

LW-04EN. SQL - DATA MODIFICATION EXERCISES (INSERT, UPDATE, DELETE, MERGE).

1. LAB TARGET.

Learn how to create of SQL Insert, Update, Delete Statements.

2. LAB ASSIGNMENT.

- 2.1. Register on SQL Exercises Site (sql-ex.ru).
- 2.2. Repeat Example of Exercise and Incorrect Answer Analysis.
- 2.3. Fully complete first 11 Exercises on sql-ex.ru Site in DML Section.
- 2.4. Make Your Results Screenshots.

3. LAB REPORT.

The report is provided electronic form with Report Blank Form (docx).

The report includes:

- 3.1. Screenshot 1 “Completed Exercises”.
- 3.2. Screenshot 2 “Personal data”.
- 3.3. Screenshot 3 “Rating and solved exercises”.
- 3.4. Screenshot 4 “List of tasks solved”.

RATING FORMATION.

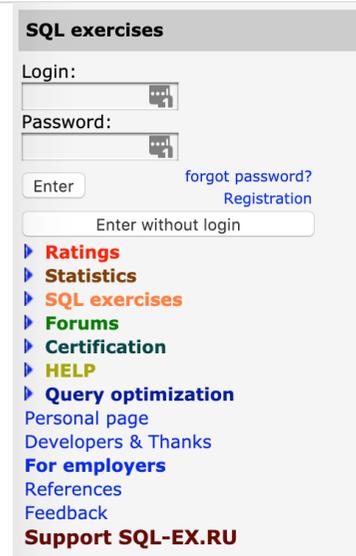
Plus 10 points to final grade, if correctly made all assignments.

4. LAB GUIDELINES.

4.1. REGISTER ON SQL EXERCISES SITE (SQL-EX.RU).

4.1.1. Go to in URL:

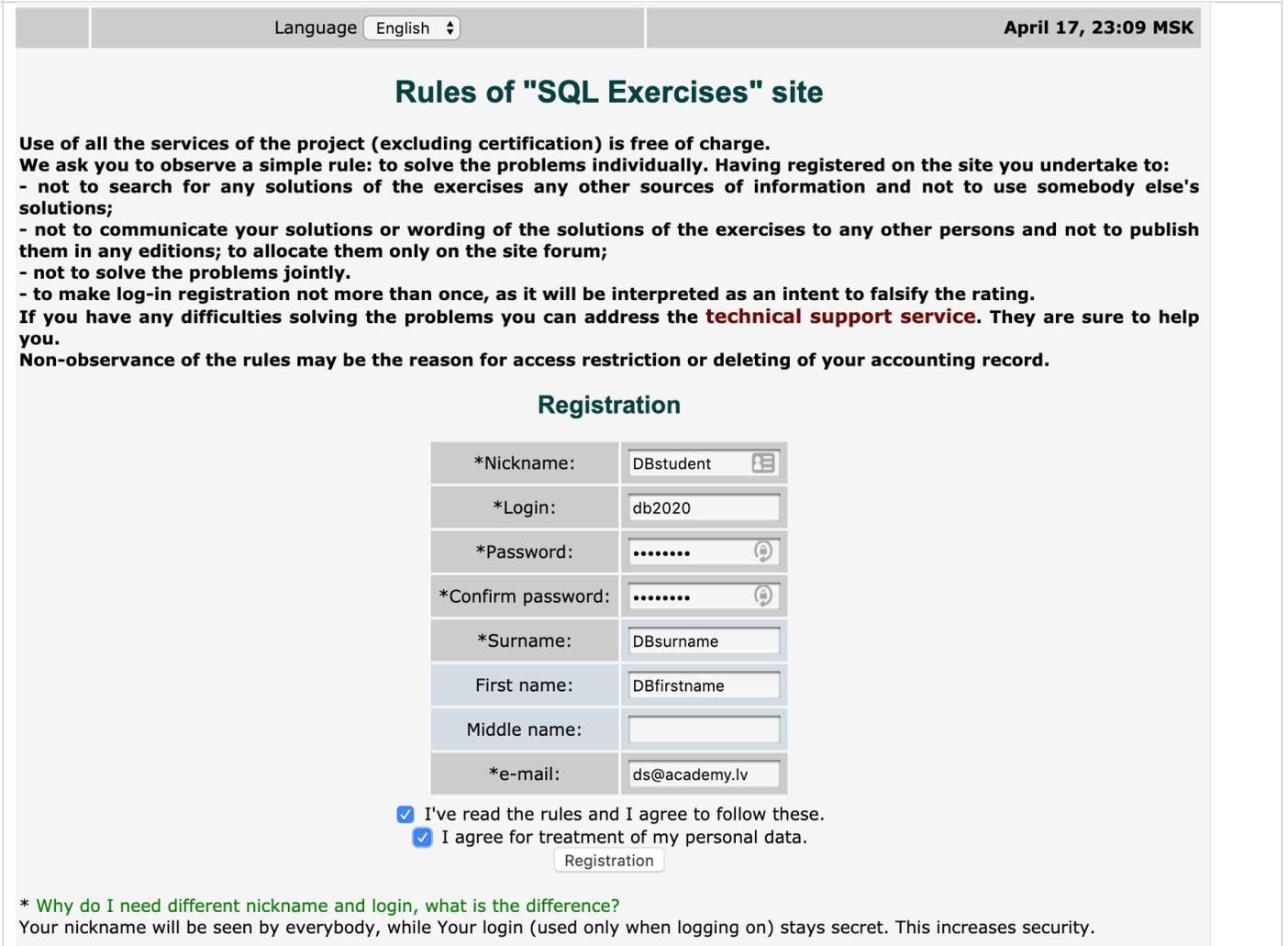
<https://www.sql-ex.ru/register.php?Lang=1;>



The screenshot shows the left sidebar of the SQL exercises website. It features a navigation menu with the following items: Login, Password, Enter, forgot password?, Registration, Enter without login, Ratings, Statistics, SQL exercises, Forums, Certification, HELP, Query optimization, Personal page, Developers & Thanks, For employers, References, Feedback, and Support SQL-EX.RU.

4.1.2. Select Language and complete Registration Form - fill in *-fields.

Use real Surname and First name



The screenshot shows the registration form on the SQL exercises website. The page header includes a language selector set to English and the date April 17, 23:09 MSK. The main heading is "Rules of 'SQL Exercises' site". Below this, there are several paragraphs of text explaining the site's rules, including a note that services are free of charge and a list of rules such as not to search for solutions elsewhere, not to communicate solutions to others, and not to solve problems jointly. A "Registration" section follows, containing a form with fields for Nickname, Login, Password, Confirm password, Surname, First name, Middle name, and e-mail. The form is partially filled with values like "DBstudent", "db2020", "DBsurname", "DBfirstname", and "ds@academy.lv". There are two checked checkboxes for agreeing to the rules and data treatment. A "Registration" button is at the bottom of the form. A footnote explains the difference between nickname and login.

Language English April 17, 23:09 MSK

Rules of "SQL Exercises" site

Use of all the services of the project (excluding certification) is free of charge.
We ask you to observe a simple rule: to solve the problems individually. Having registered on the site you undertake to:

- not to search for any solutions of the exercises any other sources of information and not to use somebody else's solutions;
- not to communicate your solutions or wording of the solutions of the exercises to any other persons and not to publish them in any editions; to allocate them only on the site forum;
- not to solve the problems jointly.
- to make log-in registration not more than once, as it will be interpreted as an intent to falsify the rating.

If you have any difficulties solving the problems you can address the **technical support service**. They are sure to help you.
Non-observance of the rules may be the reason for access restriction or deleting of your accounting record.

Registration

*Nickname:	DBstudent
*Login:	db2020
*Password:
*Confirm password:
*Surname:	DBsurname
First name:	DBfirstname
Middle name:	
*e-mail:	ds@academy.lv

I've read the rules and I agree to follow these.
 I agree for treatment of my personal data.

Registration

* Why do I need different nickname and login, what is the difference?
Your nickname will be seen by everybody, while Your login (used only when logging on) stays secret. This increases security.

4.1.3. Confirmation Result

SQL exercises Language English April 17, 23:12 MSK DBstudent

Ratings
Statistics
SQL exercises
Forums
Certification
HELP
Query optimization
Personal page
Developers & Thanks
For employers
References
Feedback
Support SQL-EX.RU

Congratulations!
You are now a registered user in our remote education system.
Any time You shall visit our site again, type Your login and password to enter the system as registered user.

To begin please choose the exercises You are interested in:

SELECT exercises (learning stage)
SELECT exercises (learning stage, choose DBMS)
SELECT exercises (rating stages)
DML exercises

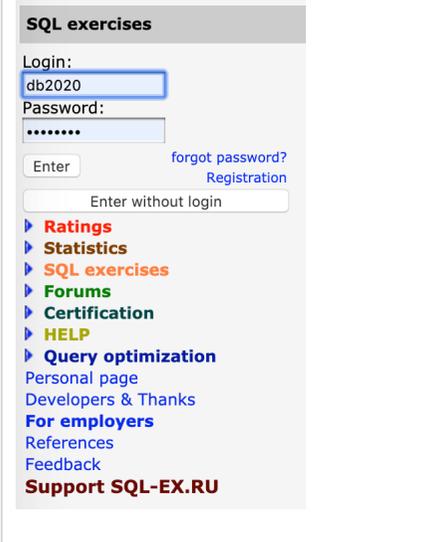
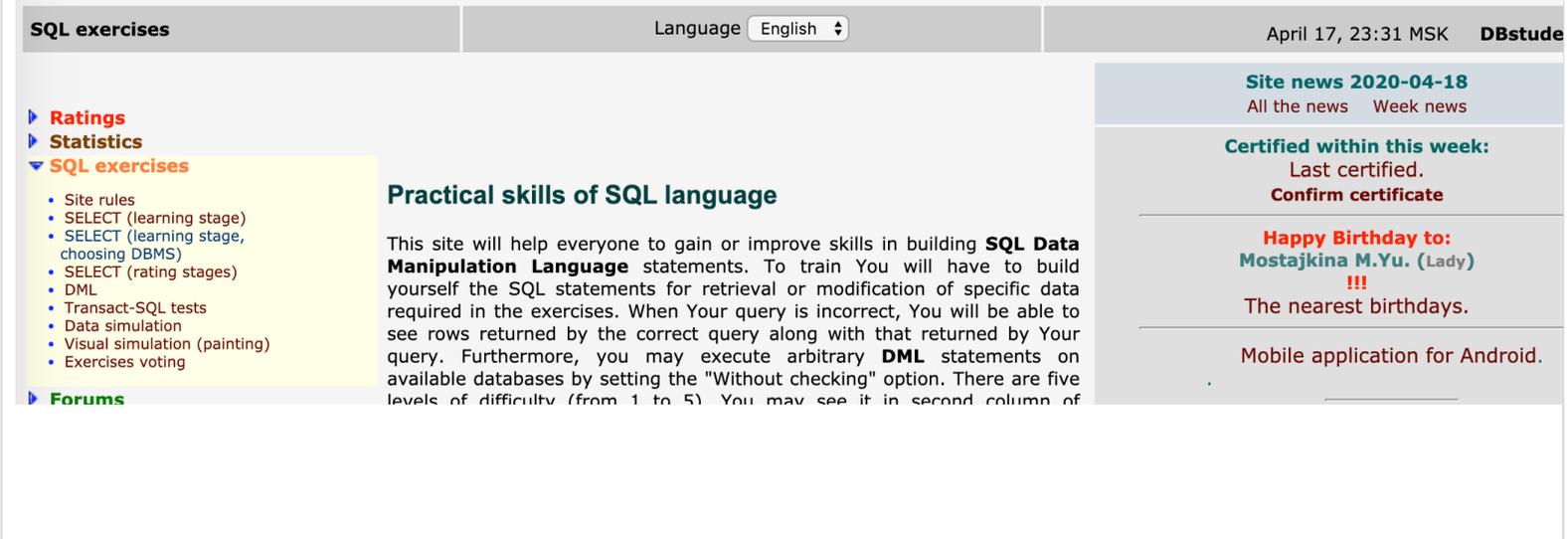
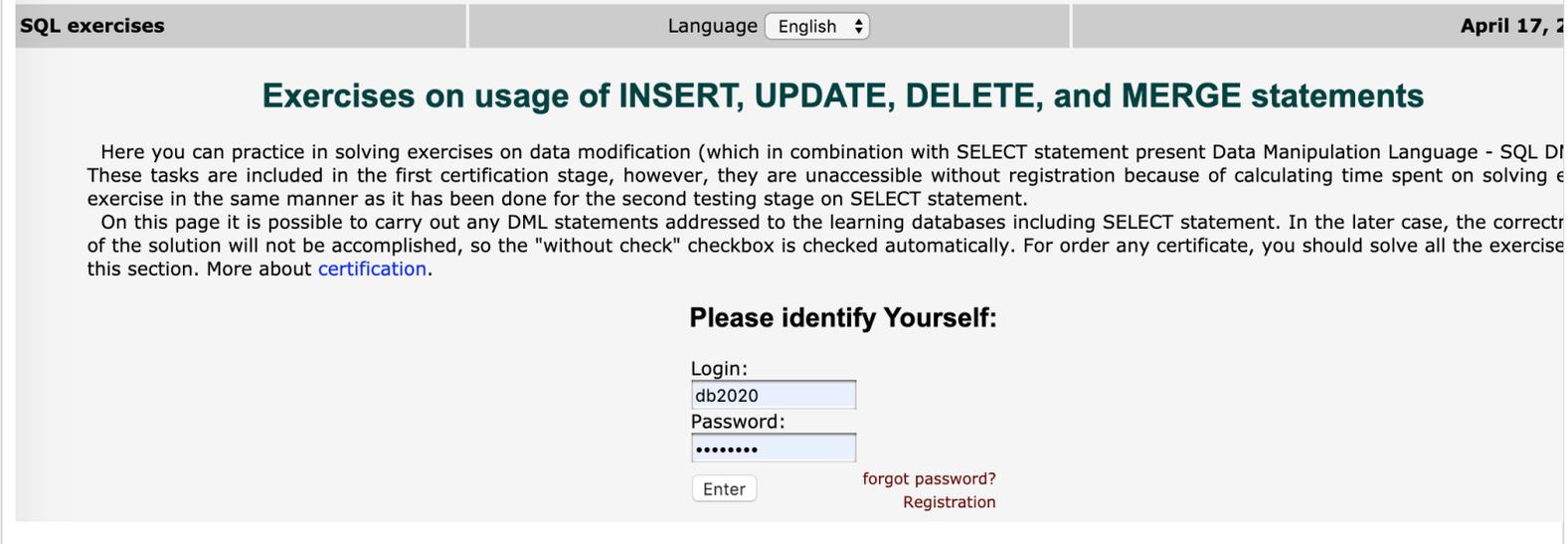
4.1.4. Logout from SQL Exercises site: select  button on right-up corner after you Username April 17, 23:36 MSK DBstudent 

4.2. EXAMPLE OF EXERCISE EXECUTION AND INCORRECT ANSWER ANALYSIS

4.2.1. EXERCISE EXECUTION PLAN:

1. Login to the Site and select a language (RU, EN)
2. On Left Site Menu select a **SQL exercises** point and **DML** section
3. Consistently select a Task Nr (from 1 to 11, or more to 44).
The second numbers in brackets (1-4) indicate the level of exercise from (low-high)
4. Read a current database Short description (top on page)
5. Read the Exercise (left on page)
6. Enter & Run your Query (right on page)
7. Check the Result (Correct, Incorrect)
8. If necessary, analyze, correct and repeat your Query (4-7 steps):
 - 8a. press "Show correct result";
 - 8b. see the current Database Schema;
 - 8c. read the Help topics;
 - 8d. read the Hints for task.
9. Completed Exercises (marked as Nr Ok)

4.2.2. STEP BY STEP PROCESS:

1. Login to sql-ex.ru	2. Select a DML section (on Left Menu open roll-down SQL exercises and select DML)
	
<p>1+2. Short way. Go to on URL https://www.sql-ex.ru/dmlexercises.php?Lang=1 http://www.sql-ex.ru/dmlexercises.php and Logon to site</p>	

3. Select a Task Nr
4. Read DB descript
5. Read the Exercise
6. Enter& Run Query
7. Check the Result
(Correct or Incorrect)

SQL exercises
Language English
April 21, 15:36 MSK DBstudent

Short database description "Computer firm":

The database scheme consists of four tables:
 Product(maker, model, type)
 PC(code, model, speed, ram, hd, cd, price)
 Laptop(code, model, speed, ram, hd, screen, price)
 Printer(code, model, color, type, price)

The Product table contains data on the maker, model number, and type of product ('PC', 'Laptop', or 'Printer'). It is assumed that model numbers in the Product table are unique for all makers and product types. Each personal computer in the PC table is unambiguously identified by a unique code, and is additionally characterized by its model (foreign key referring to the Product table), processor speed (in MHz) – speed field, RAM capacity (in Mb) - ram, hard disk drive capacity (in Gb) – hd, CD-ROM speed (e.g. '4x') - cd, and its price. The Laptop table is similar to the PC table, except that instead of the CD-ROM speed, it contains the screen size (in inches) – screen. For each printer model in the Printer table, its output type ('y' for color and 'n' for monochrome) – color field, printing technology ('Laser', 'Jet', or 'Matrix') – type, and price are specified.

[Database Schema](#)

Exercise: 1 (Serge I: 2004-09-08)

Add following model into the PC table:

code: 20
 model: 2111
 speed: 950
 ram: 512
 hd: 60
 cd: 52x
 price: 1100

• Help topics:
[INSERT statement](#)

Type a query:

```
INSERT INTO Pc
(code, model, speed, hd, cd, price)
VALUES
(20, 2111, 950, 60, 52x, 1111)
```

Without checking

Run (Ctrl+Enter) Tab≡Ctrl+Shift+space

Show correct result

Current rating
 rpos login score

Incorrect.

Error.

Incorrect syntax near 'x'.

8. If necessary, analyze, correct and repeat your Query

Error #1 "Incorrect syntax near 'x' ". This error occurred because you must use quotation marks for text types for "cd" field. You need to use syntax:

```
INSERT INTO Pc
  (code, model, speed, hd, cd, price)
VALUES
  (20, 211, 950, 60, '52x', 1111);
```

Error #2 and #3 "Data Mismatch (2 times)". This error occurred because you forgot to enter the "ram" field and indicated the wrong value for the "price" field. You need to use the syntax:

```
INSERT INTO PC
  (code, model, speed, ram, hd, cd, price)
VALUES
  (20, 211, 950, 512, 60, '52x', 1100);
```

Note. The real system will not notice such errors, since the data is **believable**.

N 1 (1) -> 4

Exercise: 1 (Serge I: 2004-09-08)
Add following model into the PC table:

code: 20
model: 2111
speed: 950
ram: 512
hd: 60
cd: 52x
price: 1100

• Help topics:
[INSERT statement](#)

Type a query:

```
INSERT INTO Pc
(code, model, speed, hd, cd, price)
VALUES
(20, 2111, 950, 60, '52x', 1111)
```

cls
max

②

Without checking

Run (Ctrl+Enter) Tab≡Ctrl+Shift+space Show correct result

Current rating

rpos	login	score
Скрыть рекламу:		
✓ Спасибо, объявление скрыто.		

Incorrect.
*** Data mismatch (2)**

The results of

Your query:

code	model	speed	ram	hd	cd	price
1	1232	500	64	5.0	12x	600.0000
2	1121	750	128	14.0	40x	850.0000
3	1233	500	64	5.0	12x	600.0000
4	1121	600	128	14.0	40x	850.0000
5	1121	600	128	8.0	40x	850.0000
6	1233	750	128	20.0	50x	950.0000
7	1232	500	32	10.0	12x	400.0000
8	1232	450	64	8.0	24x	350.0000
9	1232	450	32	10.0	24x	350.0000
10	1260	500	32	10.0	12x	350.0000
11	1233	900	128	40.0	40x	980.0000
20	2111	950	128	60.0	52x	1111.0000

correct query:

code	model	speed	ram	hd	cd	price
1	1232	500	64	5.0	12x	600.0000
2	1121	750	128	14.0	40x	850.0000
3	1233	500	64	5.0	12x	600.0000
4	1121	600	128	14.0	40x	850.0000
5	1121	600	128	8.0	40x	850.0000
6	1233	750	128	20.0	50x	950.0000
7	1232	500	32	10.0	12x	400.0000
8	1232	450	64	8.0	24x	350.0000
9	1232	450	32	10.0	24x	350.0000
10	1260	500	32	10.0	12x	350.0000
11	1233	900	128	40.0	40x	980.0000
20	2111	950	512	60.0	52x	1100.0000

9. Completed Exercise.

You see

Right Result

and marked exercises

1(1) Ok and 2(1) Ok

SQL exercises
Language English
April 21, 19:04 MSK DBstudent

Short database description "Computer firm":

The database scheme consists of four tables:
 Product(maker, model, type)
 PC(code, model, speed, ram, hd, cd, price)
 Laptop(code, model, speed, ram, hd, screen, price)
 Printer(code, model, color, type, price)

The Product table contains data on the maker, model number, and type of product ('PC', 'Laptop', or 'Printer'). It is assumed that model numbers in the Product table are unique for all makers and product types. Each personal computer in the PC table is unambiguously identified by a unique code, and is additionally characterized by its model (foreign key referring to the Product table), processor speed (in MHz) – speed field, RAM capacity (in Mb) – ram, hard disk drive capacity (in Gb) – hd, CD-ROM speed (e.g, '4x') – cd, and its price. The Laptop table is similar to the PC table, except that instead of the CD-ROM speed, it contains the screen size (in inches) – screen. For each printer model in the Printer table, its output type ('y' for color and 'n' for monochrome) – color field, printing technology ('Laser', 'Jet', or 'Matrix') – type, and price are specified.

Exercise: 1
Add following

4-09-08)
PC table:

You may post a message

Current rating		
rpos	login	score
9066	SonyYony	2
9067	ebelex	2
9068	DBstudent	2
9069	SoulDrinker	1
9070	cagal	1

Type a query:

```
INSERT INTO Pc
(code, model, speed, ram, hd, cd, price)
VALUES
(20, 2111, 950, 512, 60, '52x', 1100)
```

Without checking

Run (Ctrl+Enter) Tab⇐Ctrl+Shift+space

Show correct result

Right.

The result of Your query:

code	model	speed	ram	hd	cd	price
1	1232	500	64	5.0	12x	600.0000
2	1121	750	128	14.0	40x	850.0000
3	1233	500	64	5.0	12x	600.0000
4	1121	600	128	14.0	40x	850.0000
5	1121	600	128	8.0	40x	850.0000
6	1233	750	128	20.0	50x	950.0000
7	1232	500	32	10.0	12x	400.0000
8	1232	450	64	8.0	24x	350.0000
9	1232	450	32	10.0	24x	350.0000
10	1260	500	32	10.0	12x	350.0000
11	1233	900	128	40.0	40x	980.0000
20	2111	950	512	60.0	52x	1100.0000

4.3. FULLY COMPLETE 11 EXERCISES IN DML SECTION.

4.3.1. You need to consistently complete the first 11 (or more) of 57 exercises in DML Section of site sql-ex.ru.

4.4. MAKE YOUR RESULTS SCREENSHOTS.

4.4.1. Select roll-down of Completed Exercises and make **Screenshot 1**.

The screenshot shows the 'SQL exercises' page with a 'Short database description "Computer firm":' section. Below it, there is a list of exercises. A dropdown menu is open, showing a list of exercises from 1 to 26. Exercise 1 is selected. At the bottom, there is a table with columns 'rpos', 'login', and 'score'.

rpos	login	score
9066	SonyYony	2
9067	ebelex	2
9068	DBstudent	2
9069	SoulDrinker	1
9070	caga1	1

4.4.2. Select "Personal Page" on left menu, after Select "Personal data" Tab and make **Screenshot 2**.

The screenshot shows the left menu of the SQL exercises page. The menu items are: Ratings, Statistics, SQL exercises, Forums, Certification, HELP, Query optimization, Personal page, Developers & Thanks, For employers, References, Feedback, and Support SQL-EX.RU. The 'Personal page' item is highlighted.

The screenshot shows the 'Personal page' on the SQL exercises site. The page has a header with 'Language English', 'April 21, 17:34 MSK', and 'DBstudent'. The main content area is titled 'Personal page' and has a sub-header 'Personal data | Photo | Rating and solved exercises | List of tasks solved'. Below this, there is a form to change personal data. The form has fields for *old password, *Nickname (DBstudent), *Login (db2020), *Password, *Confirm password, *Surname (DBsurname), First name (DBfirstname), Middle name, *e-mail (ds@academy.lv), and a checkbox for 'Don't show me queries for exercises solved earlier'. A 'Change' button is at the bottom.

4.4.3. Select "Rating and solved exercises" Tab and make **Screenshot 3**.

Language English April 21, 18:10 MSK DBstudent

Personal page

[Personal data](#) | [Photo](#) | **[Rating and solved exercises](#)** | [List of tasks solved](#)

Your rating: 12522.
Involved in rating: 12522.



You can place a **button** with Your current rating position on Your site.. See button variants and get HTML code [on this page](#).

Statistics on SELECT exercises:

Total number of exercises that have been solved: 0

Statistics on DML exercises:

DB: Computer firm
Exercises: (Total: 1)

1*

Total number of exercises that have been solved: 1

! The exercises which You've discussed on forum are marked with black color.
Sign (*) shows if new messages were posted on forum.

4.4.4. Select "List of tasks solved" Tab with Rating exercises (DML) and make **Screenshot 4**.

Language English April 21, 18:11 MSK DBstudent

Personal page

[Personal data](#) | [Photo](#) | [Rating and solved exercises](#) | **[List of tasks solved](#)**

Rating exercises (SELECT)

Rating exercises (DML)

Add following model into the PC table:

code: 20
model: 2111
speed: 950
ram: 512 ...

Exercises of learning stage (SELECT)