



Redesign of the „Databases“ course based on MOOC methodology



faculty of
informatics

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About the course „Databases“

- Part of the *Computer Science* study programs (B.Sc)
- 6 ECTS
- Delivered in the 4th semester of studies
- Structure:
 - Lectures - 32 h (blended learning)
 - Practical work - 32 h (on campus)
 - Individual learning - 96 h
- ~400 students per semester
- Learning material, assignments are presented in the Moodle course
- Methodology of lectures' delivery
 - *Teacher*: presents and explains topic using slides, asking questions, giving assignments, organizing discussions
 - *Students*: listen, communicate, collaborate, asking questions, doing assignments, giving feedback
- The main challenges:
 - Keeping the attention of students during the lecture
 - Ensuring active involvement of students
 - Attendance
 - Different aptitudes



Redesign of the course „Databases“

Themes of the course

1. Introduction to databases
2. Evolution of data storing. Relational data model

3. Entity-relationship model

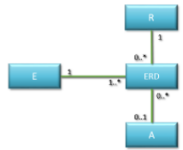
4. ER-based design of database schema
5. Database management systems
6. Development of databases
7. Database in the architecture of software system
8. SQL
9. Indices, views, data constraints and control
10. Functional dependencies
11. 1-3 normal form and algorithm of normalization
12. Multivalued dependencies. Fourth normal form

MOOC “Entity-Relationship Modelling”

- 11 subthemes
- For each subtheme:
 - Video of ~5 min length
 - Short test (no open questions, no limitations to repeat)
- 1 final task for preparation of the final test
 - precondition: 11 tests are completed
- 1 final test
 - no open questions, precondition: final task is completed



MOOC “Entity-Relationship Modelling”: Structure



Esybių ir ryšių modeliavimas

Susipažinkite su esybių ir ryšių modeliavimo technika taikant UML klasių diagramos notaciją.

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► Open all ▼ Close all

Instructions. Clicking on the section name will show / hide the section.

► Apie kursą

- 1 tema. Įvadas į ER modeliavimą
- 2 tema. ER modelio notacija
- 3 tema. ER modeliavimo procesas, atributų modeliavimas
- ▼ 4 tema. Unikalus esybių identifikatorius

4 tema. Unikalus esybių identifikatorius (paokaitos įrašas)

Šiame įraše supažindinama su esybės unikalaus identifikatoriaus specifika ER modelyje.
Trukmė - 3 min.

4 testas

275 of 304 attempted

- 5 tema. Ryšiai: Struktūrinių veiklos taisyklių modeliavimas
- 6 tema. ER modeliavimo pavyzdys
- 7 tema. Ryšių tarp esybių tipai
- 8 tema. Pasikeitimų laike modeliavimas
- 9 tema. Kategorijų modeliavimas
- 10 tema. Sudėties modeliavimas
- 11 tema. Hierarchijos modeliavimas
- Galutinė kurso užduotis

ER modelio elementai. Ryšys

Ryšys (angl. *Relationship*) – tai įvardinta reikšminė asociacija tarp dviejų esybių.

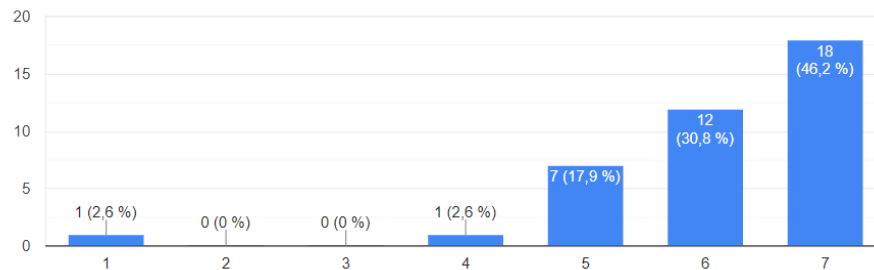




Students' feedback

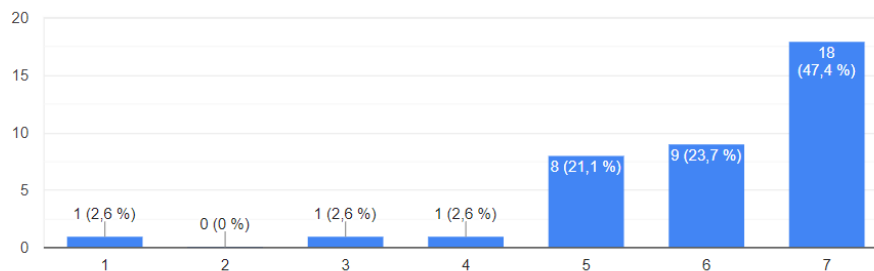
Overall, to what extent are you satisfied with the course or the part of the course implemented differently?

39 atsakymai



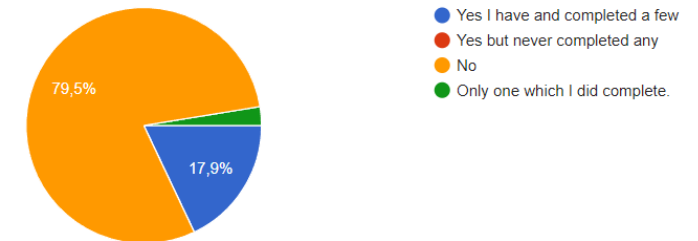
Would you recommend this course (or the part implemented differently) to your friends/acquaintances/colleagues?

38 atsakymai



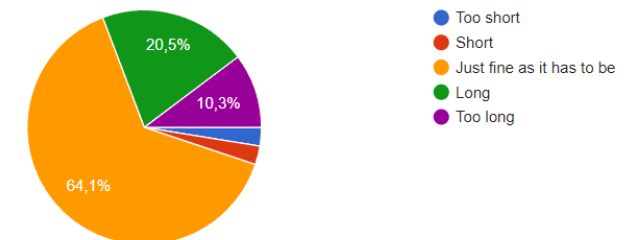
Have you taken any MOOCs (Massive Open Online Course) before this course?

39 atsakymai



How did you find the length of the course (or part of it implemented differently)?

39 atsakymai





Conclusions: most liked or disliked aspects of the MOOC

1. I liked tests, because I can repeat as many times as I want
 2. I enjoyed the fact that the course was split into small sections with short videos
 3. Liked that videos are short and just needed information, easy to understand
 4. Really liked the transitions between the short videos
 5. Progress bar was very useful
 6. A little too many questions
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1. Final task was a bit too demanding for a course like this
 2. Some difficult multi choice questions
 3. It is interesting to listen to a course that explains the material well. The only place I would change is just some places in self-monitoring questions.

Thank you!

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