

DECISION SUPPORT SYSTEMS: MODULE II LABORATORY OF DATA SCIENCE

Anna Monreale & Cristiano Landi

Computer Science Department, University of Pisa

Teachers

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□ Anna Monreale

- Computer Science Department, Room 374/DO
- Email: anna.monreale@unipi.it
- Office hours: **TBD**

□ Cristiano Landi

- Computer Science Department
- Email: cristiano.landi@phd.unipi.it
- Office hours: **TBS**

Context

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□ The DS Lab

- is at the 1st semester, 2 year
- is **compulsory** for Business Informatics
- is a **lab course** of topics presented at:
 - Programming for data science
 - Decision Support Systems
 - Data Mining I & II
- requires knowledge of
 - computer programming
 - datawarehousing
 - data mining

Laboratory of Data Science

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- This is the second module of Decision Support Systems (801AA, 12 ECTS)
- Previously it called Laboratory of Data Science (664AA, 6 ECTS).

Module objectives

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- The DS lab presents technologies and systems for accessing heterogeneous **data sources**, building and populating **datawarehouses**, querying data **cubes**, extracting knowledge by **data mining**
- The accent is on **problem solving** and on the **technology** in support of the process. Theory is assumed from previous courses.
- Contents of the DS lab will demonstrate useful for the thesis or in industrial projects you will do in BI.

Teaching materials

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- Web page

- <http://didawiki.di.unipi.it/doku.php/mds/lbi/>

- news and links

- slides & video-records of lessons

- textbook chapters

- Software needed

- Anaconda for programming (Python < 3.12)

- SQL Server 2019 Management Studio or newer

- Visual Studio Community 2022. Install/include SSDT workload in the installation manager of Visual Studio

- only client & dev tools needed

- optional, server downloadable with MSDN-AA license

Teaching materials

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- Web page

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- news and links

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- textbook chapters

- Software needed

ONLY WINDOWS

- Anaconda for programming python

- SQL Server 2019 Management Studio or newer

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- only client & dev tools needed

- optional, server downloadable with MSDN-AA license

Software for non-windows users

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- MacOS with Apple silicon
 - Download Keka and UTM
 - Download Windows VM (link in the Teams channel)
 - Start the VM and install Office (from office.com using UniPi credentials)
 - Some procedures shown in the course will not work (thanks Microsoft!), but we will show alternative ways to get to the same results
- MacOS with Intel or Linux
 - Download Keka and Oracle VirtualBox
 - Download Windows VM (link in the Teams channel)
 - Start the VM and install Office (from office.com using UniPi credentials)

For any other problems send both of us an email!

Exam

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□ Project

- Given a set of data students will address the tasks required
- Groups of 3 people
- The dataset will be released in few days
- **Deadline: 18 December 2026**

□ Oral

- Project presentation (with slides)
- Open questions on the program and on the details of project

Exam

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- **What if a group/student skip the project deadline?**
 - **Practical test + Oral**
 - Solve practical test before the oral exam
 - Open questions on the entire program

Accounts & Mailing list

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- Every student needs to join the Teams Group
- We will publish in Teams a shared document where each student need to provide the following data:
 - Name
 - Surname
 - Student id
 - Email
 - Group number
- Each group will get:
 - an account on a database server of the course
 - included a mailing list of urgent news