Lab 4

1.

a)

There are 3 phases

Initial phase - characterize fully the data needs of the prospective database users.

Second phase - choosing a data model

•Applying the concepts of the chosen data model

•Translating these requirements into a conceptual schema of the database.

•A fully developed conceptual schema indicates the functional requirements of the enterprise.

• Describe the kinds of operations (or transactions) that will be performed on the data.

Final Phase - moving from an abstract data model to the implementation of the database

•Logical Design –Deciding on the database schema.

▪Database design requires that we find a “good” collection of relation schemas.

▪Business decision –What attributes should we record in the database?

▪Computer Science decision –What relation schemas should we have and how should the attributes be distributed among the various relation schemas?

•Physical Design –Deciding on the physical layout of the database.

b)

Entity Relationship Model

• Models an enterprise as a collection of entities and relationships

▪ Entity: a “thing” or “object” in the enterprise that is distinguishable from other objects

• Described by a set of attributes

2.

a)

|  |
| --- |
| Student |
| ID  name  first\_name  last\_name  address  city  street  postcode  phone\_numbers  birth\_date  age() |

b)

|  |
| --- |
| University |
| ID  name  number\_students |

|  |
| --- |
| Course |
| Id  Title  Number\_credits |

|  |
| --- |
| Dormitory |
| Id  address  capacity |

|  |
| --- |
| Teacher |
| ID  name  dept\_name  salary |

|  |
| --- |
| Office of the Registar |
| ID  number\_employees  phone\_number |

3.

One-to-many

Изображение выглядит как текст, доска

Автоматически созданное описание

One-to-one

Изображение выглядит как текст, доска

Автоматически созданное описание

Many-to-one

Изображение выглядит как текст, доска

Автоматически созданное описание

Many-to-many

Изображение выглядит как текст, доска

Автоматически созданное описание

4.

Изображение выглядит как текст, доска

Автоматически созданное описание

5.

Изображение выглядит как текст, доска

Автоматически созданное описание