Course Introduction

(1IK172 Introduction to Data Analytics)

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Outline

- About this course
- Topics to be discussed in this course
- Methodologies
- Examination
- Quick discussion

Course Description

The course focuses on the understanding of theoretical and practical aspects in data analytics.

The course will

- present different phases of data handling such as data discovery, data aggregation, planning of the data models, data model execution, validation, and visualization and presentation.
- introduce some concepts of predictive analysis and machine learning
- provide hands-on tasks where students will use tools for conducting the analysis and to generate visualizations.

Upon Completion of the Course

Students should be able to:

- understand fundamental concepts and methods within data analytics field
- explain application areas of data analytics from an organizational perspective
- use tools for processing and visualizing large amount of data coming from different sources and with different formats
- develop analytical solutions for basic data analysis and pattern identification to enable informed decision-making

Methodology

- Active participation
- Type of activities:
  - Lectures (Pre-recorded)
  - Live Coding
  - Laboratory Work
  - Tutoring
  - Assignments and
  - Final Exam

Lectures

- The course comprises 6 lectures that follow chapters of the main course book.

  1. Introductory Background (1)
  2. Descriptive Statistics & Desscriptive Multivariate Analysis (2, 3)
  3. Data Quality and Preprocessing (4)
  4. Clustering & Frequent Pattern Mining (5, 6)
  5. Regression (7)
  6. Classification (8)

Numbers in brackets indicate chapters in the book

- Lectures are prerecorded and will be progressively uploaded in MyMoodle and we expect you to watch them before coming to live coding sessions.

Examination

No.	Activity	Grade
1.	*Laboratory work (Descriptive analysis)*	*U, G*
2.	*Project (Clustering & Predictive analysis) **	*U, G*
3.	*Final exam*	*U, G, VG*
	Final grade	*U, G, VG*

* Project will be solved in groups

Laboratory Work

- Laboratory is an individual work and will cover the descriptive analysis of a chosen dataset

Lab presentations

- A registration form for lab presentation will be uploaded in Moodle where you should book a time slot which is suitable for you to present your laboratory work.

Project

- Project will be solved in groups (max two students) and will focus on clustering or predicting the unknown, i.e. regression or classification

Project presentation

- A registration form for project presentation will be uploaded in Moodle where you should book a time slot which is suitable for you to present your project.

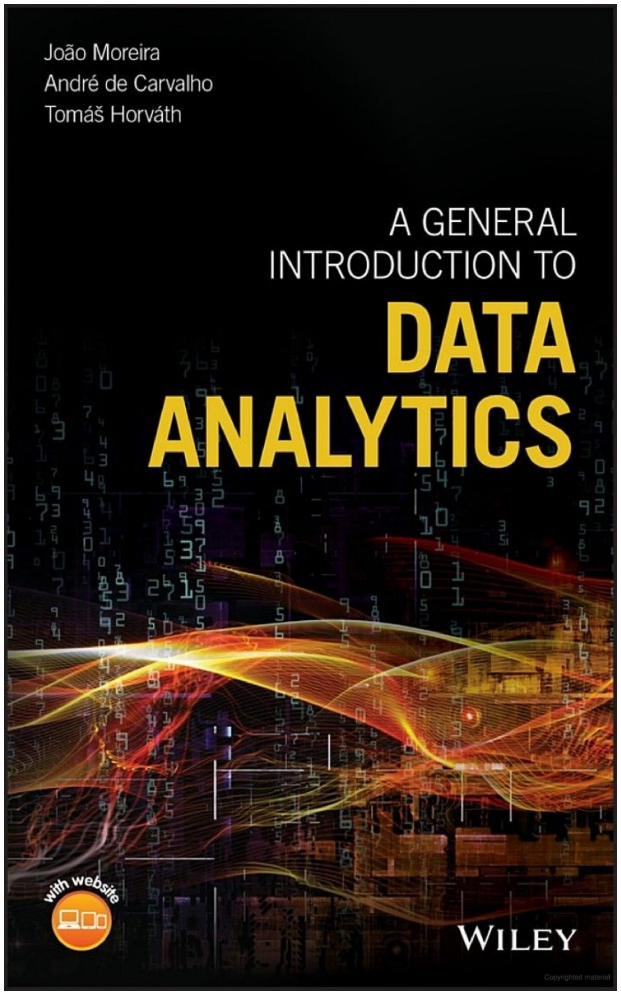
Live Coding

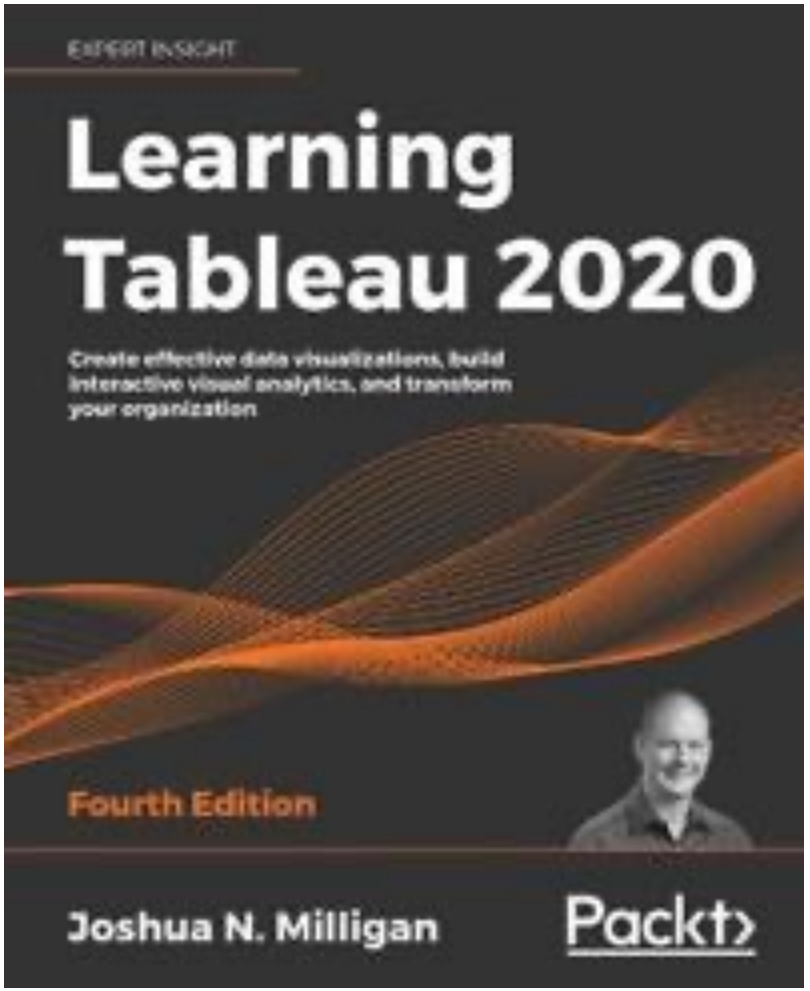
- We will provide 2 sessions where we present hands-on tasks in order to help you to better grasp the content in the lecture.
  - The first session will be focusing on descriptive analysis
  - The second session focusses on clustering and predictive analysis

Written exam (Tentamen)

- The course will end with a written exam (tentamen).
- The aim is to show that you have understood concepts and aspects of data analytics
- Focus on the theoretical part of the lectures and consider the literature.

Relevant Literature





About the teachers

- Zenun Kastrati – Course responsible & Live coding, Labs
- Fisnik Dalipi – Examiner & Live Coding
- Manon Ykema – Labs & Tutoring

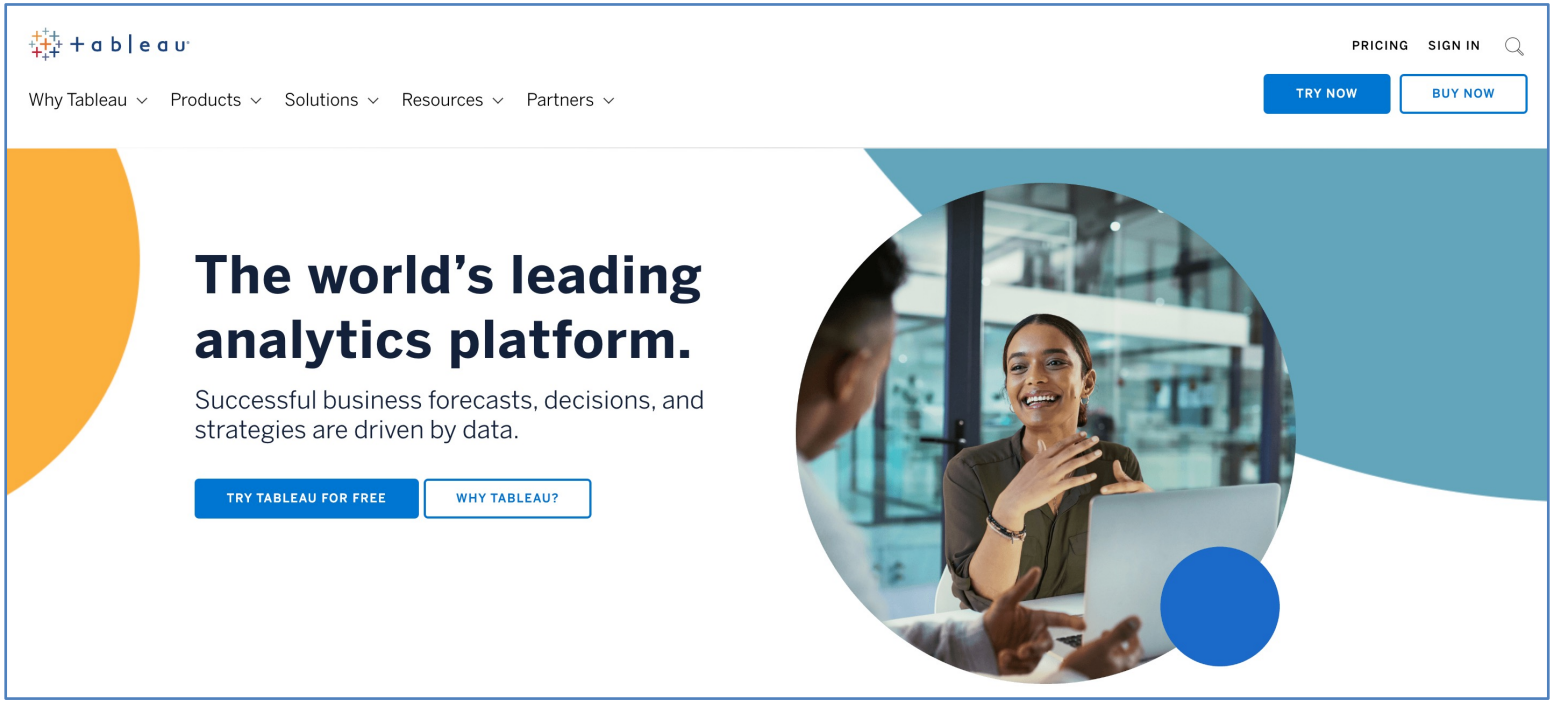
Course web site

- My Moodle
  - https://mymoodle.lnu.se
  - Main channel for offline communication
  - Storage for lectures, labs, assignments, etc.
- Consultation
  - Upon appointment via email, or through Moodle forums

Installing Tableau

Following are step by step instructions for installing Tableau

1. Go to *https://www.tableau.com*
2. Choose option *Try Tableau for Free*



Installing Tableau (I)

Student License

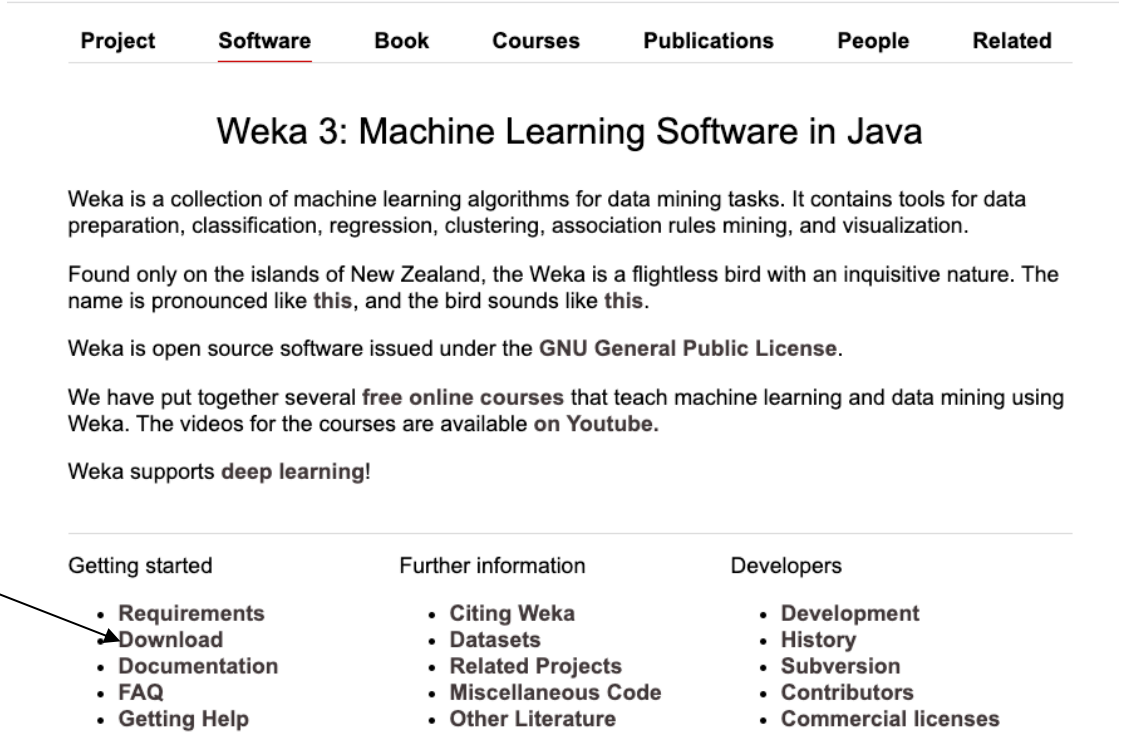
To be able to use '*Tableau*' throughout the year, you must apply for a student license. Here comes the required steps:

1. Choose *Get Tableau for Free*
2. Then fill out the form to apply for a student license.

Note: You must use your LNU student email address only to apply for a student license.

Weka

Weka is an open source tool that can be downloaded from the following link https://www.cs.waikato.ac.nz/ml/weka/



Go to Download

Questions?

Thank You!