

# Oracle – PL/SQL

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# Recap

- ◊ Introduction & Goals of these sessions
- ◊ Quick run of few basics

# Setup – Quick recap

- ◆ Oracle 21c + SQL Developer on Windows 10
- ◆ 6 GB memory, 4 cores, 50-75 GB disk space
- ◆ VirtualBox
- ◆ <https://oracle-training.lakshmananumolu.com/en/main/>

# Git & VSCode

- ◇ <https://git-scm.com/download/win>
- ◇ <https://github.com/lakshman-training-repos/oracle-plsql>
- ◇ <https://code.visualstudio.com/download>
  - ◇ Extensions:
    - ◇ Gitlens
    - ◇ Oracle devtools

# PL/SQL

## Sample PL/SQL structure

```
DECLARE
```

```
...
```

```
BEGIN
```

```
...
```

```
EXCEPTION
```

```
...
```

```
END;
```

```
/
```



# PL/SQL

```
1 DECLARE
2     v_num NUMBER := 1;
3 BEGIN
4     v_num := v_num / 0;
5     DBMS_OUTPUT.PUT_LINE('hello');
6 EXCEPTION
7     WHEN OTHERS THEN
8         DBMS_OUTPUT.PUT_LINE(sqlcode || ' ' || sqlerrm);
9 END;
10 /
```

Anonymous PL/SQL block

# PL/SQL

➤ Assignment operator

➤ Variables

➤ User assigned name to a memory location

```
1 DECLARE
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9 END;
10 /
```

# PL/SQL

- ◆ Variable

- ◆ Declare in “DECLARE” section

- ◆ Initialize in “DECLARE” or “BEGIN” or “EXCEPTION” sections



# PL/SQL

## ◆ String

◆ v\_str VARCHAR2(10) := 'PLSQL';

◆ v\_char CHAR(10) := 'PLSQL';

# PL/SQL

- ◆ CREATE a sample table to demo CHAR and VARCHAR2
  - ◆ CREATE TABLE tab\_datatypes(...);
- ◆ Difference in memory allocation
  - ◆ Using LENGTH or LENGTHB
- ◆ Query all fields and display LENGTH

# PL/SQL

```
18 CREATE TABLE tab_datatypes(  
19     code_char CHAR(10) NOT NULL,  
20     code_var VARCHAR2(10) NOT NULL,  
21     n NUMBER(10,2) NOT NULL  
22 );  
23  
24 SELECT code_char, LENGTH(code_char), code_var, LENGTH(code_var), n, LENGTH(n) FROM tab_datatypes;  
25
```

Sample reference

# Exercise

- ◆ Clone oracle-plsql training repository
- ◆ Modify anonymous pl/sql block from 2a-vars.sql:
  - ◆ Add another variable of type VARCHAR2.
  - ◆ Initialize in “BEGIN” but not in “DECLARE” section.
  - ◆ Print length of the variable

# Exercise

- ◇ Create a table with fields
  - ◇ “ID” of type NUMBER and autoincrements using SEQUENCE, starts with 1.
  - ◇ “country\_code\_3” -> CHAR(3) NOT NULL
  - ◇ “country\_code\_2” -> VARCHAR(2) NOT NULL
  - ◇ “country\_name” -> VARCHAR2(50) NULL
  - ◇ “num\_states” -> NUMBER(2) NULL
  - ◇ “population” -> NUMBER(10) NULL
- ◇ INSERT values of your choice
- ◇ Print “all” fields, along with “LENGTH” of each field.



# References

- ◇ [https://docs.oracle.com/en/database/oracle/oracle-database/21/sqlug/index.html#SQL\\*Plus%C2%AE](https://docs.oracle.com/en/database/oracle/oracle-database/21/sqlug/index.html#SQL*Plus%C2%AE)
- ◇ <https://docs.oracle.com/en/database/oracle/oracle-database/21/lnpls/index.html#Oracle%C2%AE-Database>