

MODULE 5

DATABASES

Teacher Notes

Time Allocation

Total length of classes – 40 study hours.

Recommended course sequence	Number and name of ECDL module	Approximate course length (study hours)
1.	1. Concepts of information and communication technology	2
2.	2. Using the computer and managing files	4
3.	3. Word processing	10
4.	7. Web browsing and communication	5
5.	6. Presentation	6
6.	4. Spreadsheets	6
7.	5. Databases	7
		40

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CLASSROOM EQUIPMENT

The study material examines version **3.2** of **OpenOffice.org Base** in the **Gnome** environment of **Linux Ubuntu 10.10**.

The recommended minimum system requirements:

- **x86** processor with a clock rate of **1 Ghz**;
- **1 GB** of random-access memory
- Hard drive capacity (free space for parallel installation of operating systems) – **8 GB**;
- Video card and monitor with a resolution of **1024 × 768**
- USB port
- CD/DVD drive
- Internet connection
- Operating system **Linux Ubuntu 10.10** or newer with the **Gnome** graphical environment (version 2.32 or newer)
- OpenOffice.org (version 3.2 or newer) application suite, including **Base**.

Note:

The latest versions of Ubuntu may include the identical software **LibreOffice** in place of the **OpenOffice.org** application suite.

The latest versions of Linux Ubuntu use the graphical environment **Unity** by default. It is recommended to use the **Gnome** environment for better correspondence with the tasks of the study material.

The application **Base** is not installed by default. It must be added after installation of the operating system and OpenOffice.org: **Applications→Ubuntu Software Center**.

Virtual Environment

If the classroom computers are equipped with a Windows operating system, it is possible to use a virtual work environment.

To create a virtual environment:

1. Download the free **VirtualBox** software from **www.virtualbox.org**;
2. Install **VirtualBox** in the **Windows** environment;
3. Create a new virtual machine;
4. In the environment of the virtual machine, install **Linux Ubuntu**;
5. Install **VirtualBox** on the classroom computers;
6. Copy the previously created virtual machine disk onto the classroom computers;
7. On the computers, create a new virtual machine in **VirtualBox**, choosing to use the copied virtual disk.

Note:

Advanced technical knowledge may be needed for creation of the virtual environment and installation of the operating system.

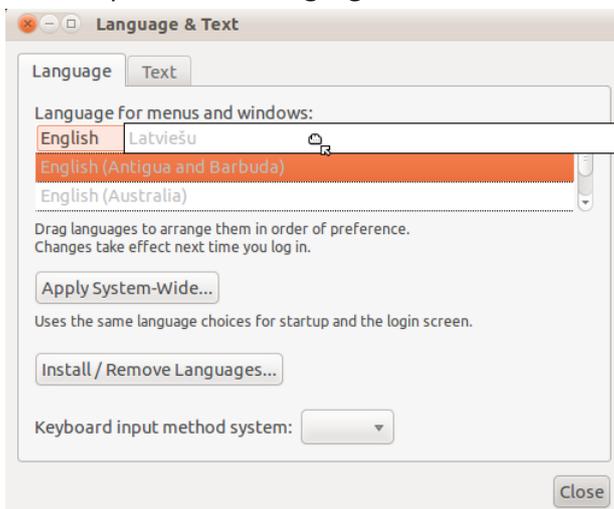
The user manual of **VirtualBox** can be found in the **Documentation** section of its website: http://www.virtualbox.org/wiki/End-user_documentation.

Language Selection

In **Linux Ubuntu**, it is possible to choose the language of the graphical environment (interface) for both the operating system and the **OpenOffice.org** suite.

To change the interface language:

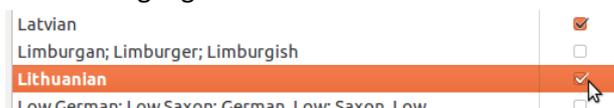
1. Perform the top panel menu command **System→Administration→Language Support**;
2. In the **Language** tab of the **Language & Text** dialogue box, drag the desired language to the top in the list “**Language for menus and windows**”:



3. Click **Apply System-Wide**;
4. Enter the administrator password;
5. In the **Text** tab, choose the number, currency, date format;
6. Close the dialogue box by clicking **Close**;
7. Restart the computer (or log out and log in again).

If the list does not contain the desired language:

1. Click **Install/ Remove Languages**;
2. In the following dialogue box **Installed Languages**, tick the checkbox next to the desired language:



3. Click **Apply Changes**;
4. Enter the administrator password.

To change the interface language only for the OpenOffice.org suite:

1. **Tools**→**Options**;
2. Expand the **Language Settings** menu;
3. Select **Languages**;
4. In the **User interface** menu, choose one of the available languages.

Before Starting the Course

- It is recommended to create a new user account with a password for the study course (**System**→**Administration**→**Users and Groups**);
- Copy the folder **5_datubazes** with task templates to the **Documents** folder of the user account;
- Install **Base**;
- Get thoroughly acquainted with the study material and tasks;
- It is recommended to complete all the practical tasks included in the material;
- Complete the final task **5.10_test** on a classroom computer.

Practical Task Files

The files of ECDL module 5 **Databases** are located in the folder **5_datubazes**. Task templates and files for completion of the tasks are in subfolders whose names begin with the number of the respective task. Each task folder contains a subfolder called **final**, which contains an example of a file obtained as a result of completing the task.

Course Outcome

- Understand what a database is and how it is organized and operated;
- Create a simple database and view the database content in various modes;
- Create a table, define and modify fields and their properties; enter and edit data in a table;
- Sort and filter a table or form; create, modify and run queries to retrieve specific information from a database;
- Understand what a form is and create a form to enter, modify and delete records and data in records;
- Create routine reports and prepare outputs ready for distribution.

Independent Work

The final task **5.10_test** is intended as an independent test of knowledge and assessment of readiness for the exam.

Concepts

- **Primary key**: unambiguously denotes a specific record in a table throughout the entire database.
- **Field index**: this property is assigned to a field to allow finding records faster.

- **Relation:** the linkage of tables.
- **Tables:** data are arranged in a table or several interlinked tables. The table is the fundamental structure of a database.
- **Forms:** used for creation, display and modification of database records.
- **Queries:** used for selection of information in one or several tables.
- **Reports:** usually used to display and print data.

Frequently Used Commands

The frequently used commands will help clear up mistakes made by users and avert difficulties arising in the course of completing the tasks.

Appearance

- Display (hide) toolbars: **View**→**Toolbars**→**(Toolbar name)**.

Creating a database by using a wizard

1. Open **Base**;
2. In the **Database Wizard**, make sure that **Create a new database** is selected and click **Next**;
3. In the next step, click **Finish**.

Creating a database object by using a wizard

1. In the **Database** pane, select the object type;
2. In the **Tasks** pane, click **Use Wizard to create ...**

Opening a database object in design view

1. Select the database object type in the **Database** pane of **Base**;
2. Select the database object;
3. Perform the menu command **Edit**→**Edit**.

To open a database object in data view

1. Select the database object type in the **Database** pane of **Base**;
2. Perform a double left click on the icon of the selected object in the object pane.

Decimal mark

1. **Tools**→**Options**;
2. Expand the **Language Settings** menu;
3. Choose **Languages**;
4. Select the country in the **Locale setting** menu of the **Language of** pane.

Printing

- **Base** uses the application **Writer** for printing of tables and queries.