Hanze

Course: Data Dashboards — credits: 10

Course code	BFVH23DATADASH
Name	Data Dashboards
Study year	2025-2026
ECTS credits	10
Language	Dutch, with parts in English
Coordinator	A.M. Poortinga
Modes of delivery	Project-based learning
Assessments	Dashboards - Other assessment Relationele Databases - Other assessment

Learning outcomes

This module has the following learning outcomes:

- You design - expressly taking into account the purpose of the dataset - relevant (interactive) visualisations and tabulations for a given dataset, taking into account relevant statistical aspects.
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- You design and implement an efficient and relevant data backend for a data dashboard (from flat file to relational database, depending on the case).
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- You design a user-friendly data dashboard for a given data model. In doing so, you collect, prioritise and implement the client's requirements. You use a reactive dashboard platform, deliberately choosing between Shiny [R] or Panel [Python] and using any relevant libraries.
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- You collaborate in a development team to translate a client's requirements into product features.
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- You can pitch the final product to your client
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- You make a tested plan (and manual) for hosting the application once it is taken into production. You apply the FAIR principles here.
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- Based on a given case, you design and implement a relational database.

DAS competencies

Competency	Level (I-IV)
Research	II
Experimentation	I
Development	
Management	II
Advise	I
Instruction	I
Leadership	I
Self-management	

You interact with a relational database through correct and effective use of SQL and any database-specific functions.

You use the possibilities offered by an RDBMS to make unwanted manipulation of the structure and data impossible.

Content

In this module, you work as a team to carry out an assignment provided by an "external" client. This could be the KCBBE (Hanze), the UMCG (e.g. clinical chemistry) or another client. You will enter into discussions with the client to find out what the purpose of the data dashboard is. Important questions to be answered include: Who are the users? What will the dashboard be used for? Which features are essential and which optional? How is the application going to be maintained and hosted. You then set to work designing and implementing the application. Here, you follow agile principles: short release cycles, a lot of contact with the client, intensive cooperation as a (scrum) team.

Of course, git version control is again an important aspect, as well as FAIR principles.

Alongside the main project, a sub-module runs where you learn the most important aspects of relational databases: design, implementation and querying/searching.

To follow this module successfully, knowledge of R or Python (depending on the chosen platform) and working in a terminal at a reasonable level is required. In addition, basic knowledge of web application architecture, html and css is highly desirable.

Included in programme(s)

Bio-Informatics

School(s)

Institute for Life Science & Technology

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