V_DEPTNAME DEPARTMENT.NAME%TYPE;

BEGIN
OPEN C_EMPLOYEES;
FOR I IN 1..3 LOOP
FETCH C_EMPLOYEES INTO V_FNAME, V_LNAME, V_DEPTNAME;

DBMS_OUTPUT.PUT_LINE('EMPLOYEE NAME:' || V_FNAME || ' ' || V_LNAME);
DBMS_OUTPUT.PUT_LINE('DEPTNAME NAME:' || V_DEPTNAME);
DBMS_OUTPUT.PUT_LINE('------------------------');
END LOOP;
CLOSE C_EMPLOYEES;
END;
```

```
Statement processed.
EMPLOYEE NAME:DOUG GILBERT
DEPTNAME NAME:HEADQUARTER
------------------------
EMPLOYEE NAME:JOYCE PAN
DEPTNAME NAME:ADMINISTRATION
------------------------
EMPLOYEE NAME:FRANKIN WONG
DEPTNAME NAME:RESEARCH
------------------------
```