Introduction to programming for business analytics

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Description

- Mandatory for all students of the B.Sc. in Betriebswirtschaftslehre and in Wirtschaftsmathematik.
- Introduces students to structured programming, fundamental data structures, and algorithmic thinking using Julia and Python.
- Students apply their knowledge by solving business analytics problems and by using libraries for data analytics and data visualization.
- English is the language of instruction.

Teaching format

- The course is taught in a flipped classroom format.
- Students learn new content, independently, outside of class by watching pre-recorded lecture videos.
- Students can test their understanding of the material immediately by taking an online quiz.
- In-presence sessions and classroom time are dedicated to discussions and group activities.
- Lectures are accompanied with exercises sheets and practice problems of various level of difficulties.
- A sample solution of the exercise sheet is presented and discussed in a standard in-presence session.
- The sample solution and a pre-recorded video that explains it are also uploaded to Moodle.

Moodle

- All course studying material, news, and announcements are communicated via Moodle.

Videos

- All videos have been professionally produced by the Medien für die Lehre at the RWTH film studio.
- Each video is accompanied with English and German subtitles.

Quizzes

- Theoretical questions in the form of True or False.
- Students are given a code snippet and asked to identify syntax errors or determine the output.

Interactive notes

- The lecture notes, exercise sheets and sample solutions are provided via Jupyter notebooks.
- Jupyter notebook provide interactive environments that enable the students to execute their code in individual cells, experiment with code snippets, and receive immediate feedback.

Online support

- Material-related questions, comments and concerns are addressed via a Moodle forum room.
- Students are incentivized to help each other via an award that recognizes the student who give the best answers.

Glossary

- An alphabetical list of important terms and their meaning is available in Moodle.
- A hyperlink is created for each word that appears in the glossary wherever it is typed in Moodle.

Bonus exam

- Students can participate in a bonus e-exam that takes place in-presence, digitally, via Dynexite.
- The bonus exam covers the first five topics and allows students to receive up to 10 points in the final.
- Students benefit from the bonus points, the exam experience, and early preparation for the final exam.

Serious Games

- Serious Games are interactive digital applications that combine elements of entertainment and gameplay with the educational objectives of the course.
- Serious Games increase the engagement of the students beyond the traditional teaching methods.
- The didactic design of the Serious Games was done in collaboration with RWTH Center für Lehre- und Lernservices.

Evaluation

- Evaluation questionnaires are collected to investigate the impact of the teaching methods and digital tools on the students' learning experience.
- The questionnaires are specifically tailored towards the course and are designed in collaboration with RWTH Center für Lehre- und Lernservices.

Acknowledgements

Creating some of the course elements was funded by RWTH Aachen University Digitale Lehre im Curriculum.