

List of Topics for BA Semester Work (5 th Semester) or BA Diploma Thesis (6 th Semester) in the area of Data Warehouse / Business Intelligence

Start Time: Winter Semester for Semester Work & Summer Semester for Diploma

Maximum Number per Year: 2 for Semester Works, 1 for Diploma Thesis

Evaluation: Dr. Hermann Völlinger

No	Topic	Remarks
1	New Requirements for Data Population and Data Quality for a Data Warehouse by the new Solvency II laws (Insurance industry)	Compare existing documentation about Solvency II in the internet and also the official description published by the Bank of International Settlements. Generic data models and papers about these new requirements exist. Hint: http://www.solvency-ii-kompakt.de/
2	New Requirements for Modelling (Business Model and Logical Data Model) by the new Solvency II laws (Insurance industry)	Compare existing documentation about Solvency II in the internet and also the official description published by the Bank of International Settlements. Generic data models and papers about these models also exist. Compare for example what predefined solution-assets exist in the industry (i.e. from Mummert or from IBM with IIW =Insurance Information Warehouse: Hint: http://www.mummert-iss.de/documents/14872/A3_118_1010_ISS_d_SOLVARA_screen.pdf
3	How can the usage of an IBM Industry Data Model support the building of a DWH solution. Examples are Insurance Information Warehouse (IIW) and Banking Data Warehouse (BDW) model.	IBM Industry Models are comprehensive business frameworks of data, process, and service models that have been created for various industries. They accelerate the development of industry solutions by combining expertise and industry best practices to create blueprints for development based on experience. The most popular data models are Insurance Information Warehouse (IIW) and Banking Data Warehouse (BDW) model. Hints: http://www.ibm.com/developerworks/data/tutorials/dm-1003bankindustrymodel http://www.ibm.com/developerworks/data/tutorials/dm-1012warehousinginsurance http://www-01.ibm.com/common/ssi/ShowDoc.wss?docURL=/common/ssi/rep_ca/8/897/ENU/S211-258/index.html&lang=en&request_locale=en
4	Examination of Agile Project Development Methods for building a Data Warehouse. (Pro's and Con's)	Data warehouses take too long to build; that, once built, they often no longer match their user's needs; that, once in production, they are too hard to change. Agile BI methods build for data warehousing integrated development environment (IDE), transforms traditional approaches to building, deploying and managing data warehouses, applying agile methodology and integrated data flows to streamline data warehouse development, deployment, and renovation. Such an approach supports the entire data warehouse management life cycle, integrating source system exploration, schema design, metadata management, warehouse scheduling and enhancement into a single, simple integrated design. Hint: http://www.wherescape.com/about/
5	Examine the Influence of Data Quality (DQ) in the Development and Operation of a Data Warehouse (DWH) and how can DQ Tools help	Examine the Influence of Data Quality (DQ) in the Development and Operation of a Data Warehouse (DWH) and how can DQ Tools help http://en.wikipedia.org/wiki/Data_quality http://www.ijcsi.org/papers/7-3-2-41-50.pdf
6	The role of metadata in the Development and Operation of a Data Warehouse (DWH)	see the book of David Marco (literature list) http://books.google.de/books?id=OFFvf6bZeo4C&source=gbs_similar_books
7	Technical Evaluation of ETL Tools and their usage in seven typical DWH/BI project/customer scenarios.	Create and use a criteria catalogue for the evaluation. Use the information from the internet about the tools http://ezinearticles.com/?How-to-Evaluate-ETL-Tools-Online-Before-Making-a-Buying-Decision&id=3714027
8	Technical Evaluation of OLAP & Reporting Tools and their usage in	Create and use a criteria catalogue for the evaluation. Use the information from the internet about the tools

	seven typical BI/CRM project/customer scenarios	http://www.businessintelligencetoolbox.com/reporting-tools/?gclid=CPH84qHH3bECFQ0htAod1DYA8A
9	Analysis of the basic concepts of an OLAP Tool (i.e. IBM OLAP Server) versus a Data Mining Tool (i.e. IBM Intelligent Miner). Show weaknesses and strengths of each concept	Use the information from the lesson DWH /DM and information from the standard books about data mining and OLAP or information from the internet http://www.global-innovation.net/team/tiwari/PDF/data-mining.pdf
10	Historization concepts in a DWH. Comparison and Description of these Concepts	Describe the most popular concepts and show their usage in a data warehouse environment. Show advantages and disadvantages of each of these concepts. Develop use cases for concrete implementation scenarios. http://www.systems.ethz.ch/education/spring-2012/DW/slides/03-1%20DWh%20Data%20Warehouse%20-%20Historization.pdf
11	Delta Load in a DWH – Techniques and their Usage	Describe the different techniques of delta detection and delta load in the data population process in a DWH environment. Show advantages and disadvantages of each of these concepts. Develop use cases for concrete implementation scenarios. http://www.dwbiconcepts.com/etl/27-basic-etl-concepts/109-methods-of-incremental-loading-in-data-warehouse.html