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Practice I-1:

4.

The screenshot shows the Oracle SQL Developer interface. The left pane displays the 'Tables (Filtered)' view with the 'EMPLOYEES' table selected. The right pane shows the 'Columns' tab for the 'EMPLOYEES' table, listing 11 columns with their data types, nullability, and default values.

COLUMN_NAME	DATA_TYPE	NULLABLE	DATA_DEFAULT	COLUMN_ID	COMMENTS
EMPLOYEE_ID	NUMBER(6,0)	No	(null)	1	(null)
FIRST_NAME	VARCHAR2(20 BYTE)	Yes	(null)	2	(null)
LAST_NAME	VARCHAR2(25 BYTE)	No	(null)	3	(null)
EMAIL	VARCHAR2(25 BYTE)	No	(null)	4	(null)
PHONE_NUMBER	VARCHAR2(20 BYTE)	Yes	(null)	5	(null)
HIRE_DATE	DATE	No	(null)	6	(null)
JOB_ID	VARCHAR2(10 BYTE)	No	(null)	7	(null)
SALARY	NUMBER(8,2)	Yes	(null)	8	(null)
COMMISSION_PCT	NUMBER(2,2)	Yes	(null)	9	(null)
MANAGER_ID	NUMBER(6,0)	Yes	(null)	10	(null)
DEPARTMENT_ID	NUMBER(4,0)	Yes	(null)	11	(null)

5.

The screenshot shows the Oracle SQL Developer interface with the 'EMPLOYEES' table selected. The right pane displays the 'Data' tab, showing a list of 31 employee records. The left pane shows the 'Tables (Filtered)' view with the 'EMPLOYEES' table selected.

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	COMMISSION_PCT	MANAGER_ID	DEPARTMENT_ID
1	100	Steven	King	SKING	515.123.4567	17-06-87	AD_PRES	24000	(null)	90
2	101	Neena	Kochhar	NKOCHHAR	515.123.4568	21-09-89	AD_VP	17000	(null)	100
3	102	Lex	De Haan	LDEHAAN	515.123.4569	13-01-93	AD_VP	17000	(null)	100
4	103	Alexander	Hunold	AHUNOLD	590.423.4567	03-01-90	IT_PROG	9000	(null)	102
5	104	Bruce	Ernst	BERNST	590.423.4568	21-05-91	IT_PROG	6000	(null)	103
6	105	David	Austin	DAUSTIN	590.423.4569	25-06-97	IT_PROG	4800	(null)	103
7	106	Valli	Pataballa	VPATABAL	590.423.4560	05-02-98	IT_PROG	4800	(null)	103
8	107	Diana	Lorentz	DLORENTZ	590.423.5567	07-02-99	IT_PROG	4200	(null)	103
9	108	Nancy	Greenberg	NGREENBE	515.124.4569	17-08-94	FI_MGR	12000	(null)	101
10	109	Daniel	Faviet	DFAVIET	515.124.4169	16-08-94	FI_ACCOUNT	9000	(null)	108
11	110	John	Chen	JCHEN	515.124.4269	28-09-97	FI_ACCOUNT	8200	(null)	108
12	111	Ismail	Sciarra	ISCIARRA	515.124.4369	30-09-97	FI_ACCOUNT	7700	(null)	108
13	112	Jose Manuel	Urman	JMURMAN	515.124.4469	07-03-98	FI_ACCOUNT	7800	(null)	108
14	113	Luis	Popp	LPOPP	515.124.4567	07-12-99	FI_ACCOUNT	6900	(null)	108
15	114	Den	Raphaely	DRAPHEAL	515.127.4561	07-12-94	PU_MAN	11000	(null)	100
16	115	Alexander	Khoo	AKHOO	515.127.4562	18-05-95	PU_CLERK	3100	(null)	114
17	116	Shelli	Baida	SBAIDA	515.127.4563	24-12-97	PU_CLERK	2900	(null)	114
18	117	Sigal	Tobias	STOBIAS	515.127.4564	24-07-97	PU_CLERK	2800	(null)	114
19	118	Guy	Himuro	GHIMURO	515.127.4565	15-11-98	PU_CLERK	2600	(null)	114
20	119	Karen	Colmenares	KCOLMENA	515.127.4566	10-08-99	PU_CLERK	2500	(null)	114
21	120	Matthew	Weiss	MWEISS	650.123.1234	18-07-96	ST_MAN	8000	(null)	100
22	121	Adam	Fripp	AFRIPP	650.123.2234	10-04-97	ST_MAN	8200	(null)	100
23	122	Payam	Kaufling	PKAUFLIN	650.123.3234	01-05-95	ST_MAN	7900	(null)	100
24	123	Shanta	Vollman	SVOLLMAN	650.123.4234	10-10-97	ST_MAN	6500	(null)	100
25	124	Kevin	Mourgos	KMOURGOS	650.123.5234	16-11-99	ST_MAN	5800	(null)	100
26	125	Julia	Nayer	JNAYER	650.124.1214	16-07-97	ST_CLERK	3200	(null)	120
27	126	Irene	Mikkilineni	IMIKKILI	650.124.1224	28-09-98	ST_CLERK	2700	(null)	120
28	127	James	Landry	JLANDRY	650.124.1334	14-01-99	ST_CLERK	2400	(null)	120
29	128	Steven	Markle	SMARKLE	650.124.1434	08-03-00	ST_CLERK	2200	(null)	120
30	129	Laura	Bissot	LBISSOT	650.124.5234	20-08-97	ST_CLERK	3300	(null)	121
31	130	Mozhe	Atkinson	MAIKINSO	650.124.6234	30-10-97	ST_CLERK	2800	(null)	121

6. F9:

Oracle SQL Developer : C:\Users\ankur\AppData\Roaming\SQL Developer\Oracle Database Programming using PLSQL\practice1i.sql

File Edit View Navigate Run Source Team Tools Window Help

Connections

Oracle Connections

Ankur Prajapati

Tables (Filtered)

- COUNTRIES
- DEPARTMENTS
- EMPLOYEES
 - EMPLOYEE_ID
 - FIRST_NAME
 - LAST_NAME
 - EMAIL
 - PHONE_NUMBER
 - HIRE_DATE
 - JOB_ID
 - SALARY
 - COMMISSION_PCT
 - MANAGER_ID
 - DEPARTMENT_ID
 - JOB_HISTORY

Reports

All Reports

- Analytic View Reports
- Data Dictionary Reports
- Data Modeler Reports
- OLAP Reports
- TimesTen Reports
- User Defined Reports

Worksheet

Query Builder

```
75
76 /*-----Lab Assignment 1-----*/
77
78 SELECT * FROM employees;
79
80 SELECT last_name, salary FROM employees WHERE salary > 10000;
81
82
```

Script Output x Query Result x

SQL | All Rows Fetched: 15 in 0.005 seconds

	LAST_NAME	SALARY
1	King	24000
2	Kochhar	17000
3	De Haan	17000
4	Greenberg	12000
5	Raphaely	11000
6	Russell	14000
7	Partners	13500
8	Errazuriz	12000
9	Cambrault	11000
10	Zlotkey	10500
11	Vishney	10500
12	Ozer	11500
13	Abel	11000
14	Hartstein	13000
15	Higgins	12000

F5:

The screenshot shows the Oracle SQL Developer interface. The left pane displays the 'Connections' tree with 'Ankur Prajapati' selected. The 'EMPLOYEES' table is expanded, showing columns: EMPLOYEE_ID, FIRST_NAME, LAST_NAME, EMAIL, PHONE_NUMBER, HIRE_DATE, JOB_ID, SALARY, COMMISSION_PCT, MANAGER_ID, DEPARTMENT_ID, and JOB_HISTORY. The main workspace shows a SQL worksheet with the following query:

```

74
75
76 /*-----Lab Assignment 1-----*/
77
78 SELECT * FROM employees;
79
80 SELECT last_name, salary FROM employees WHERE salary > 10000;
81

```

The 'Query Result' pane shows the output of the query, displaying 15 rows selected. The results are as follows:

LAST_NAME	SALARY
King	24000
Kochhar	17000
De Haan	17000
Greenberg	12000
Raphaely	11000
Russell	14000
Partners	13500
Erazusiz	12000
Cambault	11000
Zlotkey	10500
Vishney	10500
Ozer	11500
Abel	11000
Hartstein	13000
Higgins	12000

15 rows selected.

Practice 1-4:

The screenshot shows the 'Preferences' dialog box in Oracle SQL Developer. The 'Environment' tab is selected. The left pane lists various preference categories, and the right pane shows the settings for the 'Environment' category.

Environment

- ☐ Save All When Deactivating or Exiting
- ☒ Automatically Reload Externally Modified Files
 - ☒ Silently Reload When File Is Unmodified
- ☒ Check for Externally Modified Files on Startup

Undo Level: 50

Navigation Level: 20

Look and Feel: Oracle

Line Terminator: Platform Default

Applies to new files only

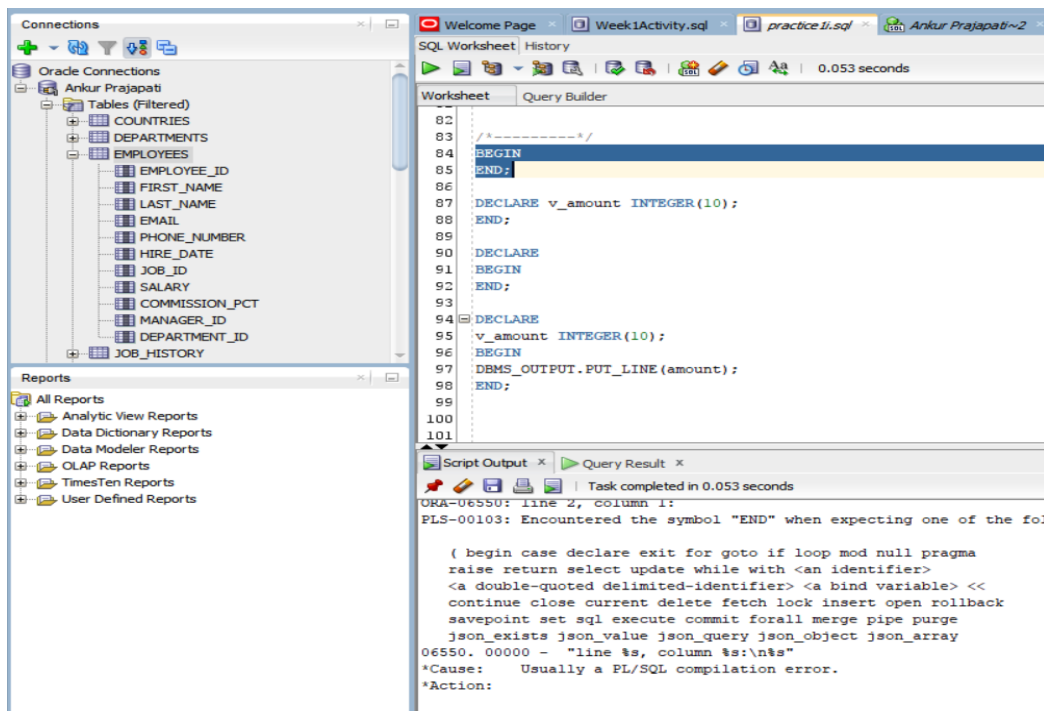
Encoding: Cp1252

Reset Skipped Messages

Buttons: Help, OK, Cancel

Practice 1-5: Anonymous Block Code.

1.a It doesn't execute successfully.



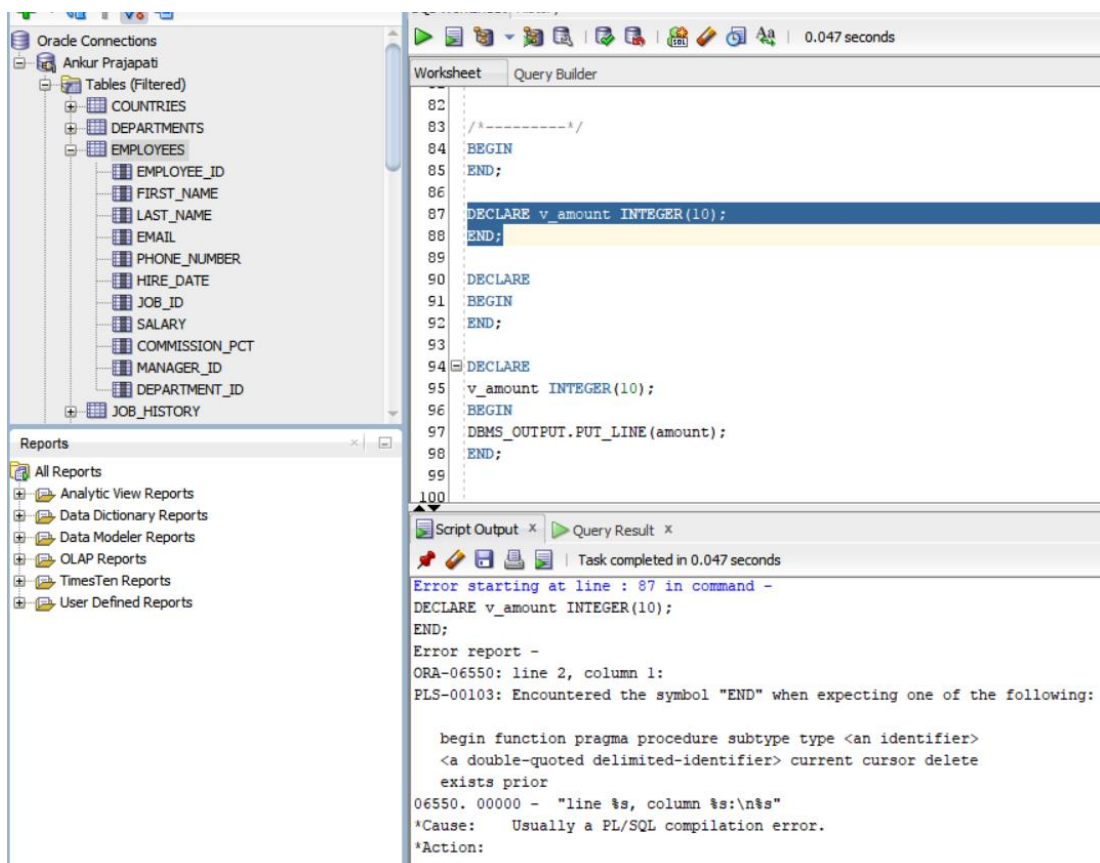
The screenshot shows the Oracle SQL Developer interface. On the left, the 'Connections' pane shows 'Ankur Prajapati' connected to an Oracle database. The 'Tables (Filtered)' pane shows a list of tables including COUNTRIES, DEPARTMENTS, EMPLOYEES, and JOB_HISTORY. The 'Reports' pane shows a list of reports including All Reports, Analytic View Reports, Data Dictionary Reports, Data Modeler Reports, OLAP Reports, TimesTen Reports, and User Defined Reports. The main window displays a SQL Worksheet with the following code:

```
82  
83 /*****  
84 BEGIN  
85 END;  
86  
87 DECLARE v_amount INTEGER(10);  
88 END;  
89  
90 DECLARE  
91 BEGIN  
92 END;  
93  
94 DECLARE  
95 v_amount INTEGER(10);  
96 BEGIN  
97 DBMS_OUTPUT.PUT_LINE(amount);  
98 END;  
99  
100  
101
```

The 'Script Output' pane shows the following error message:

```
ORA-06550: line 2, column 1:  
PLS-00103: Encountered the symbol "END" when expecting one of the fol  
  
( begin case declare exit for goto if loop mod null pragma  
raise return select update while with <an identifier>  
<a double-quoted delimited-identifier> <a bind variable> <<  
continue close current delete fetch lock insert open rollback  
savepoint set sql execute commit forall merge pipe purge  
json_exists json_value json_query json_object json_array  
06550. 00000 - "line %s, column %s:%n%s"  
*Cause: Usually a PL/SQL compilation error.  
*Action:
```

1.b It doesn't execute successfully.



The screenshot shows the Oracle SQL Developer interface. On the left, the 'Connections' pane shows 'Ankur Prajapati' connected to an Oracle database. The 'Tables (Filtered)' pane shows a list of tables including COUNTRIES, DEPARTMENTS, EMPLOYEES, and JOB_HISTORY. The 'Reports' pane shows a list of reports including All Reports, Analytic View Reports, Data Dictionary Reports, Data Modeler Reports, OLAP Reports, TimesTen Reports, and User Defined Reports. The main window displays a SQL Worksheet with the following code:

```
82  
83 /*****  
84 BEGIN  
85 END;  
86  
87 DECLARE v_amount INTEGER(10);  
88 END;  
89  
90 DECLARE  
91 BEGIN  
92 END;  
93  
94 DECLARE  
95 v_amount INTEGER(10);  
96 BEGIN  
97 DBMS_OUTPUT.PUT_LINE(amount);  
98 END;  
99  
100
```

The 'Script Output' pane shows the following error message:

```
Error starting at line : 87 in command -  
DECLARE v_amount INTEGER(10);  
END;  
Error report -  
ORA-06550: line 2, column 1:  
PLS-00103: Encountered the symbol "END" when expecting one of the following:  
  
begin function pragma procedure subtype type <an identifier>  
<a double-quoted delimited-identifier> current cursor delete  
exists prior  
06550. 00000 - "line %s, column %s:%n%s"  
*Cause: Usually a PL/SQL compilation error.  
*Action:
```

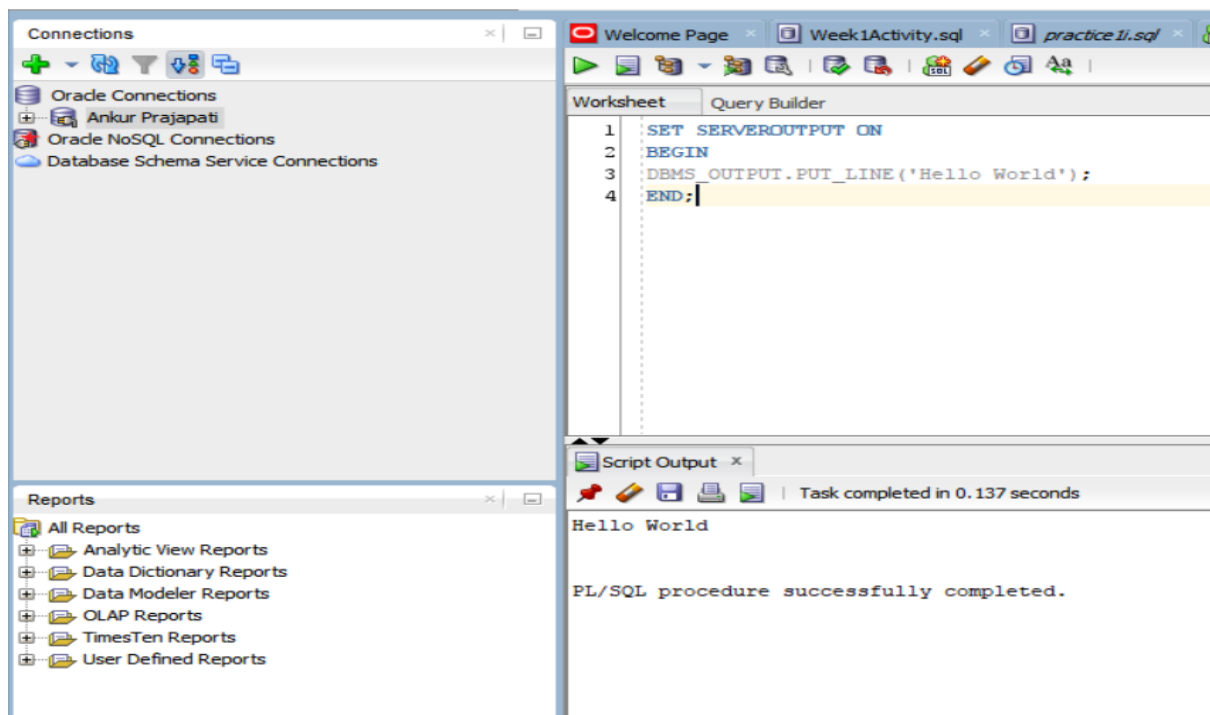
1.c It doesn't execute successfully.

The screenshot shows the Oracle SQL Developer interface. On the left, the 'Connections' pane shows a connection to 'Ankur Prajapati'. Below it, the 'Tables (Filtered)' pane lists tables including COUNTRIES, DEPARTMENTS, EMPLOYEES, and JOB_HISTORY. The 'Reports' pane is also visible. The main window displays a PL/SQL script in the 'Worksheet' tab. The script contains a DECLARE statement for a variable 'v_amount' of type INTEGER(10), followed by a BEGIN block and an END statement. The script is highlighted in blue. Below the script, the 'Script Output' pane shows an error report. The error is ORA-06550: line 3, column 1: PLS-00103: Encountered the symbol "END" when expecting one of the following: (begin case declare exit for goto if loop mod null pragma raise return select update while with <an identifier> <a double-quoted delimited-identifier> <a bind variable> << continue close current delete fetch lock insert open rollback savepoint set sql execute commit forall merge pipe purge json_exists json_value json_query json_object json_array 06550. 00000 - "line %s, column %s:\n%s" *Cause: Usually a PL/SQL compilation error. *Action:

1.d It doesn't execute successfully.

The screenshot shows the Oracle SQL Developer interface. On the left, the 'Connections' pane shows a connection to 'Ankur Prajapati'. Below it, the 'Tables (Filtered)' pane lists tables including COUNTRIES, DEPARTMENTS, EMPLOYEES, and JOB_HISTORY. The 'Reports' pane is also visible. The main window displays a PL/SQL script in the 'Worksheet' tab. The script contains a DECLARE statement for a variable 'v_amount' of type INTEGER(10), followed by a BEGIN block and an END statement. The script is highlighted in blue. Below the script, the 'Script Output' pane shows an error report. The error is ORA-06550: line 4, column 22: PLS-00201: identifier 'AMOUNT' must be declared. The error report also shows ORA-06550: line 4, column 1: PL/SQL: Statement ignored. The error report includes the following text: 06550. 00000 - "line %s, column %s:\n%s" *Cause: Usually a PL/SQL compilation error. *Action:

2. lab_01_02_soln



Practice 2: Declaring PL/SQL Variables:

1. Declaring PL/SQL Variables

- today → Valid
- last_name → Valid
- today's_date → Invalid, because today' gets ignored
- Number_of_days_in_February_this_year → Valid
- ISleap\$year → Valid
- #number → not valid, because it starts with special character
- NUMBER# → Valid
- Number1to7 → Valid

2. Identify valid and invalid variable declaration and initialization:

- number_of_copies PLS_INTEGER;

It's an invalid declaration. Because, an arithmetic, numeric, string, conversion, or constraint error occurred when we try to use it.

- PRINTER_NAME constant VARCHAR2(10)

Here we are declaring a constant and we haven't initialized it here.

- Deliver_to VARCHAR2(10) := Johnson;

It's an invalid declaration because we have to use 'Johnson'. Basically, it's a malformed.

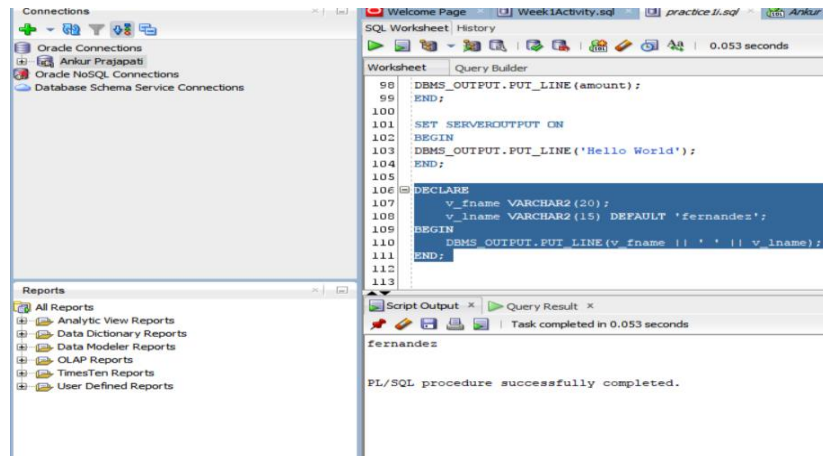
d. by_when DATE:= CURRENT_DATE+1;

It's an invalid declaration because the input data did not contain a number where a number was required by the format model.

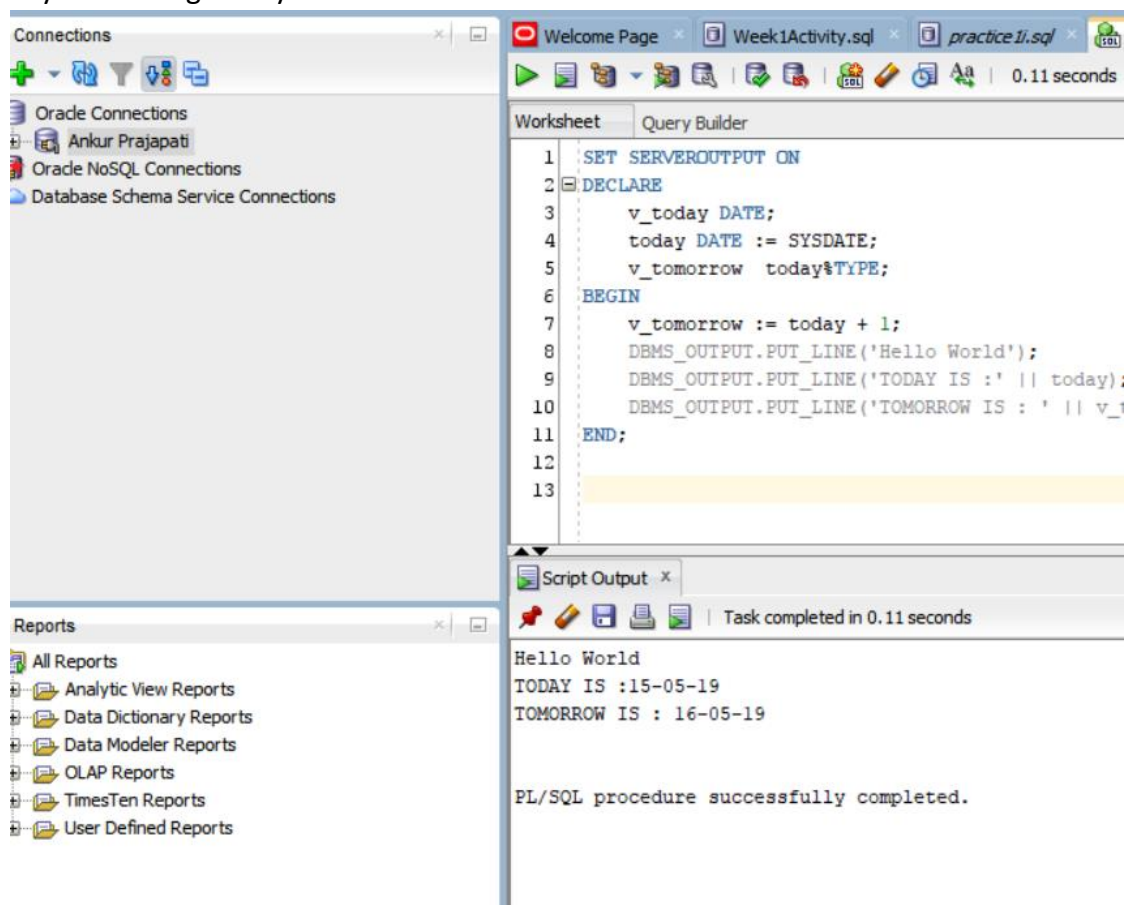
3. Examine the following anonymous block, and then select a statement from the following that is true.

True Statement:

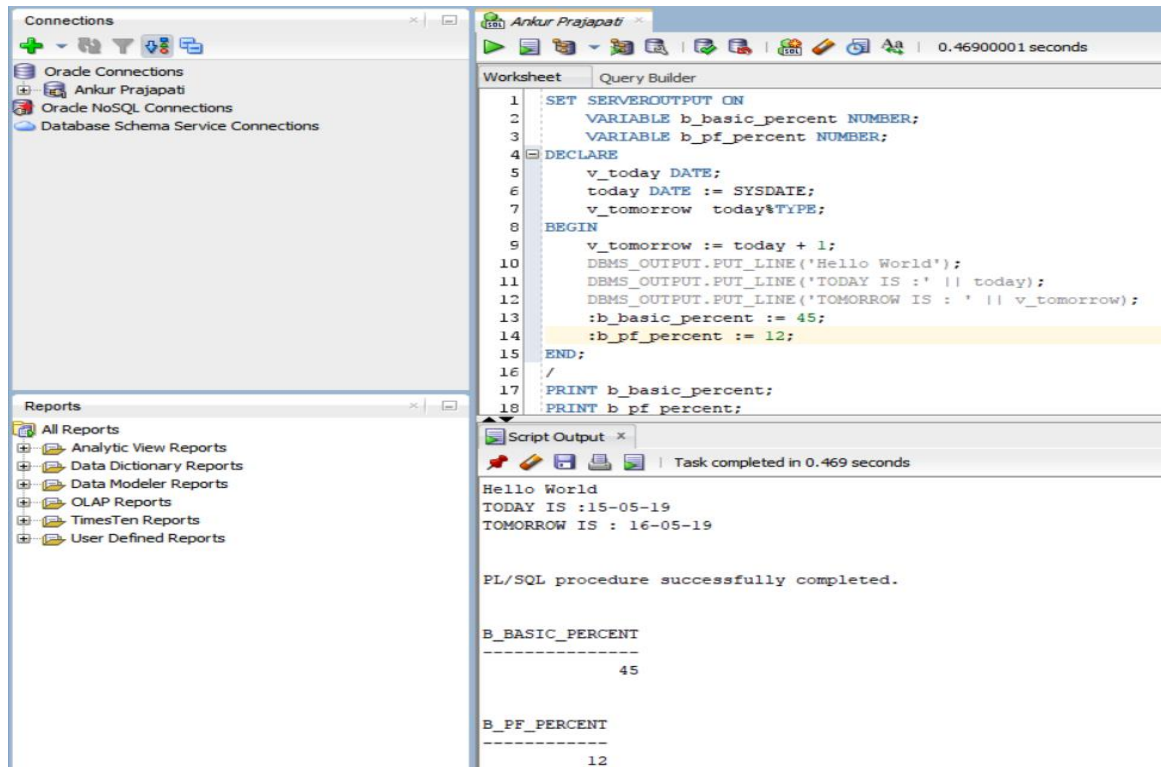
- a). The block executes successfully and prints fernandez.



4. Modify an existing anonymous block



5. lab_02_05_soln

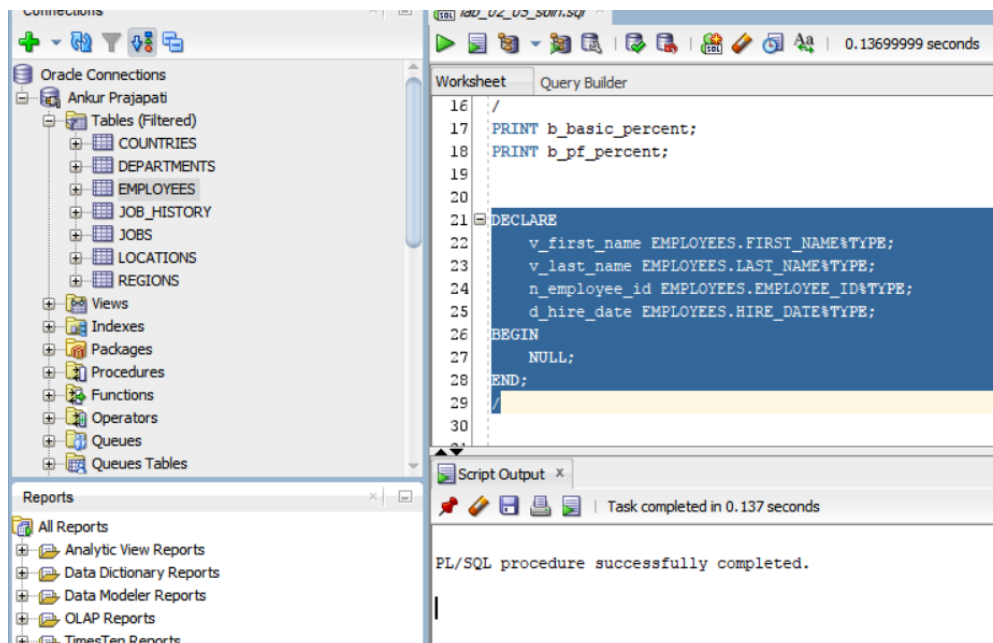


6. After Executing given block, it gives an output notifying that PL/SQL procedure successfully completed.

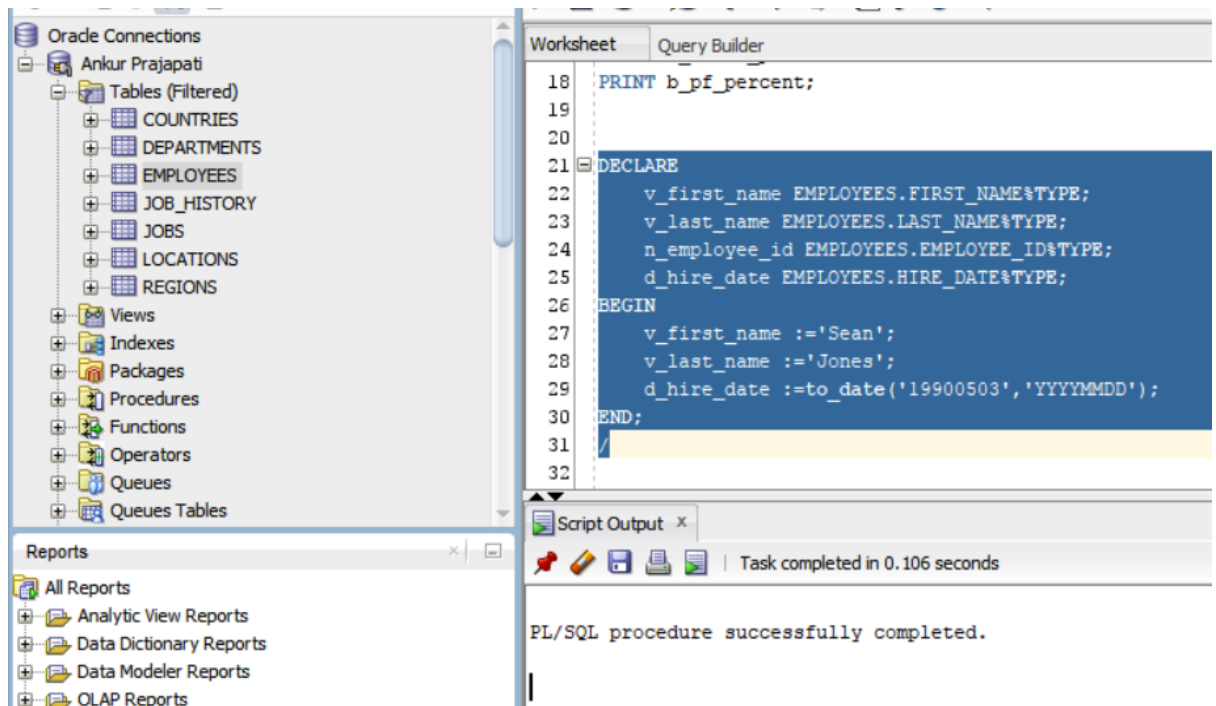
%TYPE attribute:

When we use %TYPE in every variable in declaration, the variable we declared will take a datatype of particular column associated with it. Basically, it is used here to declare a variable according to a database column definition.

Use of %TYPE in declaration of variables:



Assigning values to the variable:

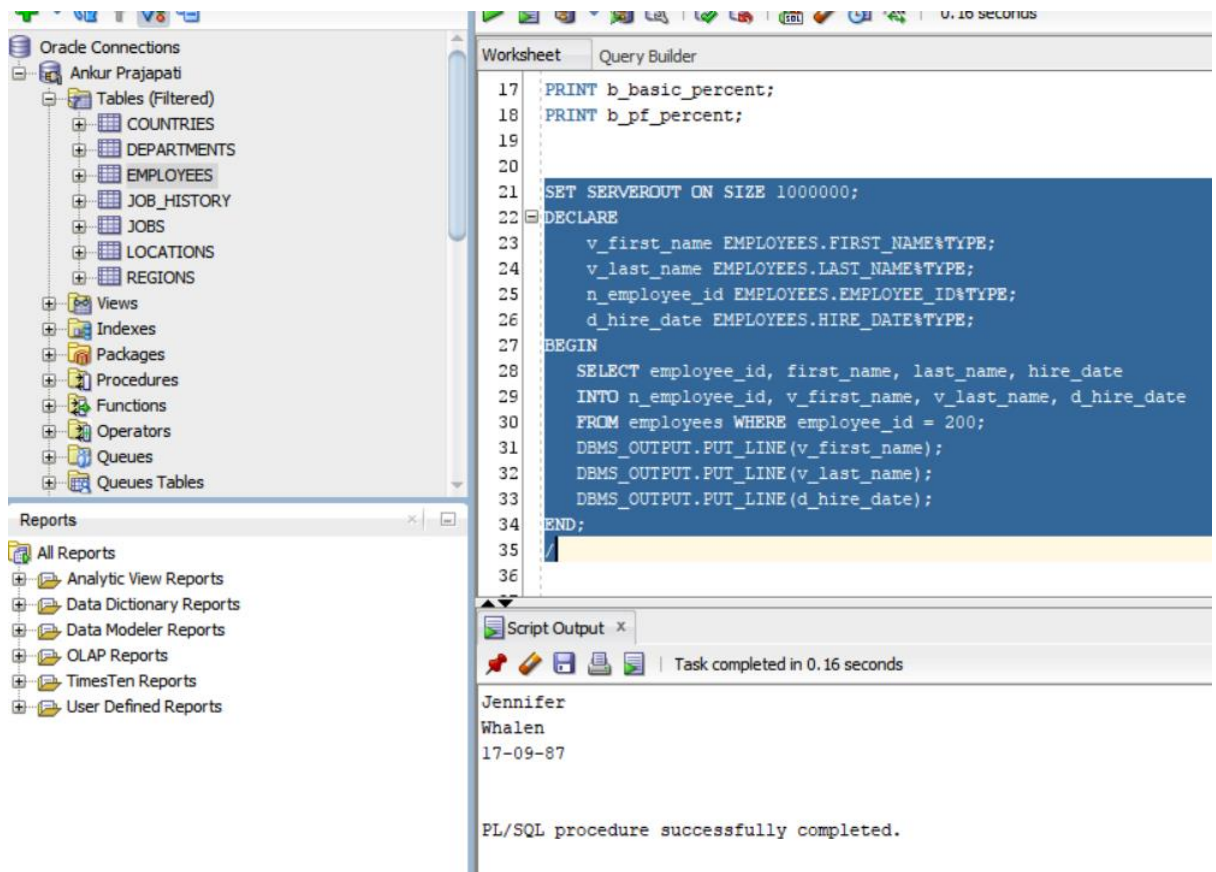


The screenshot displays the Oracle SQL Developer interface. On the left, the 'Orade Connections' tree shows the 'Ankur Prajapati' connection with a list of database objects including Tables (Filtered), Views, Indexes, Packages, Procedures, Functions, Operators, Queues, and Queues Tables. The 'EMPLOYEES' table is selected. The main window shows the 'Query Builder' tab with the following PL/SQL code:

```
18 PRINT b_pf_percent;
19
20
21 DECLARE
22     v_first_name EMPLOYEES.FIRST_NAME%TYPE;
23     v_last_name EMPLOYEES.LAST_NAME%TYPE;
24     n_employee_id EMPLOYEES.EMPLOYEE_ID%TYPE;
25     d_hire_date EMPLOYEES.HIRE_DATE%TYPE;
26 BEGIN
27     v_first_name := 'Sean';
28     v_last_name := 'Jones';
29     d_hire_date := to_date('19900503', 'YYYYMMDD');
30 END;
```

Below the code editor, the 'Script Output' window shows the message: 'Task completed in 0.106 seconds' and 'PL/SQL procedure successfully completed.'

INTO and SELECT statement to assign a value to a variable.



The screenshot displays the Oracle SQL Developer interface. On the left, the 'Orade Connections' tree shows the 'Ankur Prajapati' connection with a list of database objects including Tables (Filtered), Views, Indexes, Packages, Procedures, Functions, Operators, Queues, and Queues Tables. The 'EMPLOYEES' table is selected. The main window shows the 'Query Builder' tab with the following PL/SQL code:

```
17 PRINT b_basic_percent;
18 PRINT b_pf_percent;
19
20
21 SET SERVEROUT ON SIZE 1000000;
22 DECLARE
23     v_first_name EMPLOYEES.FIRST_NAME%TYPE;
24     v_last_name EMPLOYEES.LAST_NAME%TYPE;
25     n_employee_id EMPLOYEES.EMPLOYEE_ID%TYPE;
26     d_hire_date EMPLOYEES.HIRE_DATE%TYPE;
27 BEGIN
28     SELECT employee_id, first_name, last_name, hire_date
29     INTO n_employee_id, v_first_name, v_last_name, d_hire_date
30     FROM employees WHERE employee_id = 200;
31     DBMS_OUTPUT.PUT_LINE(v_first_name);
32     DBMS_OUTPUT.PUT_LINE(v_last_name);
33     DBMS_OUTPUT.PUT_LINE(d_hire_date);
34 END;
```

Below the code editor, the 'Script Output' window shows the message: 'Task completed in 0.16 seconds'. The output of the procedure is displayed as follows:

```
Jennifer
Whalen
17-09-87
```

PL/SQL procedure successfully completed.