OTTOMAN ULEMA in DIGITAL WORLD

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1) Abstract

This project aims to develop a software based tool which is going to be used for historical research and analysis. The software based tool consists of a database and a website which are linked with each other. This database is based on the biographies of the historical characters who lived in the Ottoman era. Biographies include information about these historical characters' origins, carrier paths, family ties, educational background etc. In this wise, social and spatial network of these historical characters will be reachable from the platform that is constructed. Consequently, historians who conduct their research on social network analysis will be able to transfer, arrange, examine and visualize the data with the help of this tool.

2) Introduction

The purpose of this project is to create a software based tool for the sake of completeness and classification of huge amount of data which is related to building networks between individuals in Ottoman era and doing the social network analysis on this data. In the Ottoman period, researchers collected the biographies that consisted the information about people who had an important role in the economic and social order of the society. Later on, these recorded biographies are collected in a book called "Hadaiku'l-Hakaik"(Haz. Suat Donuk, Türkiye Yazma Eserler Kurumu Başkanlığı Yayınları, İstanbul : 2017). The reason which causes the need of this project is lack of various classifications of the biographies in these books, which were only categorized according to rulers of the period. Additionally, the language of the book was inconvenient to understand and carry on a social network analysis on it. Therefore, one of the historic objectives of this project is to translate this complicated

Ottoman Turkish into modern Turkish and make these biographies accessible. That would make the research on the ulemas lived until the reign of IV. Murat much easier for other historian fellows.

Furthermore, the type of categorization that “Hadaiku’l-Hakaik” provides, does not allow to researchers to search with different filters required (Haz. Suat Donuk, Türkiye Yazma Eserler Kurumu Başkanlığı Yayınları, İstanbul : 2017). In that case the data of Ottoman historical characters had to be investigated one by one according to their specialty. To make this process more straightforward with additional facilities, the idea of an necessary software based tool has emerged. By the help of this software based tool, social scientists would be able to sort searching of those historical characters by their lifetime dates, workplaces, locations, family ties, educational backgrounds etc. Intercalarily, scientists will have a ability to use these filters in different algorithms. Afterwards, these inquiries will be used for social network analysis of early modern Ottoman ulema. Furthermore, analysis results will be visualized to facilitate the work of social scientists. To reach this aim, in this project the collection of 1133 biographies which has information of Ottoman ulema for the period 1558-1634, is being scrutinised from the book named “Hadaiku’l-Hakaik”(Haz. Suat Donuk, Türkiye Yazma Eserler Kurumu Başkanlığı Yayınları, İstanbul : 2017). The information that is extracted from the biographies transferred to database throughout the webform. At the end of this project, relations will be visualized based on this datasets.

3) Project Process

3.1 Historical Studies

3.1.a Process

This projects’ historical purpose was to make an social network analysis on ottoman ulemas’ who lived between reign of Süleyman I and Murat IV.. Nevertheless, while the project is going on more specific topics included to the biographical informations regarding historical characters who lived in ottoman era, like important historic events and work relation between ulemas. Additively, according to more comprehensive biographies it is detected that the book,

"Hadaiku'l-Hakaik"(Haz. Suat Donuk, Türkiye Yazma Eserler Kurumu Başkanlığı Yayınları, İstanbul : 2017), also has information about from whom they have taken courses and what kind of courses they are. For greater convenience of users' interface, the biographies are enlarged with respect to informations in the source (Haz. Suat Donuk, Türkiye Yazma Eserler Kurumu Başkanlığı Yayınları, İstanbul : 2017).

Firstly, as historian students, the data is analysed and optimized according to how would it be more functional when the data entry has started. Afterwards, since the book was written in Ottoman Turkish, the second task was to translate biographies into modern Turkish. While doing translations the real meanings of the words are concerned. The source contains lots of poems, gossips, and praise in the biographies. However, in this study it is focused on the place of birth, educational and bureaucratically backgrounds, the date of death, and family background. Praises and poems are not translated as they are not the goals of this research. At the same time, the ulema are arranged according to their dates of death. Significant events, wars, and the relations between the ulemas are also concerned while forming the new biographies.

3.1.b Materials & Methodology

Main Source:

"Hadaik-ül-Hakayık fi Tekmilet-iş Şakayık"

Şakayık Zeyli written by Atai is a continuation of Şakâ'iku'n-Nu'mâniye, which tells the biographies of Ottoman poets, sheiks, and intellectuals. It contains the biographies of ulemas and sheiks lived from the era of Kanuni Sultan Süleyman to Atai. There are 1100 biographies written in 78 years. Approximately 830 of these biographies belong to the lives of ulemas.

The original work was written in Arabic letters in Ottoman Turkish. During the project Suat Donuk's

Latinized version of Hadaik-ül-Hakayık fi Tekmilet-iş Şakayık has been used. It has 2157 pages and two books.

Additional Sources

Various dictionaries are used in order to understand Arabic and Persian words. These are:

- Turkish and English Lexicon (Sir James W. Redhouse)
- Kamus-i Türki (Şemseddin Sami)
- Osmanlıca – Türkçe Ansiklopedik Lügat (Ferit Devellioğlu)
- Lugatim.com

The source that are used for city names:

- Osmanlı Yer Adları Sözlüğü (Nuri Akbayar)

Methodology and a Biography Sample

Full name: EL MEVLA EL AZAM ZEKERİYYA EFENDİ
His known name: ZEKERİYYA EFENDİ HAZRETLERİ
Nickname: MEYLİ

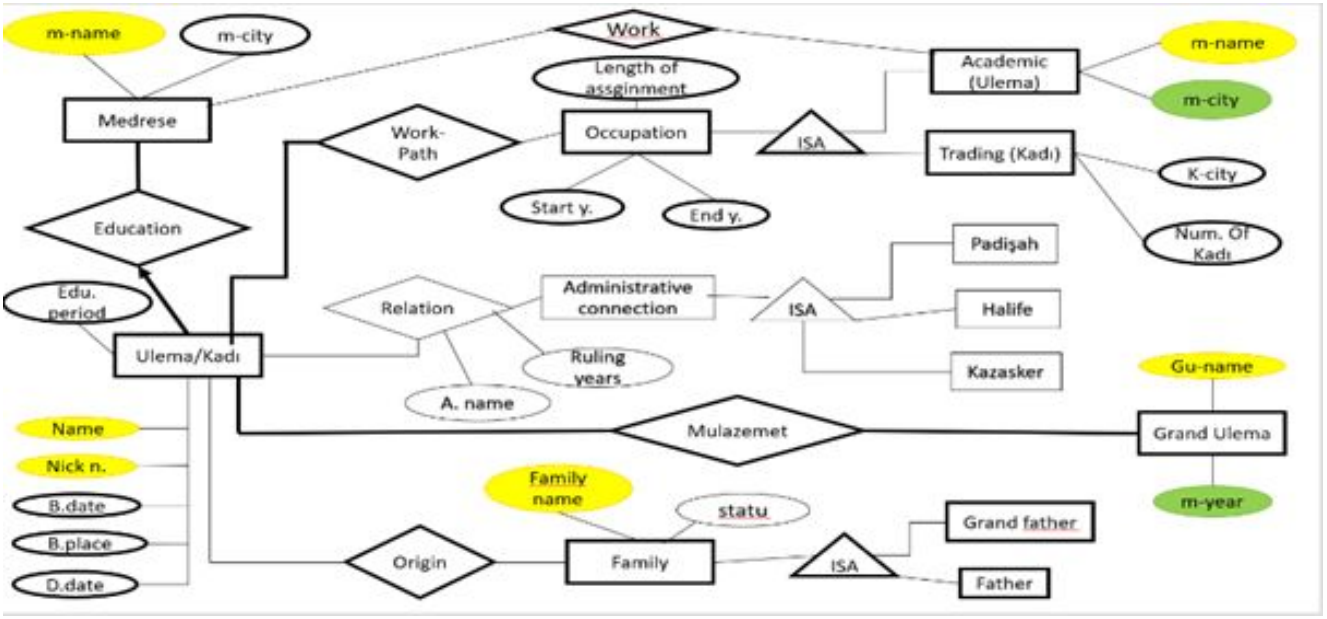
- He was born in 920 in Ankara.
- His brother was Yakub Efendi.
- He was educated by Arabzade Abdulbaki Çelebi from Sahn-ı Semaniye.
- He was also educated by Malul Emir Efendi. When Malul Efendi became a *kadı* for the second time in 950, he went to Kahire with him. In 954 Muharrem, as his teacher became *Anatolian Kazaskeri*, he became a *tezkire* (a collector of biographies) and received *a mülazemet* in *Şaban* month.
- He was appointed to Bursa's Hamza Beg Madrasah for 20 akçe.
- He promoted by the request of Kara Çelebi.
- He attended to the conquest of Nahcivan during the reignof . Süleyman I. He was close to the sultan in Haleb. Then, he was appointed to the madrasah of Çendik for 30 akçe.

- He was appointed to the madrasah of Kapluca for 40 akçe.
- He resigned at the end of 970.
- He was appointed to the madrasah of Atik Ali Paşa in Rebiyülahir 973 through an examination.
- He was appointed to the madrasah of Üç Şerefeli in Şevval 975.
- He was appointed to the madrasah of Sahn-I Semaniye in Zilkade 977.
- He was appointed to the Darülhadis of the sultan Selim-I Kadim in Safer 980.
- He became the kadı of Haleb in safer 981.
- He was forced to resign in Zilkade 982.
- He became the kadı of Bursa in Şaban 985.
- He resigned in Rebiyülevvel 988.
- He became the kadı of Istanbul in Zilhicce 988.
- He became an Anatolian kazasker in Zilhicce 989.
- He retired in Rebiyülahir 991.
- He went to hajj through Şam in 994.
- He was appointed to the darülhadis of Süleymaniye in Cemaziyelevvel 995.
- He became a Rumelian Kazasker in Cemaziyelevvel 997.
- He was forced to resign in Şaban 998.
- He became a Rumelian kazasker in Receb 999.
- He became a Şeyhülislam in Receb 1000.
- He died in 12 Şevval 1001.
- He builta darülhadis near Sultan Selim Mosque.
- He has a madrasa in Istanbul.

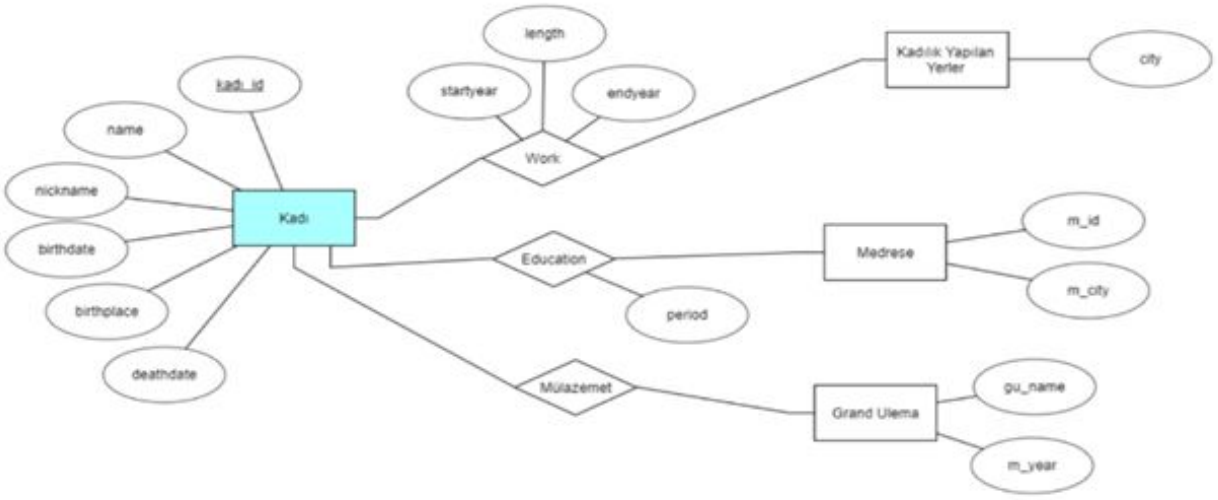
3.2 Computer Science Studies, Materials and Methods

Firstly, an ER diagram was created in order to develop and enlarge a database based on the biographical information of historical characters to collect and use the data in efficient way. ER diagram is a visual representation of a database system where each attributes' relation (e.g. name, birthdate, name of their children) could be clearly observed and marks an important role before coding the database itself. During our research, numerous ER diagrams were built according to changes in the

attributes that were going to be involved and our engineering teams' competence in producing such a schema.

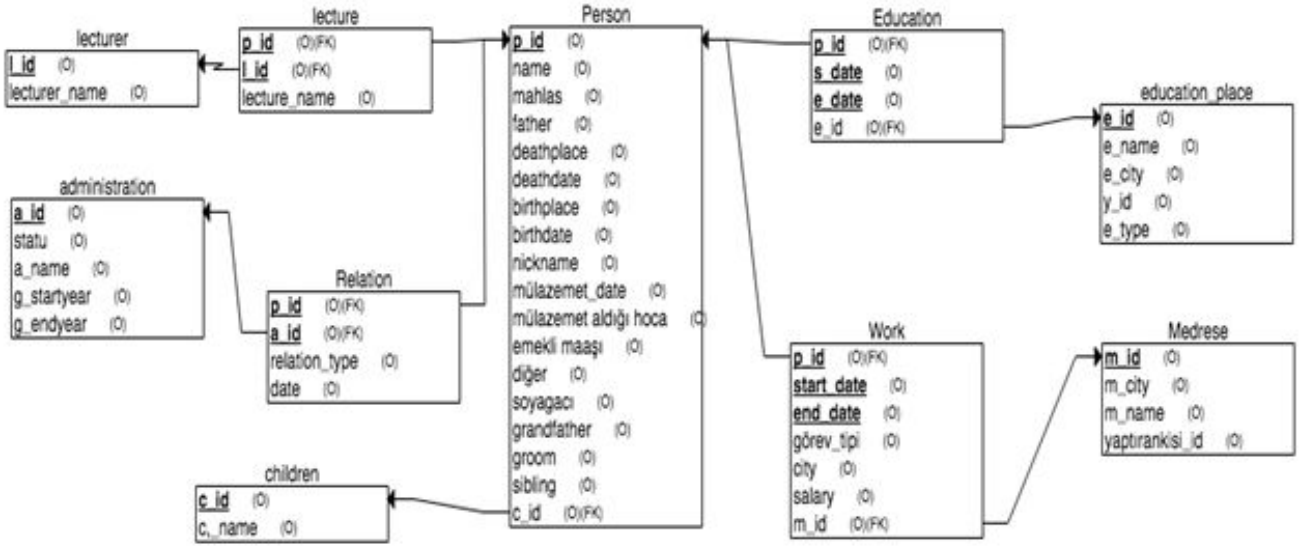


First ER diagram. Much more complex and less efficient compared with its successors.



Simpler and second version of the ER diagram.

Latest version of ER diagram that is regulated according to information that was found in recent steps of the project.



Relational schema that was created based on latest ER diagram.

After the design, the representative database, and the website that would be the interface for the social researchers to input data, these improvements had to be implemented into a computer that would be a server to other computers residing in the Sabanci University campus.

A sample computer system was set in the Cryptography and Information Security Laboratory that would use Ubuntu operating system. Ubuntu is a widely preferred version of Linux operating system which is free to install and use. Then, a software package called XAMPP was loaded to handle with database and website construction, along with making it accessible to other individuals located in the campus by entering the IP address of the server.

Subsequently, database codes shaped with MySQL were integrated to the server which created a legitimate platform for the data to be stored.

Afterwards, an exemplar website was built for making the necessary data entry possible for the historians. Apache Server, a service provided by XAMPP, was used to make the website accessible. For design of interface of the website HTML (HyperText Markup Language) and CSS (Cascading Style Sheets) technologies were preferred. The platform's connection with the previously mentioned database was maintained with PHP (Personal Home Page) programming language.

The users are welcomed with a home page section when they enter the website. Two options are available for the user to choose. The option that makes them add new data about a new Ulema and the one that make visual data analysis possible for research purposes. Although the analysis part of the project is not completed yet, the users can enter data successfully.

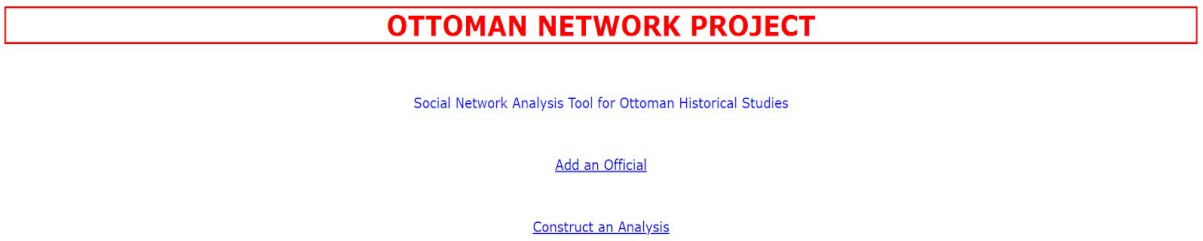
When user click onto “Add an Official” part, five consecutive screens will be encountering with them. These pages represent different attributes of the Ulema added.

```
CREATE TABLE medrese
(
  m_id INT AUTO_INCREMENT,
  m_city CHAR(50),
  m_name CHAR(100),
  yaptirankisi_id INT,
  PRIMARY KEY (m_id)
);

ALTER TABLE medrese AUTO_INCREMENT=1;

CREATE TABLE education_place
(
  e_id INT AUTO_INCREMENT,
  e_name CHAR(100),
  e_city CHAR(50),
  y_id INT,
  e_type CHAR(50),
  PRIMARY KEY (e_id)
);
ALTER TABLE education_place AUTO_INCREMENT=2000;


CREATE TABLE administration
(
  a_id INT AUTO_INCREMENT,
  statu CHAR(100),
  a_name CHAR(200),
  g_startyear DATE,
  g_endyear DATE,
  PRIMARY KEY (a_id)
);


ALTER TABLE administration AUTO_INCREMENT=4000;

CREATE TABLE lecturer
(
  l_id INT AUTO_INCREMENT,
  lecturer_name CHAR(200),
  PRIMARY KEY (l_id)
);

ALTER TABLE lecturer AUTO_INCREMENT=6000;
```

```
CREATE TABLE person
(
  p_id INT AUTO_INCREMENT,
  name CHAR(200),
  mahlas CHAR(100),
  father CHAR(200),
  deathplace CHAR(50),
  deathdate DATE,
  birthplace CHAR(50),
  birthdate DATE,
  nickname CHAR(200),
  mulazemet_date DATE,
  mulazemet_aldigi_hoca CHAR(200),
  emekli_maasi INT,
  diger CHAR(250),
  soyagaci CHAR(100),
  grandfather CHAR(200),
  groom CHAR(200),
  sibling CHAR(200),
  c_id INT,
  PRIMARY KEY (p_id)
);

ALTER TABLE person AUTO_INCREMENT=20000;

CREATE TABLE work
(
  start_date DATE,
  end_date DATE,
  gorev_tipi CHAR(50),
  city CHAR(50),
  salary INT,
  p_id INT,
  m_id INT,
  PRIMARY KEY (start_date, end_date, p_id),
  FOREIGN KEY (p_id) REFERENCES person(p_id),
  FOREIGN KEY (m_id) REFERENCES medrese(m_id)
);

CREATE TABLE education
(
  s_date DATE,
  e_date DATE,
  p_id INT,
  e_id INT,
  PRIMARY KEY (s_date, e_date, p_id),
  FOREIGN KEY (p_id) REFERENCES person(p_id),
  FOREIGN KEY (e_id) REFERENCES education_place(e_id)
);


CREATE TABLE children
(
  c_id INT AUTO_INCREMENT,
  c_name CHAR(200),
  p_id INT,
  PRIMARY KEY (c_id),
  FOREIGN KEY (p_id) REFERENCES person(p_id)
);
```

```
ALTER TABLE children AUTO_INCREMENT=8000;

CREATE TABLE relation
(
  relation_type CHAR(100),
  date DATE,
  p_id INT,
  a_id INT,
  PRIMARY KEY (p_id, a_id),
  FOREIGN KEY (p_id) REFERENCES person(p_id),
  FOREIGN KEY (a_id) REFERENCES administration(a_id)
);

CREATE TABLE lecture
(
  lecture_name CHAR(50),
  p_id INT,
  l_id INT,
  PRIMARY KEY (p_id, l_id),
  FOREIGN KEY (p_id) REFERENCES person(p_id),
  FOREIGN KEY (l_id) REFERENCES lecturer(l_id)
);
```

MySQL codes of the database. As a second step, database was implemented to web while creating the web form.



Home page of the website

First page of the website.

4) Conclusion and Future Work

It was learnt that this project is feasible although more time is required. In this summer, historians developed their translating and literature reading abilities while engineering students advanced their web development and database design skills. Also, both historians and engineers made themselves acquainted with getting on with people belonging to another faculty which increased the team's stamina for creating a multidisciplinary project.

Even though the summer was a efficient period for making this research alive there are more future work accomplish. Primarily, the minor errors in the website must be corrected in order to give the users a better experience. Secondly, the website must be within reach not only in Sabanci University campus but in every part of the world so that more researchers would be able contribute to the project. Lastly, data analysis and visualization, the main core of this study, has to implemented within options given to the user to project their desired network of people according to desired preferences.

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