Session Title: **FUNCTIONS, TRANSACTIONS, DB LOCKS**

Session No: 5

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| **Learning Objectives:**   1. Learn different types of in-build functions and their practical use 2. Understand how transactions work and why do we need transactions management 3. Learn about different types of DB locks and their application 4. IMPORTANT: talk about the course project to give the students an understanding of what is expected of them. Encourage the class to think about individual ideas for the project. |

Session Outline

Please do not change the intro and closing blocks - feel free to add more session blocks as you see fit.

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| **Intro & Framing** Time: 5 mins  What will today’s session be about, what will they be able to do at the end and how will they learn today? |

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| **Session Block Title #1 FUNCTIONS**  Please give the students an overview of in-build functions and how they are used. The idea is to explain the main difference between in-built and user defined functions and then to focus on the former.  There are different types of in-built functions, so the objective is to discuss and demonstrate different types of the functions, but most importantly to explain their practical use. There are many exercises with examples to complete. |
| Relevant Exercise(s):  Complete exercises as explained on the ‘PRACTICE ’ slides. See code examples and answers:  **Session Plans / DB\_week5/in-class exercises and demo/module5\_questions\_answers**  Use the following scripts:  **in\_built\_convert\_functions.sql**  **in\_built\_date\_and\_time\_functions.sql**  **in\_built\_flow\_comtrol\_functions.sql**  **in\_built\_numeric\_functions.sql**  **in\_built\_string\_functions.sql**  Please note! There are many different exercises and it may be a good idea to leave some of them out or perhaps make the rest of them to be a homework if the time is ticking on. There are still more topics to cover as part of this lesson. |

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| **Session Block Title #2 Transactions and DB locks**  Explain Transaction Management and DB locks based on examples included in the lesson slides. It is good to keep all examples (potentially you have some of your own) as close to the real life use as possible.  One of the objectives is to demonstrate to the students the importance of transactions management and perhaps ell students more about specific jobs that are concerned with TM (for example DBA). |
| Relevant Exercise(s):  Complete exercises as explained on the ‘PRACTICE ’ slides. See code examples and answers:  **Session Plans / DB\_week5/in-class exercises and demo/module5\_questions\_answers**  There are scripts with practical exercises on Transaction management. It would be a good idea to try those exercises first prior to the lesson. You may choose to add few extras to demonstrate transaction management based on the bank transaction exercise. |

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| **Session Block Title #3 COURSE PROJECT**  One of the objectives is to introduce the project work to the students. We are now half way through the course work and have learnt few basics, but need to start thinking about the final work. The slides provide a comprehensive overview of the project and what needs to be done at this stage. Reiterate the use of databases and perhaps give few more examples of how they could be used (warehouse, airline company, beauty salon, conference etc.). |

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| **Recap & Closing** Time: 10 mins  How can you get the learners to articulate what they learned today, celebrate what they achieved and inform them what they need to do as homework? |