

Project Report

Data Storage Paradigms, IV1351

Date

Project members:

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Declaration:

By submitting this assignment, it is hereby declared that all group members listed above have contributed to the solution. It is also declared that all project members fully understand all parts of the final solution and can explain it upon request.

It is furthermore declared that the solution below is a contribution by the project members only, and specifically that no part of the solution has been copied from any other source (except for lecture slides at the course IV1351), no part of the solution has been provided by someone not listed as a project member above, and no part of the solution has been generated by a system.

Tips for Report Writing

REMOVE THIS SECTION BEFORE SUBMITTING THE REPORT.

The target audience has exactly the same skills as the author, except they do not know anything at all about the specific application described in the report.

Consider the following:

- The report must be *centered around the requirements*. Which are they (Introduction), how did you work to meet them (Method), what is the solution that meets them (Result), and how can you be sure they are met (Discussion). This is the IMRaD method. The requirements on the Introduction, Method, Result and Discussion chapters are described below under each chapter.

- Is spelling and grammar correct? Is spoken language avoided?
- Does the report have a good structure with sections, subsections and paragraphs?
- Is the text clarified with images and/or other figures, and with links to the code in your Git repository? Remember that all figures (images, tables, graphs, code listings, etc) shall be numbered and have a short explaining text.

1 Introduction

This chapter tells *what* are you going to do.

For this seminar the task is to design OLAP queries. These should run on a database designed for a university.

2 Literature Study

This chapter must prove that you collected sufficient knowledge before starting development, instead of just hacking away without knowing how to complete a task. State what you have read and briefly summarize what you have learned.

3 Method

This chapter tells *how* you solved the task.

Explain how you worked when solving the tasks and how you evaluated that your solution met the requirements. *Do not explain your solution and do not refer to code*, that belongs to the *Result* chapter. More specific instructions for the content can be found under each task on the Project page in Canvas.

4 Result

This chapter explains *the result* of what you did.

The report must show that you have done the work yourself and that you have understood what you have done, both of these goals are met by carefully explaining your solution here in the result chapter, and proving that it meets the requirements. *State each requirement that is met* and explain *how you met it*. Also include links to your code in your Git repository, and include also diagrams, see Figure 1, and other figures to illustrate your reasoning. All figures must be referenced in the text. Ask yourself if the solution is clearly explained, and if the reader will understand the application. What would you yourself want to know if you read about the application, is that included in the report? More specific instructions for the content can be found under each task on the Project page in Canvas.

The queries are stored as Query.sql in github.com/Sailet03/Seminar-IV1351-2025.

Number one: Planned hours calculations will calculate a breakdown of all the hours needed for every course instance for a given year. First the query will join the CourseLayout, Instance, PlannedActivities and ActivityType to get all the required information. Since the hours are stored with the only difference being the type we need to do some math to separate the different activity types into separate columns. This is done by using SUM together with WHERE to sum together all activities of the same type into a value that can be showed in a column. The GROUP BY statement ensures that everything belonging to the same instance is treated together and the WHERE ensures that only the specified year is shown. Here is the output of the query.

Course Code	Course Instance ID	HP	Period	# Students	Lecture Hours	Tutorial Hours	Lab Hours	Seminar Hours	Other Overhead Hours	Admin	Exam	Total Hours
CS101	2024-1	7	P1	30	137	34	53	24	9	88	108	453
MA201	2024-2	5	P2	25	169	42	70	30	11	80	100	502
PH110	2024-3	10	P3	40	137	34	55	24	9	100	122	481

Number two: Calculate actual allocated hours for a course will break down how much time is allocated to per employee for a specific course instance. This query works mostly the same since most of the columns are the same. Since it required more information than number one it also had to JOIN the EmployeesPlannedActivities, Employees, Titles and Person. The WHERE statement ensures that the correct course instance is selected. The GROUP By statement is ensuring that the employees are grouped together.

Course Code	Course Instance ID	HP	Teacher's Name	Designation	Lecture Hours	Tutorial Hours	Lab Hours	Seminar Hours	Other Overhead Hours	Admin	Exam	Total Hours
CS101	2024-1	7	Alice Johnson	Assistant Professor	0	0	24	0	5	0	0	29
CS101	2024-1	7	Bob Smith	Associate Professor	0	0	29	0	4	0	0	33
CS101	2024-1	7	Frank Miller	Lecturer	72	0	0	11	0	0	54	137
CS101	2024-1	7	Grace Lee	Senior Lecturer	65	0	0	13	0	0	54	132
CS101	2024-1	7	Hannah Kim	Lecturer	0	16	0	0	0	44	0	60
CS101	2024-1	7	Ian Clark	Lab Assistant	0	18	0	0	0	44	0	62

Number three: Calculate the total allocated hours for a teacher, only for the current years' course instances is also similar to the first 2 questions. Here The WHERE statement filters on year.

Course Code	Course Instance ID	HP	Teacher's Name	Lecture Hours	Tutorial Hours	Lab Hours	Seminar Hours	Other Overhead Hours	Admin	Exam	Total Hours
CS101	— 2024-1	7	Frank Miller	72	0	0	11	0	0	54	137
MA201	— 2024-2	5	Frank Miller	0	20	0	0	0	40	0	60
PH110	— 2024-3	10	Frank Miller	0	0	29	0	4	0	0	33

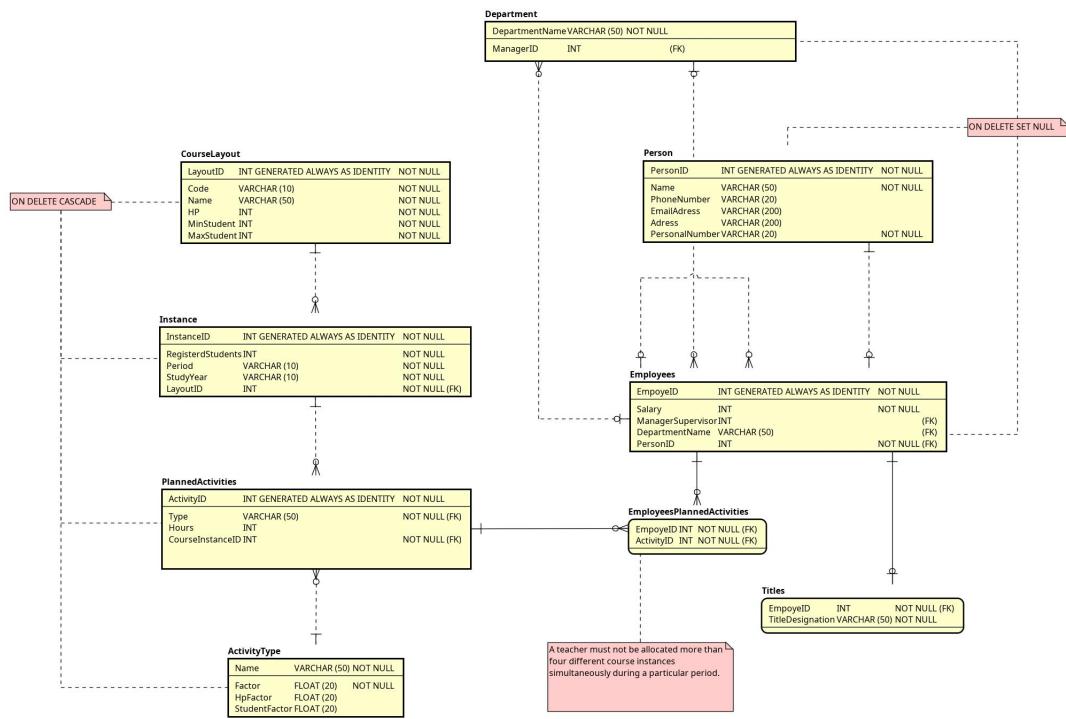


Figure 1: Database schema

5 Discussion

This chapter *analysis* the result presented in the previous section.

Evaluate your solution according to the assessment criteria found in the assessment-criteria documents, which are found under the bullet *In the Discussion chapter of your report...*, under each task on the Project page in Canvas. You do not have to cover all specified criteria.

6 Comments About the Course

This section is optional, but please at least write approximately how much time you spent on the assignment, including lectures, labs, tutorials and seminars. This is of great help for course evaluation.

Also, any other comment(s) related to this course offering or to coming offerings is much appreciated.