Використання сучасних технологій, таких як Python, PostgreSQL, SQLAlchemy та KivyMD, дозволило створити зручну та гнучку платформу для користувачів різного рівня знань. Завдяки інтеграції бази даних і функцій захисту облікових записів користувачів, система забезпечує безпечне та ефективне збереження даних.

Впровадження такої автоматизованої системи сприяє поліпшенню якості навчального процесу, дозволяючи користувачам більш ефективно засвоювати матеріал, працювати з інтерактивними вправами та отримувати миттєвий зворотний зв’язок на свої дії.

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DATALOGIC MODEL FOR DETERMINING THE CLIENTS COMPATIBILITY BASED ON QUESTIONNAIRES DATA ANALYSIS BY ARTIFICIAL INTELLIGENCE MEANS

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Previously, people met on the street, in bars or at other public events, that is, in places where other people are present. Today, one more method can be added to this method - online dating. Online dating has certain advantages. First of all, if you don't

like a person, you can simply ignore them. Also, the large influx and number of active users of such services provides a large selection of candidates for communication, which leads to the need for their filtering. In the 19th century, this procedure took place at the level of parents. Usually it was just told who you should marry or which girl to marry, but now this procedure has changed and in many cases freedom is given in communication and choosing a partner.

In order to start searching for people on dating sites, you need to create an account and fill out a questionnaire. In this questionnaire, users provide information about themselves, which helps to match interests and needs. Usually, personal data such as name, date of birth, height, weight, physique, as well as information about hobbies, work and bad habits are indicated in the questionnaire. In addition, in the questionnaire, you can indicate your dating goals, for example, looking for a serious relationship or just communication.

This information helps to select potential acquaintances that match the user's personal requirements and preferences. It helps to improve the chances of meeting the right person with whom you can develop a relationship based on common interests and goals.

The purpose of the work is the development of datalogic model for determining the clients compatibility based on questionnaires data analysis by artificial intelligence means

The frame comparison algorithm can be used to evaluate the compatibility of user questionnaires using a frame representation of knowledge. This algorithm compares the requirements and expectations of users, which were entered in the questionnaire, with the data of other users on the dating site.

In the frame comparison algorithm, criteria can be used to evaluate matches. In this case, these criteria include two surveys to form appropriate frames. The first frame contains information about the user, and the second frame contains information about the desired partner. The main criteria for comparing frames: common interests; compatibility of education; compatibility of marital status; compatibility of physical characteristics.

To start analyzing the questionnaire by the system, the user needs to set the characteristics and criteria by which the system will check the compatibility of the questionnaires. Verification of these questionnaires will be carried out by performing a certain test, in which points will be given for each matching criterion.

To determine the degree of compatibility between users, it is necessary to establish compatibility rules. For example, if user A is looking for a partner between the ages of 25 and 30, then users outside of that age range will not receive compatibility points.

After comparing questionnaires according to these criteria, the system displays the percentage of questionnaire compatibility. That is, the system compares two frames: the frame of the specific user and the frame of the user's expectations. The result of compatibility is a number that is calculated based on the matches of the given criteria. The more criteria match, higher percentage of compatibility will be.

The mathematical model of the compatibility method will have the following form $\sum_{n=1}^{k} \frac{1}{k}$, where *k* is the total number of evaluation criteria.

If the criteria have sub-criteria, then the maximum percentage for the criterion will be the sum of the matches of the sub-criteria. This is necessary, for example, for a hobby. If the total number of criteria is 10, then 10% is added for matching one criterion. If, for example, this criterion is a hobby of the user, then there can be many of them. For example, if the user has four hobbies, then 2.5% will be added for matching one.

The input data for the system is data about the desired user. This data set includes: gender, age, height, income level, education, occupation, city, hobbies, and marital status.

Stage 1. At this stage, the system forms a frame from the input data for further comparison.

Stage 2. The system compares user frames and the searched frame. According to the coincidence between the given frames, each frame has its own percentage of coincidence. After comparing all users, the system automatically filters out all questionnaires with a matching percentage of less than 50%.

Stage 3. The system indicates which of the candidate's parameters did not match the expected result. Sorts the list of applications by the percentage of matches, and sends the user the top 5 candidates.

Output data. The system forms an expert opinion for each questionnaire. The user is offered a list of the top 10 candidates.

The corresponding information system is intended for use by many users. Therefore, it is necessary to store data about these users somewhere [1]. For this, it is necessary to design and create a database [2, 3]. To create a database, you need to create tables and relations between these tables [4, 5]. It was necessary to create a data logic model of the database, which is depicted in Figure 1.

This policy has the following entities: frames of professions; user frames (UserFrames); hobby frames; cities; countries; degrees of education; education; sex

To describe the essence of the user's profession, you need to create a table with the following fields: Id, Name, Description.

In order to attach a frame to a user's account, you need to create a "UserFrames" table with the following fields: Id, Name, Surname, Education, Income, Age, Sex, PersonalityType, Height, Weight, Stature, ProfessionId, CityId.

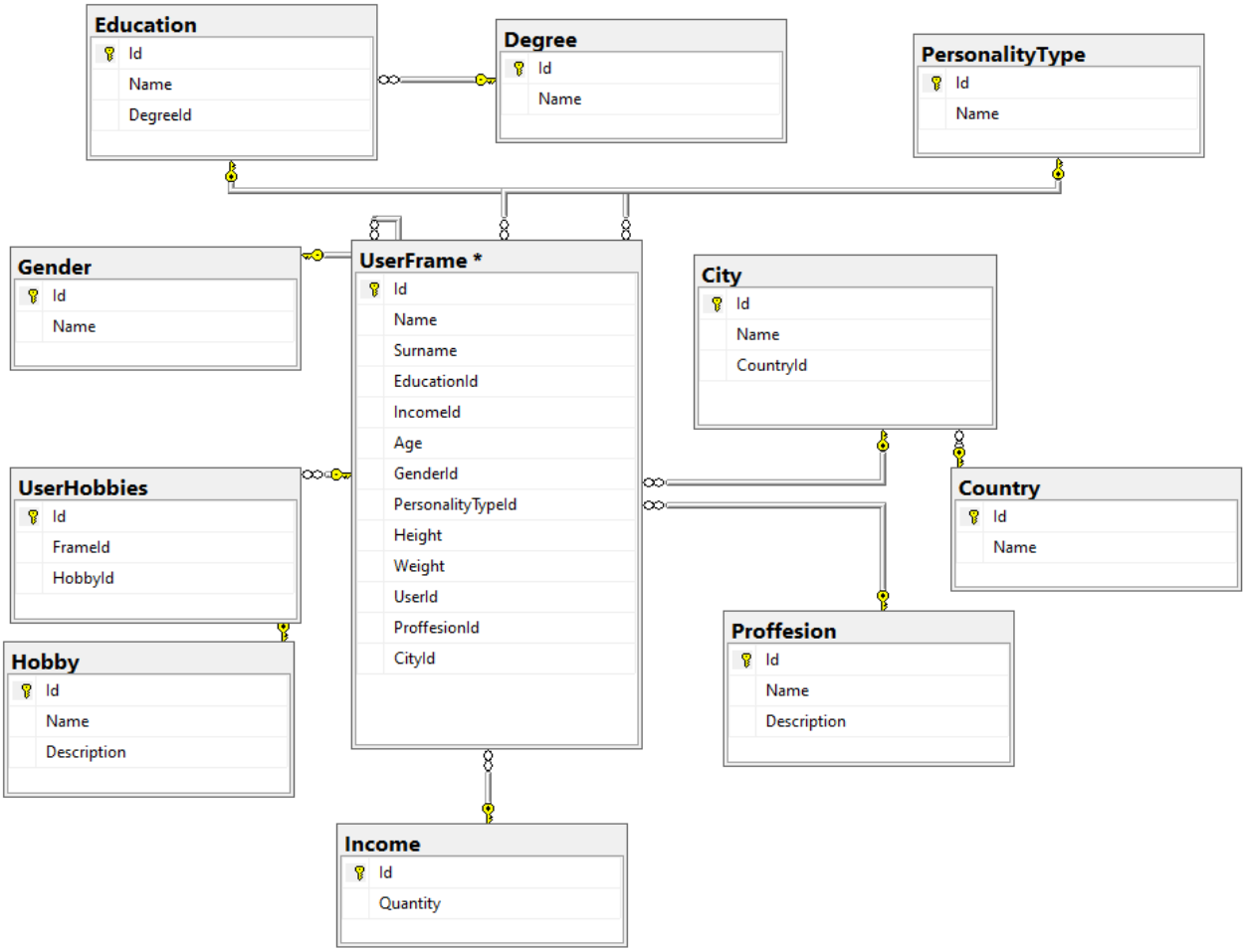

Figure 1. Datalogic model for determining the clients compatibility

To describe the essence of the user's city of residence, you need to create a table with the following fields: Id, Name, CountryId. To describe the entity of the country, you need to create a table with the following fields: Id, Name. To describe the hobby entity, you need to create a "Hobbies" table with the following fields: Id, Name, Description. A user can have many hobbies, and for this you need to make an additional table listing the user's hobbies. This table should have the following fields: Id, UserId, HobbyId. To describe the entity of gender, you need to create a table "Gender" with the following fields: Id, Name. To describe the entity of gender, you need to create a table "Gender" with the following fields: Id, Name. The "Degree" table is created to record degrees of education and has the following structure. To describe the personality type entity, you need to create a "PersonalityType" table with the following fields: Id, Name. To describe the income entity, you need to create the "Income" table with the following fields: Id, Quantity.

Also, the following data logical data model was generated to save the data of users of the dating website (Figure 2). This database data model is needed to manage user accounts and link frames to accounts.

Figure 2. Datalogic model of the website database

Therefore, the Datalogic Model for Determining the Clients Compatibility Based on Questionnaires Data Analysis by Artificial Intelligence Means was designed. To determine compatibility between users, the system uses a test in which points will be added for each matching criterion. After comparing the questionnaires according to these criteria, the system displays the percentage of compatibility of the questionnaires, which is calculated based on the matches of the given criteria. The more criteria match, the higher the match percentage. The need to create a database for the information system, which is intended for many users, was also described in detail. Table structures and fields for storing data on frames, professions, hobbies, cities and countries, gender, personality types, income, education, and education levels are described. It was also pointed out the need to create an additional table to store information about the hobbies of users, since they can have many different hobbies. Using a database will allow efficient and convenient storage and processing of data about users and their interests.

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USE OF DYNAMIC FORMS FOR ANALYSIS OF DATA USING EXCEL AND VBA

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Big data analytics as a new innovative tool in e-commerce plays an important role in helping enterprises. The study results can improve the implementation of big data analytics and digital technologies in organizations.

When working with a software product, there may be a need to dynamically change the number of controls on a user form, such as using dynamic buttons, option buttons, entering complex formulas, etc. This depends on the fact that it is not known in advance how many buttons may be needed when working with the application, or