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Software database design and management method

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Abstract -*Cleverly communication frameworks had four modules of the computer program suite with a disseminated computing handle based on communication scenarios. In these modules, database administration hones have been created to create or select tables, table metadata, sorts, properties, and occasions based on database plan, administration, and IDEF1x models*

Key Words: Intelligent communication systems, software, database, transaction,

1.INTRODUCTION

Intelligent communication systems had four modules of the software suite with a distributed computing process based on communication scenarios. In these modules, database management practices have been developed to develop or select tables, table metadata, types, properties, and events based on database design, management, and IDEF1x models.

To do this, the steps of database design are defined.

1. Conceptual phase - begins with an analysis of the requirements for the database design process. At this stage, the designer must address the following issues: what data elements should be stored, what is included in them, and in what style. Non-physical data, target database, and programming languages should be selected. Therefore, at this stage, based on the subject area, the process of the library system, the intellectual environment, the storage of all information necessary for intelligent communication systems in 16 tables and the nature of the database, only users who submit requests based on programming technologies and the database administrator. the choice of database, of course, depends on the architecture of the software package, so it is possible to choose a database (MySQL) that runs on client-server technology. The programming language is more integrated with the database. A mutually supportive programming language is selected. For example, PHP programming language for MySQL.

2. The logical step is to create a logical database structure. To do this, it is necessary to determine how the data is grouped logically. The database structure at this stage determines the application objects and the relationships between them.

3.Physical stage - the logical structure of the database is transformed into a physical factor, taking into account aspects of performance. At this stage, the data elements accept the attributes and are defined as columns in the database tables selected for implementation. establishes basic file and index organization relationships, rounding constraints, and security features in the database.

4. Transaction setting stage is an indivisible sequence of operations that move the database from one stable state to another. Features - atomicity (indivisibility), robustness (transition from one action to another), isolation (user actions do not interfere with each other), durability (even if the result is recently performed, the data should be recorded in the database later). is done based on the controllers configured for each table in the database and the settings of the database.

These 4 steps are done as follows. tables in the database

$$R = (R_i), i \in I, I = (1,2, \dots ,16) \qquad (1)$$

is defined as. For each object (row) in the table

$$r_i(x_k), i \in I, I = (1,2, \dots ,16), k \in K, K = (1, \dots , |R_i|), \qquad (2)$$

Here $|R_i| - R_i$ the number of metadata in the table.

Based on expressions (1) and (2), the database table can be written as follows. For example, let's take the first "Sinf" table.

$$R_1 = \{r_1(x_i)\}, i \in I, I = (1,2,3)$$

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In this case, x_1- ID metadata, x_2- Name metadata, x_3- Active metadata. This expression cannot represent all the properties of the R_1 table. Therefore, we present the expression in tabular form.

Table 1. Properties and events of the table R

№	Meta Data	Name	Type	Is null	Value	FK	PK
1	x_1	ID	int	NN	Auto_inc		PK
2	x_2	name	Nvarchar (64)	NN			
3	x_3	active	Bool	NN	0		

From Table 2, the properties and events of Table R_1 in relation to expressions (1) and (2) are complete and store all the information required for the design.

Table 2.R_2 \ Properties and events of the table "Communication class".

№	Meta Data	Name	Type	Is null	Value	FK	PK
1	x_1	ID	int	NN	Auto_inc		PK
2	x_2	superclass	int	NN		FK	
3	x_3	subClass	int	NN		FK	
4	x_4	Faol	Bool	NN	0		

A total of 16 tables were developed, such as the tables above. They are:

$R_2 = \{r_2(x_i)\}, i \in I, I = (1, \dots, 4)$ −«Aloqa sinf» table;

$R_3 = \{r_3(x_i)\}, i \in I, I = (1, \dots, 4)$ −«Xususiyat_bog'lanish » table;

$R_4 = \{r_4(x_i)\}, i \in I, I = (1, \dots, 4)$ −«Hodisa_bog'lanish» table;

$R_5 = \{r_5(x_i)\}, i \in I, I = (1, \dots, 6)$ −«Xususiyatlar» table;

$R_6 = \{r_6(x_i)\}, i \in I, I = (1, \dots, 4)$ −«Hodisalar» table;

$R_7 = \{r_7(x_i)\}, i \in I, I = (1, \dots, 3)$ −«Object» table;

$R_8 = \{r_8(x_i)\}, i \in I, I = (1, \dots, 4)$ −«ERobjPro» table;

$R_9 = \{r_9(x_i)\}, i \in I, I = (1, \dots, 3)$ −«Uzak» table;

$R_{10} = \{r_{10}(x_i)\}, i \in I, I = (1, \dots, 5)$ −«Lugatlar» table;

$R_{11} = \{r_{11}(x_i)\}, i \in I, I = (1, \dots, 4)$ −«Surov» table;

$R_{12} = \{r_{12}(x_i)\}, i \in I, I = (1,2)$ −«Savollar » table;

$R_{13} = \{r_{13}(x_i)\}, i \in I, I = (1,2)$ −«Javoblar» table;

$R_{14} = \{r_{14}(x_i)\}, i \in I, I = (1, \dots, 4)$ −«Rostlik» table;

$R_{15} = \{r_{15}(x_i)\}, i \in I, I = (1, \dots, 4)$ −«Yaqinligi darajasi» table;

$R_{16} = \{r_{16}(x_i)\}, i \in I, I = (1, \dots, 5)$ −«Tahlil» table;

5. Object-relationship phase. Method of object-relationship modeling A model of object-relationship is constructed using the following basic concepts. In it: relations and qualities between objects It is necessary to express properties of objects and relations. Any fragment of an object field can be represented as a set of objects, between which there is some set of connections. an object for a database is an object that can be identified in a way that distinguishes it from other objects. A set of objects is a set of objects of the same type (with the same properties). we represent the database of intelligent communication systems as a model of the interaction of objects using the model IDEF1x (2 models, -pictures).

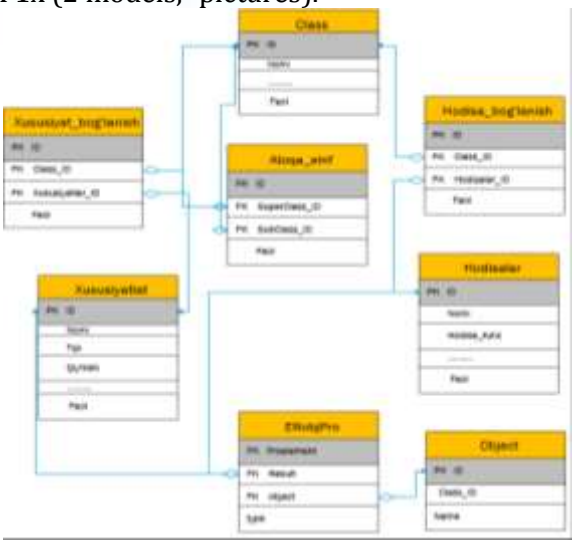

Figure 3. the IDEF1x model of data used for ontology knowledge in a database.

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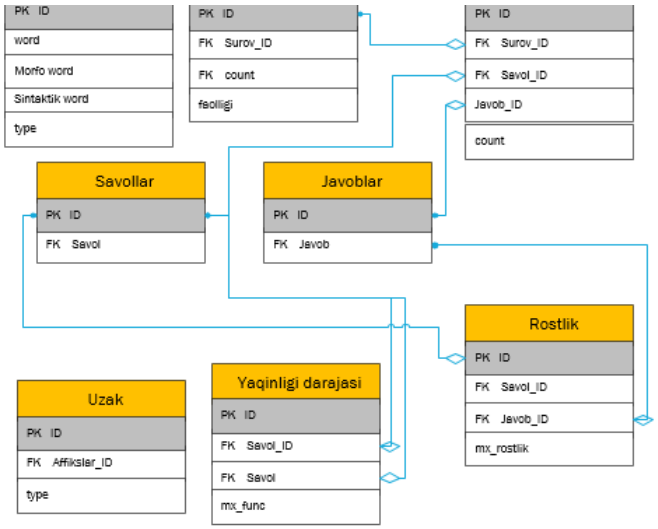

Figure 4. the IDEF1x model of the data used to analyze the communication script and natural language queries in the database.

In this proposed model of the interaction of objects (-pictures), the relationship between the objects is established on the principle of "together - many" and serves to ensure the management of the database. Modern data manipulation languages SQL, QBE, ISBL, etc. are used to perform a wide range of operations using DataBase and to manage DB. These actions include:

1. Actions for data: selecting, writing, modifying, deleting data;
2. Data processing operations: arithmetic expressions (calculations, comparisons);
3. Triggers and print commands;
4. Aggregate functions. Aggregate functions are functions that are applied to metadata to calculate a single value. For example, it is understood to calculate the maximum or minimum value of metadata, the sum, the arithmetic mean.

In general, database operations are written to the controllers of each table, adapting the database operations to the programming language. We do not consider it expedient to dwell on these actions, as they are constantly written on the basis of a structure and algorithm.

2. CONCLUSION

This chapter analyzes the creation of module software that facilitates the creation of queries based on intelligent communication systems and formulates the main results of the research:

- Functional structure and scheme of communication scenario systems were developed and proposed;
- The organization of IM scripts based on rules is based on a certain "de facto" standard, and on this basis we have created the components of the system.
- Software knowledge base was designed and a model was created based on IDEF1x management models;
- The Petri-model of the IM scenario network was analyzed;
- MB design stages were identified;

Based on intellectual communication systems, the creation of a module software that facilitates the creation of queries was formed..

REFERENCES

[1] Muminov B.B., Bekmurodov U.B. Introduction of search-based models in automatic machine systems Uzbekistan-Malaysia international online conference on "Computational models and technologies (cmt2020)" 24-25 august 2020

[2] Muminov B.B., Bekmurodov U.B. IDEF Models And Innovative System For Search Data In Stochastic Information Environment The 14th IEEE International Conference

[3] Muminov B.B., Bekmurodov U.B. The efficiency of the FSV model in an intelligent search engine 11th Scientific Conference on "Intelligent systems for industrial automation-WCIS 2020". November 26-28, 2020 in Tashkent. https://www.scopus.com/record/display.uri?eid=2-s2.0-85104886996&origin=resultslist

[4] Muminov B.B. Methods of information retrieval and cash algorithms. Transactions of the international scientific conference "Perspectives for the development of information technologies ITPA – 2014" 4-5 November 2014. 194-196 p.

[5] Muminov B.B., Bekmurodov U.B. FVS-TECHNOLOGY: INTELLECTUAL SEARCH TOOLS IIUM Engineering Journal, Vol. 22, No. 1, 2021. 22(1), c. 118-128 https://journals.iium.edu.my/ejournal/index.php/iiumej/article/view/1389