BTD310 – Fall 2016

# **Assignment 3 (6% of final mark)**

You will be working in a group of two or three for submission of Part III and Part IV. Only one person in the group needs to submit on Blackboard. Individual submissions will get a penalty of 20% (10 marks).

## Part I

1. Prepare a list of at least 5 songs, with at least one from 2016. For each song, prepare the following items:
2. Song title
3. Artist name
4. Album name
5. Duration
6. Genre
7. Year
8. Link
9. Rating (awful, not bad, good, excellent, outstanding)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Song Title** | **Artist name** | **Album Name** | **Duration** | **Genre** | **Year** | **Link** | **Rating** |
| 24K Magic | Bruno Mars | 24K Magic | 3:46 | R&B | 2016 | <https://www.youtube.com/watch?v=UqyT8IEBkvY> | Good |
| As If It’s Your Last | Black Pink | Blackpink | 3:36 | K-pop | 2017 | <https://www.youtube.com/watch?v=Amq-qlqbjYA> | Excellent |
| Shape of You | Ed Sheeran |  | 4:24 | Pop | 2017 | <https://www.youtube.com/watch?v=JGwWNGJdvx8> | Not Bad |
| There for You | Martin Garrix | There for You | 3:40 | EDM | 2017 | <https://www.youtube.com/watch?v=pNNMr5glICM> | Outstanding |
| Pizza | Martin Garrix | EDM | 4:17 | House | 2017 | <https://www.youtube.com/watch?v=JsKIAO11q1Y> | Outstanding |
| TT | Twice | Twicecoaster: Lane 1 | 4:14 | K-pop | 2017 | <https://www.youtube.com/watch?v=ePpPVE-GGJw> | Excellent |
| Pen-Pineapple-Apple-Pen | Daimaou Kosaka | PPAP | 1:08 | Dance | 2016 | <https://www.youtube.com/watch?v=0E00Zuayv9Q> | Awful |
| Call Me Maybe | Carly Rae Jepsen | Kiss | 3:19 | Pop | 2012 | <https://www.youtube.com/watch?v=fWNaR-rxAic> | Not Bad |
| Lean On | DJ Snake | Peace Is The Mission | 2:58 | EDM | 2015 | <https://www.youtube.com/watch?v=YqeW9_5kURI> | Awful |
| Sugar | Maroon 5 | V | 5:02 | Pop | 2014 | <https://www.youtube.com/watch?v=09R8_2nJtjg> | Good |

1. Run the script provided with this assignment to create the SONGS table, and insert sample song.
2. **(5 marks)** Write a script of ‘INSERT’ statements that inserts your songs into the SONGS table. Save your script in **Asg3\_partI.sql**.

## Part II

Save all your code for this part in **Asg3\_PartII.sql** and all output in **Asg3\_output.txt**.

**Q1. (10 marks) Cursors with parameters**

Create a PL/SQL block that declares a cursor called C\_RATING with a parameter for selecting all songs with a certain rating level from SONGS. Use a substitution variable B\_RATE for passing a rating level to the cursor and printing the details of all songs with the given rating.

Use the following to test your code:

DEFINE B\_RATE = excellent

Sample Output:

Title: Rockabye

Artist: Clean Bandit

Album: Rockabye (single)

Rating: excellent

**Q2. (10 marks) Exceptions**

1. Create a copy of the SONGS table named SEL\_SONGS, populating the table with information from SONG only from a given year. Use the following substitution variable to run your script:

DEFINE B\_YEAR = 2016

1. Write a block that prints out the title, artist, album and rating for all songs in SEL\_SONGS.

Raise an exception if the song is not from the year specified in the substitution variable B\_YEAR. Handle the exception with an appropriate exception handler that prints out ‘ Song #... skipped since not in the specified year’. Use the SONG\_NUM as the song # in above printed message.

Raise another exception if the song is ‘awful’ or ‘not bad’. Handle the exception with an appropriate exception handler that prints out ‘ Song #... skipped since not cool!’.

1. Test the block with DEFINE B\_YEAR = 2016. You should get the songs from 2016, including the sample from Q1.
2. Test the block with DEFINE B\_YEAR = 2015. You should get an output that skips over all songs that were displayed in part (c). For example (this is just a sample outout):

PL/SQL procedure successfully completed.

Song #2 skipped since not in specified year.

**Q3. (15 marks) Procedures & Functions**

1. Create a procedure, named RAND\_SELECT with the following parameters:

* An input parameter, N, indicating the number of songs to select,
* Two output parameters, NVA and NVO, to indicate the number of ‘awful’ and ‘outstanding’ songs selected.

In this procedure,

* Create an INDEX BY table named NUM\_TABLE to store s\_num type.
* Create a cursor to query all rows of SONGS table.
* LOOP through all rows of above cursor
  + Write the S\_NUM values into consecutive elements in NUM\_TABLE
* Delete all rows in SEL\_SONGS
* In a second loop, LOOP for N times
  + Generate a random number **r** between 1 and the number of values in NUM\_TABLE

Hint: To generate an integer between 1 and 1000, you can use:

“select trunc(dbms\_random.value(1,1000)) num from dual;”

Hint: NUM\_TABLE.COUNT returns the number of items in the table

* + Use the rth item in the NUM\_TABLE to SELECT the song with that number from the SONGS table. INSERT this song into the SEL\_SONGS table
  + Update the NVA and NVO parameters, if the selected song is awful or outstanding respectively.

1. Write a PL/SQL code that calls the above procedure to select 3 random songs from SONGS into SEL\_SONGS. Display the songs, and then display the number of ‘awful’ and ‘outstanding’ songs in this set.

## Part III. Team work

On top of **Asg3\_output.txt**, add what each member has done to complete this assignment:

|  |  |  |
| --- | --- | --- |
| Team Member 1 | Team Member 2 | Team Member 3 |
| (make this list as long as necessary) |  |  |

Submit your files for submission:

* Asg3\_partI.sql
* Asg3\_partII.sql
* Asg3\_output.txt