**Discipline: Information and communication technologies   
Modular assignment 1   
Assignments**

1. Summarizing the considered capabilities of ICT, it is necessary independently present the didactic functions of computer teaching aids and communication interaction and present them in the form of a diagram. Prepare a report for 3-5 minutes, format the material in the form of a PowerPoint presentation .
2. Analyze the proposed model of a new education paradigm and, based on an analysis of the literature and your own reasoning, confirm, refute, clarify and justify all your new provisions. Reply by email.
3. Prepare a detailed answer to the question “Me and my education: necessary conditions, opportunities, problems.” Discussion in electronic seminar mode (during contact classes).
4. Develop video material on the topic “Possibilities and principles of operation of a computer communication environment.”

**Perform tasks on converting y from one number system to another**

*Task 1.* Convert the number 1100001(2) to the decimal number system.   
*Task 2.* Convert the number 1001010(2) to the decimal number system.   
*Task 3.* Convert the number 1000011(2) to the decimal number system.   
*Task 4.* Convert the number 1000110(2) to the decimal number system.   
*Task 5.* Convert the number 1010010(2) to the decimal number system.   
*Problem 6.* Convert the number 1101101101110(2) to the octal number system.   
*Problem 7.* Convert the number 10110000101(2) to the octal number system.

**Practical work**

***Database creation***

**Goal:** to gain an understanding of the technology for creating databases.

**Tasks:** mastering the process of creating a single-table database using a wizard, editing the database, searching for information in the database.

**Guidelines:**

Creating an empty database (DB)

1. Launch Microsoft Access: < Start >< Programs ><Microsoft Access>.

2. Turn on the "New Database" switch or <File><New >< General tab>, "New Database", <OK>.

3. Determine the folder and name of the database.

Creating a table using the wizard.

1. In the database window, click the <Table> button, then the <Create> button, select “Table Wizard”.

2. In the dialog window, select a sample base (for example, Students)

3. In the "Sample fields" field, select the fields needed to create a database and transfer them to the "Fields of a new table" field using G:\Руслан\Все для сайта\Внешний Сайт (сокрашённый)\внешний сайт\pic\book(LPI)\book_3(41).JPG, <Next>.

4. Enter the table name, select the “MS Access automatically detects the key” switch, <Next>.

5. Switch "Enter data directly into the table", <Done>.

Filling the database can be done directly in the table.   
Go to tables : <View><Table>.   
Change the column width   
<Format> < Column Width><Fit to Data Width> or double-left-click the captured right column border.   
Creating a Form

* 1. In the database window, click the <Form> button, then the <Create> button.
  2. In the dialog box, select the table from the list, <Next>.
  3. select a method for presenting data in the form (for example, “In one column”), <Next>.
  4. Select all fields available in the table for the form, button G:\Руслан\Все для сайта\Внешний Сайт (сокрашённый)\внешний сайт\pic\book(LPI)\book_3(42).JPG, <Next>.
  5. Decide on the design, <Next>.
  6. Enter the name of the form, <Done>.

Presentation of records in a form.   
Each record, which was a separate row of the table, now represents a separate card. The status line reflects: the number of the active record and the total number of records (Fig. 1).

|  |
| --- |
| G:\Руслан\Все для сайта\Внешний Сайт (сокрашённый)\внешний сайт\pic\book(LPI)\book_3(43).JPG |
| Rice. 1 |

Sorting entries:

* + select the field by which sorting will be performed;
  + <Records> < Quick sort><Ascending; Descending> or buttons G:\Руслан\Все для сайта\Внешний Сайт (сокрашённый)\внешний сайт\pic\book(LPI)\book_3(8).jpg.

Search organization:

* + place the cursor in the field in which the search will be performed;
  + <Edit><Find> or G:\Руслан\Все для сайта\Внешний Сайт (сокрашённый)\внешний сайт\pic\book(LPI)\book_3(23).JPG;
  + enter a search pattern;
  + Click <Search next> to continue searching through the text. The \* sign replaces any character in the search pattern.

**Tasks:**

**1.** Create a new database baza1:

* + - create a Group List table using the wizard. You can use the Students table as a sample. Fields: Student code, First name, Last name, Middle name, Address, Phone. For the telephone field, enter the input mask in design mode: 00-00-00 ("General" tab);
    - fill out the table for 10 students. The Student code field is filled in automatically;
    - Rename the Student Code field to Number;
    - change the width of each column to fit the data width.

**2.** Open the baza1 database and create a form based on the List of Students table:

* + - add 5 more students to the list. Enter data using the form;
    - control their appearance in tabular form;
    - move the columns: address and telephone;
    - sort the list alphabetically.

**3.** Search:

* + - find a student knowing only his last name;
    - determine who from the group called you if there is a number left on your phone ID;
    - find a student by the first letters of his last name;
    - find a student knowing only the first two digits of his phone number;
    - select all students whose phone numbers belong to the same PBX (first two digits). Use filter.

**Tasks for independent completion:**

**1.** Create a database.

Units of some mechanical quantities

|  |  |  |  |
| --- | --- | --- | --- |
| Magnitude | Designation | Unit | Unit designation |
| Weight | M | Kilogram | Kg |
| Force | F | Newton | N |
| Job | A | Joule | J |
| Energy | E | Joule | J |
| Power | N | Watt | W |

**2.** Sort alphabetically.

**Control questions:**

* 1. Name ways to create a single-table database.
  2. What is a field?
  3. What types of fields are used?
  4. Name ways to fill a database table.
  5. What is a database in office technology?
  6. What is a data warehouse in an electronic office - a database or a table?
  7. What is a request?
  8. What is a report?
  9. Is it possible to create a report without a request?
  10. Describe the principle of creating a request.

**Test tasks:**

Question: What does **SQL mean** ?

A. A standard query language for working with relational databases.

B. Program.

C. Algorithmic language for working with a database.

**You need to justify and prove your answer.**