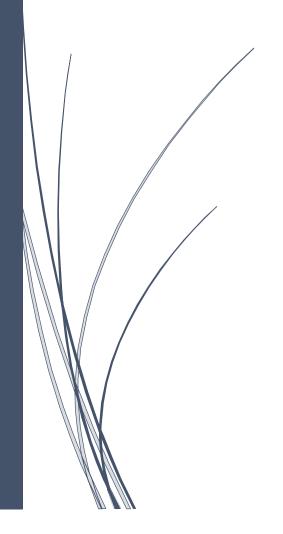
07.01.2024

DATABASE
MANAGEMENT
SYSTEMS FINAL
PROJECT



INTRODUCTION

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THES_NO	THES_TITLE	THES_ABS	AUTHOR_ID	CSV_ID	THES_YEAR	THES_TYPE	UNI_ID	INS_ID	THES_NOP	LANG_NAM	ME THES_SUB	DATE	
1	Diagnosis and Treatment of Genetic Diseases	This thesis examines the developments in the dia	101	2	2022	Specialization in Med	licine 1	111	50	English	2022-05-15		
2	Machine Learning in Finance	An analysis of machine learning algorithms in fina	102	1	2021	Master	2	112	75	Turkish	2021-12-10		
3	Cybersecurity Measures in IoT	Examining cybersecurity measures for Internet of T	103	3	2023	Doctorate	1	113	60	English	2023-03-20		
4	Artificial Intelligence and Ethical Dilemmas	This thesis examines the ethical issues that arise	104	4	2022	Master	3	111	45	France	2022-08-28	n e	
5	Augmented Reality in Education	The use of augmented reality for enhancing educa	101	5	2023	Doctorate	2	112	55	English	2023-01-12		
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THES_NO 1 2 3	Diagnosis and Treatment of Genetic Diseases Machine Learning in Finance	This thesis examines the developments in the dia An analysis of machine learning algorithms in fina	Yahya Egemen	2022 2021	Special Master	ization in Medicine M N ste M	faltepe Universit farmara Univers	y Comp ity Finar y Cyber	outer Science Ir ice Institute	75 e 60	nber_of_Paages	English Turkish	2022-05-15 2021-12-10

	SV_ID	SV_NAME
1	1	Assist. Prof. Dr. Volkan TUNALI
2	2	Prof. Dr. Ensar GÜL
3	3	Prof. Dr. Asaf VAROL
4	4	Dr. Ö?r. Üyesi Hüseyin AYGÜN
5	5	Dr. Ö?r. Üyesi Emre OLCA

	UNI_ID	UNI_NAME
1	1	Maltepe University
2	2	Marmara University
3	3	Elazig University
4	4	Yeditepe University
5	5	Basaksehir Unive

	LANG_NAME
1	Dutch
2	English
3	France
4	Turkish

	AUTHOR_ID	AUTHOR_NAME	AUTHOR_PASSWORD
1	101	Yahya	123456
2	102	Egemen	987654
3	103	Mehmet Ali	543210
4	104	Esma	111222
5	105	Ahmet	333444

	CSV_ID	CSV_NAME
1	1	Dr. Anderson
2	2	Prof. Rodriguez
3	3	Dr. Williams
4	4	Prof. Davis
5	5	Dr. Moore

	KEYWORD_ID	KEYWORD_NAME	THES_NO		INS_ID	INS_NAME	UNI_ID
1	1	Healthcare	1	1	111	Computer Science Institute	1
2	2	Financial Forecasting	2	2	112	Finance Institute	2
3	3	IoT Security	3	3	113	Cybersecurity Institute	1
4	4	Artificial Intelligence	4	4	114	Environmental Studies In	3
5	5	Educational Techno	5	5	115	Education Institute	2

	SV_ID	THES_NO
1		1
2	2	2
3	3	3
4	4	4
5	5	5

	SUBJECT_TOPIC_ID	SUBJECT_TOPIC_NAME	THES_NO
1	1	Genetic Diseases	1
2	2	Machine Learning	2
3	3	Cybersecurity	3
4	4	Artificial Intelligence	4
5	5	Augmented Reality	5

	Supervisor_Name	Thesis_Title
1	Assist. Prof. Dr. Volkan TUNALI	Diagnosis and Treatment of Genetic Diseases
2	Prof. Dr. Ensar GÜL	Machine Learning in Finance
3	Prof. Dr. Asaf VAROL	Cybersecurity Measures in IoT
4	Dr. Ö?r. Üyesi Hüseyin AYGÜN	Artificial Intelligence and Ethical Dilemmas
5	Dr. Ö?r. Üyesi Emre OLCA	Augmented Reality in Education

-CODES-

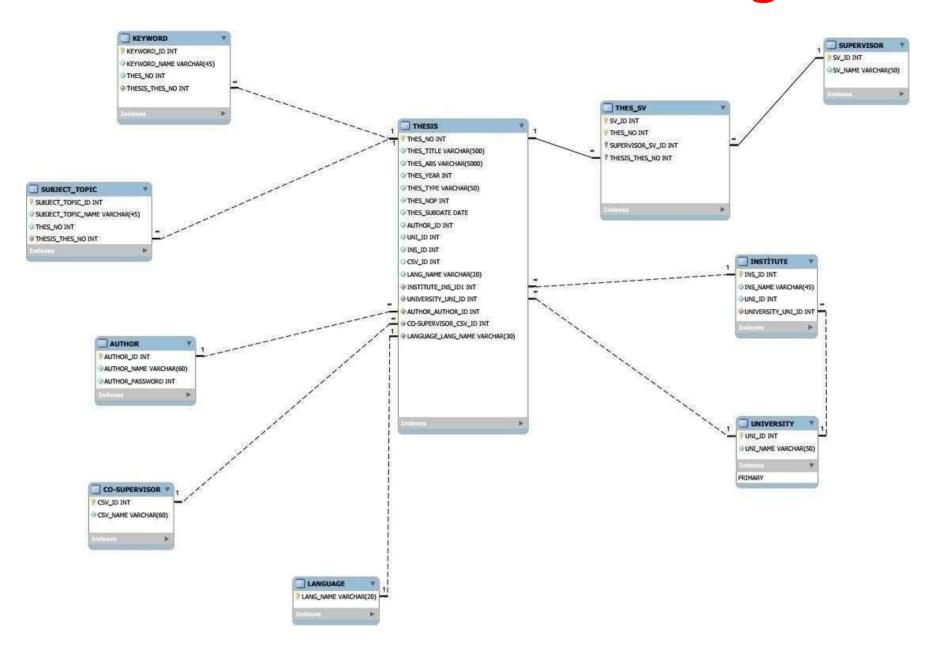
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create database DBMS Proje;
use DBMS Proje;
-- University Table
CREATE TABLE University (
  UNI ID INT PRIMARY KEY,
  UNI_NAMEVARCHAR(50) NOTNULL
);
-- Institute Table
CREATE TABLEInstitute (
  INS_ID INT PRIMARY KEY,
  INS NAMEVARCHAR (45) NOT NULL,
  UNI_ID INT NOT NULL,
  FOREIGN KEY (UNI_ID) REFERENCES University (UNI_ID)
);
-- Author Table
CREATE TABLE Author (
  AUTHOR ID INT PRIMARY KEY,
  AUTHOR NAMEVARCHAR(60) NOT NULL,
  AUTHOR PASSWORDINT
);
-- Laguage Table
CREATE TABLE Language (
  LANG_NAMEVARCHAR(20) PRIMARYKEY
);
-- Co-Supervisor Table
CREATETABLE Co_Supervisor (
  CSV_ID INT PRIMARY KEY,
  CSV_NAME VARCHAR(60)
);
-- Thesis Table
CREATE TABLE Thesis (
  THES_NO INT PRIMARY KEY,
  THES_TITLE VARCHAR(500) NOT NULL,
  THES ABS VARCHAR (5000) NOT NULL,
  AUTHOR_ID INT NOT NULL,
       CSV_ID INT,
  THES YEAR INTNOT NULL,
  THES TYPE VARCHAR(50) NOT NULL,
  UNI_ID INT NOT NULL,
  INS ID INT NOT NULL,
  THES_NOP INT NOT NULL,
  LANG_NAMEVARCHAR(20) NOT NULL,
  THES_SUBDATE DATE NOT NULL,
  FOREIGN KEY (LANG NAME) REFERENCES Language (LANG NAME),
  FOREIGN KEY (AUTHOR ID) REFERENCES Author (AUTHOR ID),
       FOREIGN KEY (CSV_ID) REFERENCES Co_Supervisor(CSV_ID),
  FOREIGN KEY (UNI_ID) REFERENCES University(UNI_ID),
```

```
FOREIGN KEY (INS ID) REFERENCES Institute (INS ID),
  UNIQUE (AUTHOR ID, UNI ID, INS ID)
-- Subject Topic Table
CREATE TABLE Subject Topic (
  SUBJECT TOPIC ID INT PRIMARY KEY,
  SUBJECT TOPIC NAMEVARCHAR(45) NOTNULL,
  THES_NO INT NOT NULL,
  FOREIGN KEY (THES NO) REFERENCESThesis (THES NO)
-- Keywords Table
CREATE TABLEKeyword (
  KEYWORD ID INT PRIMARY KEY,
  KEYWORD NAMEVARCHAR(45) NOTNULL,
  THES NO INT NOT NULL,
  FOREIGN KEY (THES NO) REFERENCES Thesis (THES NO)
-- Supervisor Table
CREATE TABLE Supervisor (
  SV ID INT PRIMARY KEY,
  SV_NAMEVARCHAR(50) NOT NULL
);
-- Middle Table
CREATE TABLE Thes SV(
  SV_ID INT,
  THES_NOINT,
  PRIMARYKEY (SV ID, THES NO),
  FOREIGN KEY (SV_ID) REFERENCES Supervisor(SV_ID),
  FOREIGN KEY (THES_NO) REFERENCES Thesis (THES_NO)
);
INSERTINTOUniversity(UNI_ID, UNI_NAME)
VALUES
(1, 'Maltepe University'),
(2, 'Marmara University'),
(3, 'Elazig University'),
(4, 'Yeditepe University'),
(5, 'Basaksehir University');
INSERT INTO Institute (INS_ID, INS_NAME, UNI_ID)
VALUES
(111, 'Computer Science Institute', 1),
(112, 'Finance Institute',2),
(113, 'Cybersecurity Institute', 1),
(114, 'Environmental Studies Institute', 3),
(115, 'Education Institute',2);
INSERTINTO Author (AUTHOR ID, AUTHOR NAME, AUTHOR PASSWORD)
VALUES
(101, 'Yahya', 123456),
(102, 'Egemen', 987654),
(103, 'Mehmet Ali', 543210),
(104, 'Esma', 111222),
```

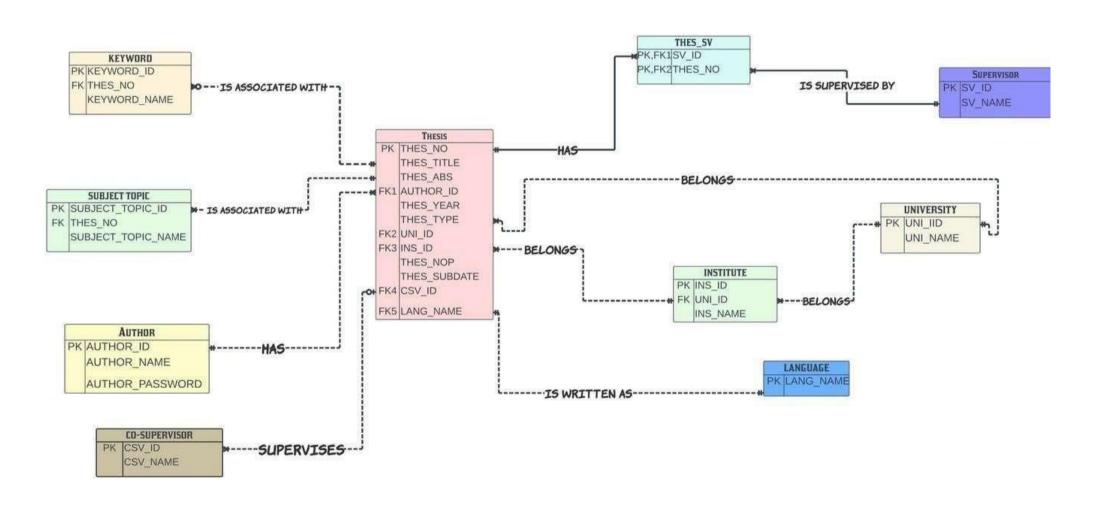
```
(105, 'Ahmet', 333444);
INSERTINTOLanguage(LANG NAME)
VALUES
('English'),
('Turkish'),
('France'),
('Dutch');
INSERTINTO Thesis (THES NO, THES TITLE, THES ABS, AUTHOR ID, CSV ID, THES YEAR, THES TYPE, UNI ID, INS ID, THES NOP,
LANG NAME, THES SUBDATE)
VALUES
(1, 'Diagnosis and Treatment of Genetic Diseases', 'This thesis examines the developments in the diagnosis and treatment of
genetic diseases.', 101, 2, 2022, 'Specialization in Medicine', 1, 111, 50, 'English', '2022-05-15'),
(2, 'Machine Learning in Finance', 'An analysis of machine learning algorithms in financial forecasting.', 102, 1, 2021, 'Master', 2,
112, 75, 'Turkish', '2021-12-10'),
(3, 'Cybersecurity Measures in IoT', 'Examining cybersecuritymeasures for Internet of Things devices.', 103, 3, 2023, 'Doctorate',
1, 113, 60, 'English', '2023-03-20'),
(4, 'Artificial Intelligence and Ethical Dilemmas', 'This thesis examines the ethical issues that arise with the increasing use of
artificial intelligence.', 104, 4, 2022, 'Master', 3, 111, 45, 'France', '2022-08-28'),
(5, 'Augmented Realityin Education', 'The use of augmented reality for enhancing educational experiences.', 101, 5, 2023,
'Doctorate', 2, 112, 55, 'English', '2023-01-12');
INSERTINTO Subject Topic (SUBJECT TOPIC ID, SUBJECT TOPIC NAME, THES NO)
VALUES
(1, 'Genetic Diseases', 1),
(2, 'Machine Learning', 2),
(3, 'Cybersecurity', 3),
(4, 'Artificial Intelligence', 4),
(5, 'Augmented Reality', 5);
INSERTINTO Keyword (KEYWORD ID, KEYWORD NAME, THES NO)
VALUES
(1, 'Healthcare', 1),
(2, 'Financial Forecasting', 2),
(3, 'IoT Security', 3),
(4, 'Artificial Intelligence Ethics', 4),
(5, 'Educational Technology',5);
INSERT INTOCo_Supervisor(CSV_ID, CSV_Name)
VALUES
(1, 'Dr. Anderson'),
(2, 'Prof. Rodriguez'),
(3, 'Dr. Williams'),
(4, 'Prof. Davis'),
(5, 'Dr. Moore');
INSERTINTO Supervisor (SV ID, SV Name)
VALUES
(1, 'Assist. Prof. Dr. Volkan TUNALI'),
(2, 'Prof. Dr. Ensar GÜL'),
(3, 'Prof. Dr. Asaf VAROL'),
(4, 'Dr. Öðr. Üyesi Hüseyin AYGÜN'),
(5, 'Dr. Öðr. Üyesi Emre OLCA');
INSERTINTOThes_SV (SV_ID,THES_NO)
VALUES
(1,1),
```

```
(2,2),
(3,3),
(4,4),
(5,5);
SELECT * FROM Author;
SELECT * FROM Language;
SELECT * FROM University;
SELECT * FROM Institute;
SELECT * FROM Supervisor;
SELECT * FROM Co Supervisor;
SELECT * FROM Subject Topic;
SELECT * FROM Keyword;
SELECT * FROM Thesis;
SELECT * FROM Thes SV;
SELECT
  t.THES_NO,
  t.THES_TITLE,
  t.THES_ABS,
  a.Author_Name ASAuthor_Name,
  t.THES_YEAR,
  t.THES TYPE,
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  i.INS_Name AS Institute_Name,
  t.THES_NOP AS Number_of_Paages,
  I.LANG_NAMEAS Language,
  t.THES_SUBDATE
FROM Thesis t
JOIN Author a ON t.AUTHOR_ID = a.AUTHOR_ID
JOIN University u ON t.UNI ID = u.UNI ID
JOIN Institute i ON t.INS_ID = i.INS_ID
JOIN Language I ON t.LANG_NAME = I.LANG_NAME;
SELECT
  s.SV_Name AS Supervisor_Name,
  t.THES_TITLE AS Thesis_Title
FROM Thes_SV tsv
JOIN Supervisor s ON tsv.SV_ID = s.SV_ID
JOIN Thesis t ON tsv.THES_NO = t.THES_NO;
```

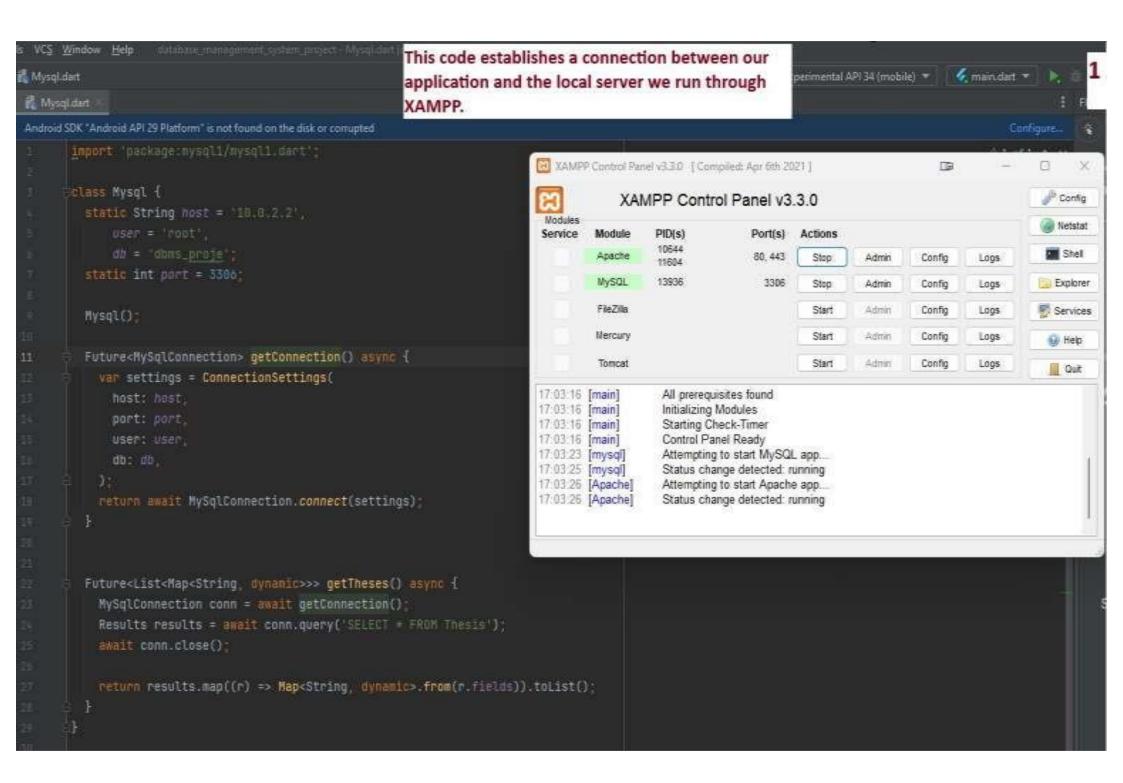
-Relational Database Diagram-



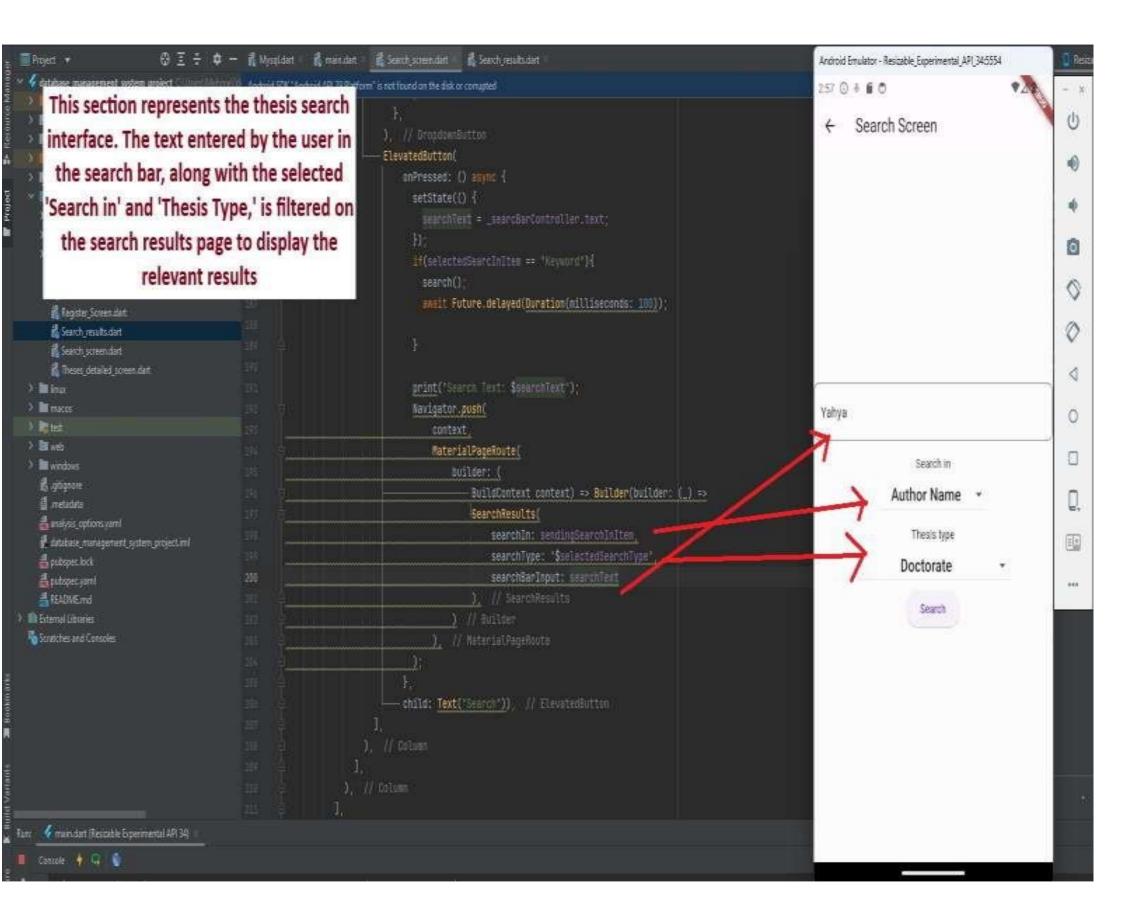
-ERD with Crow's Foot Notation-

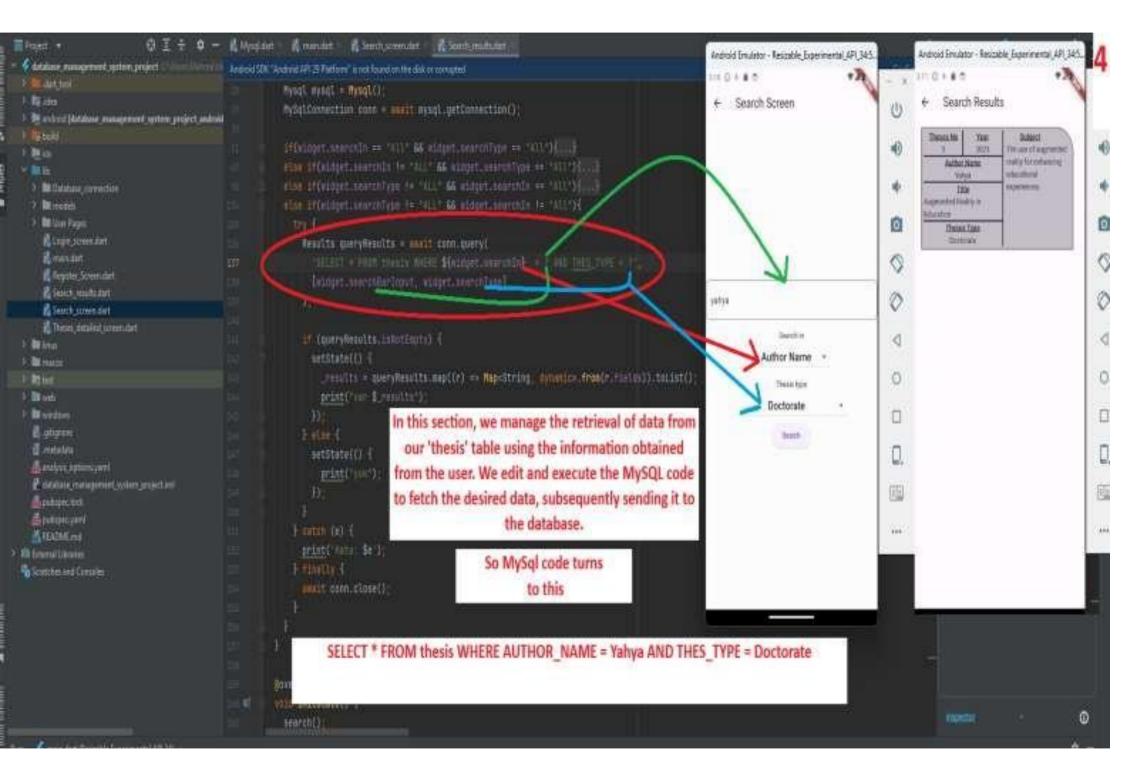


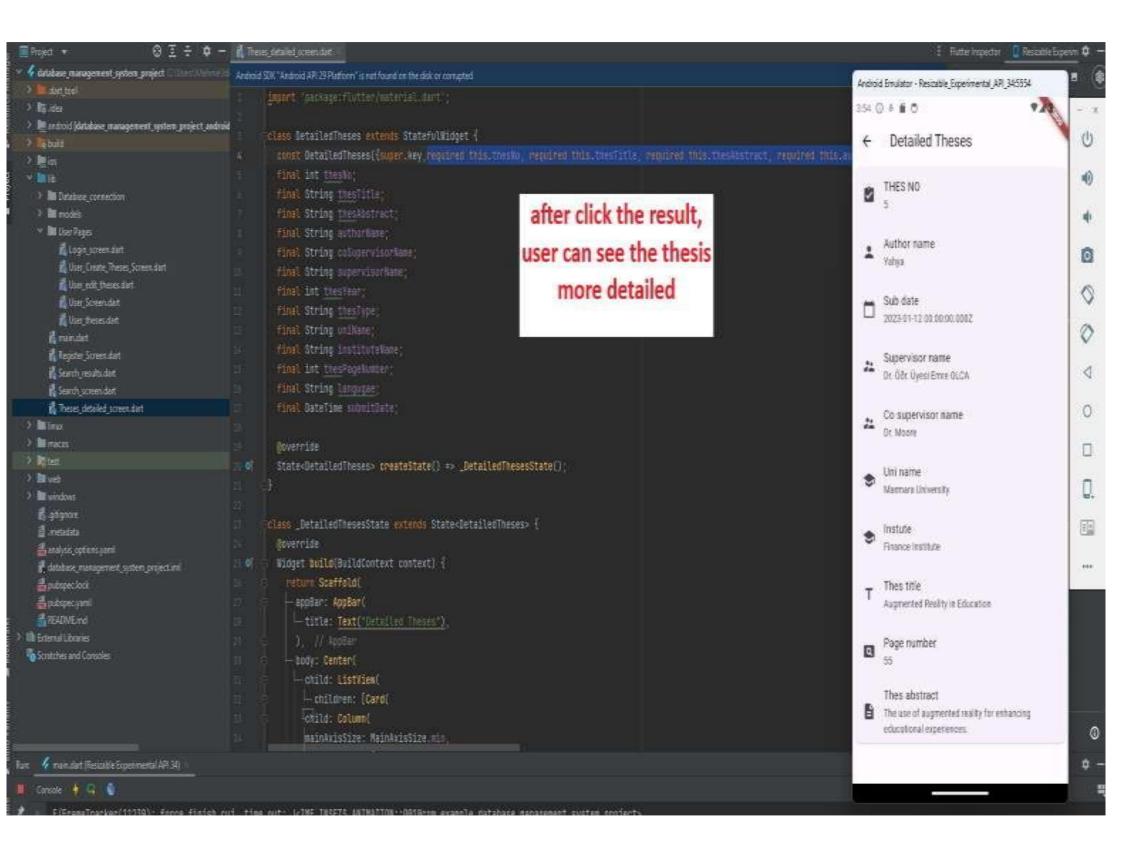
-FINAL PART-

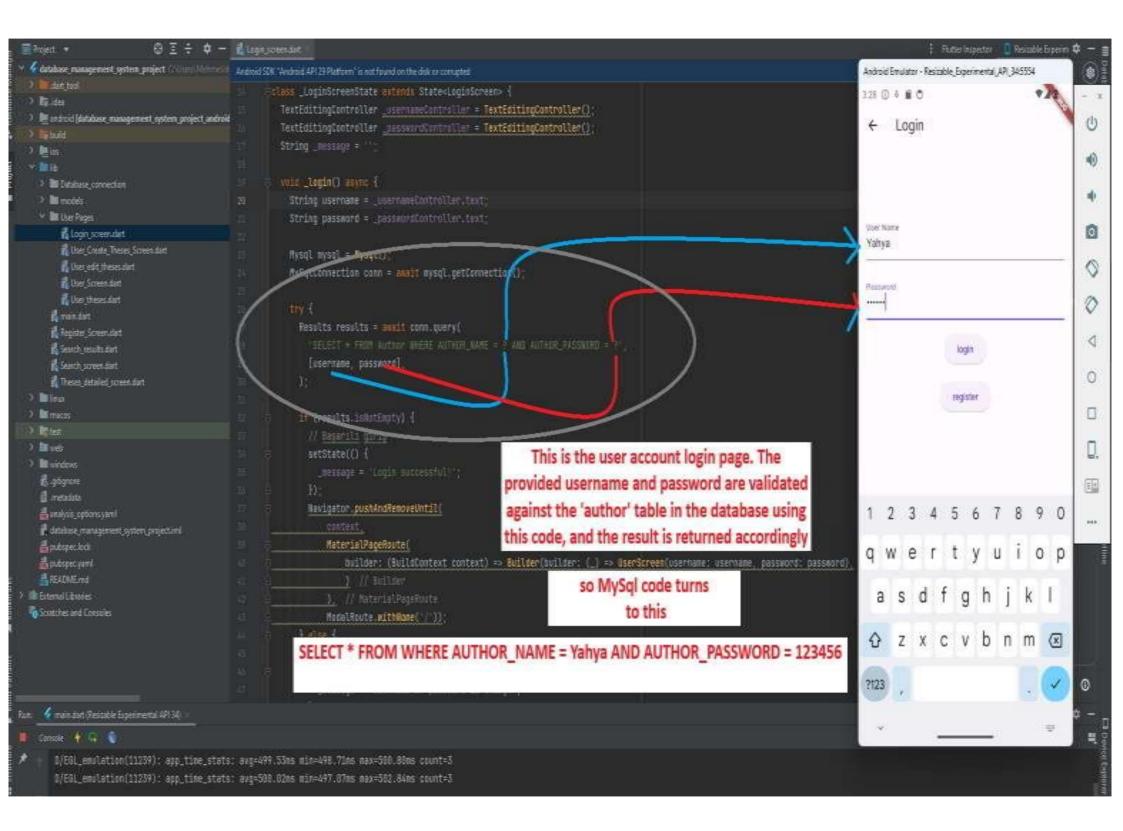


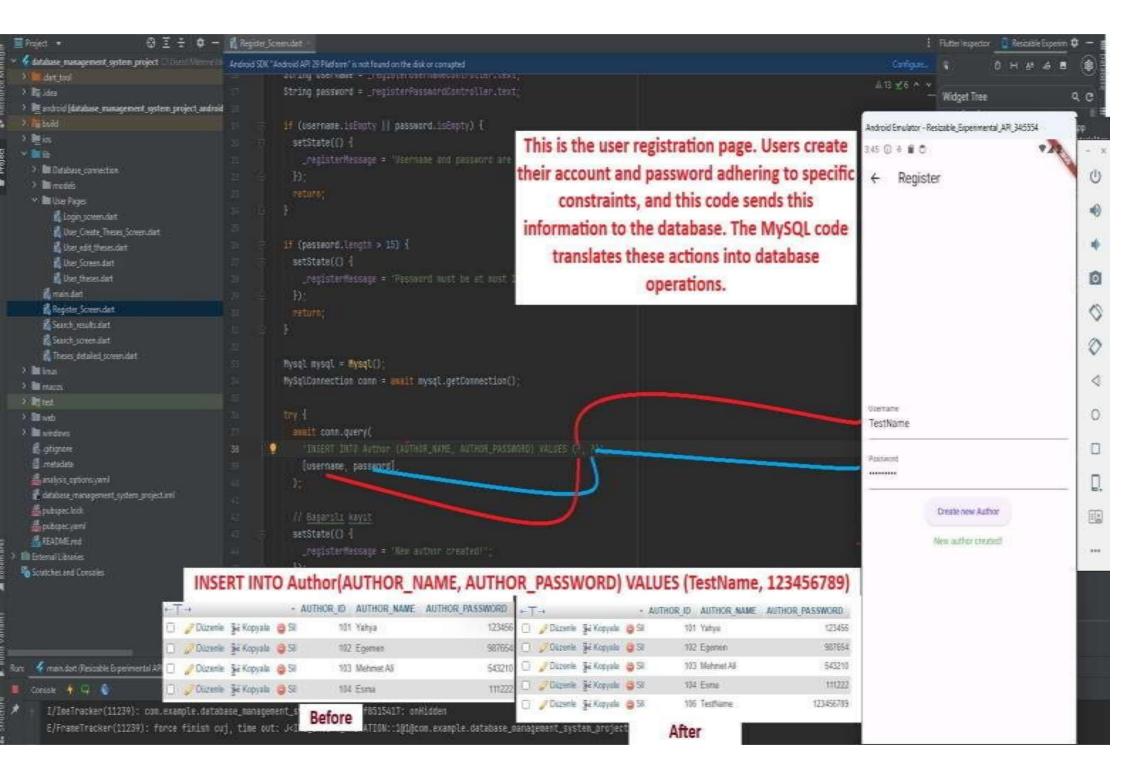
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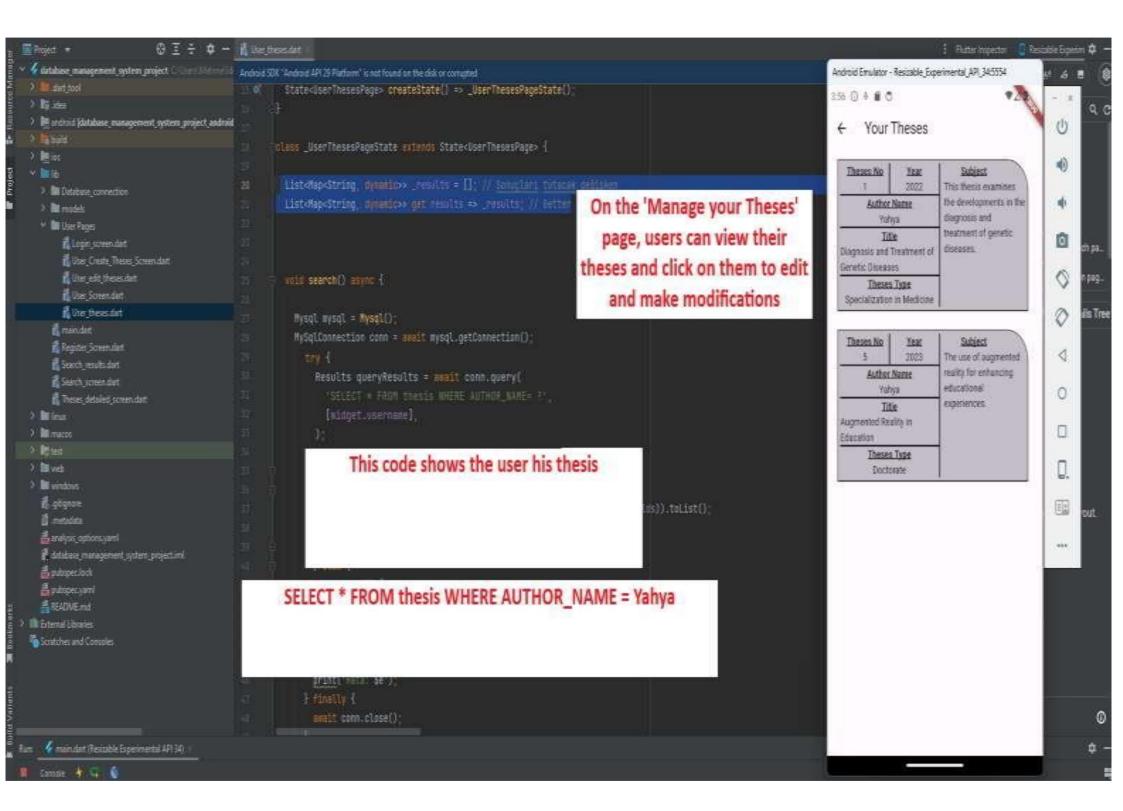


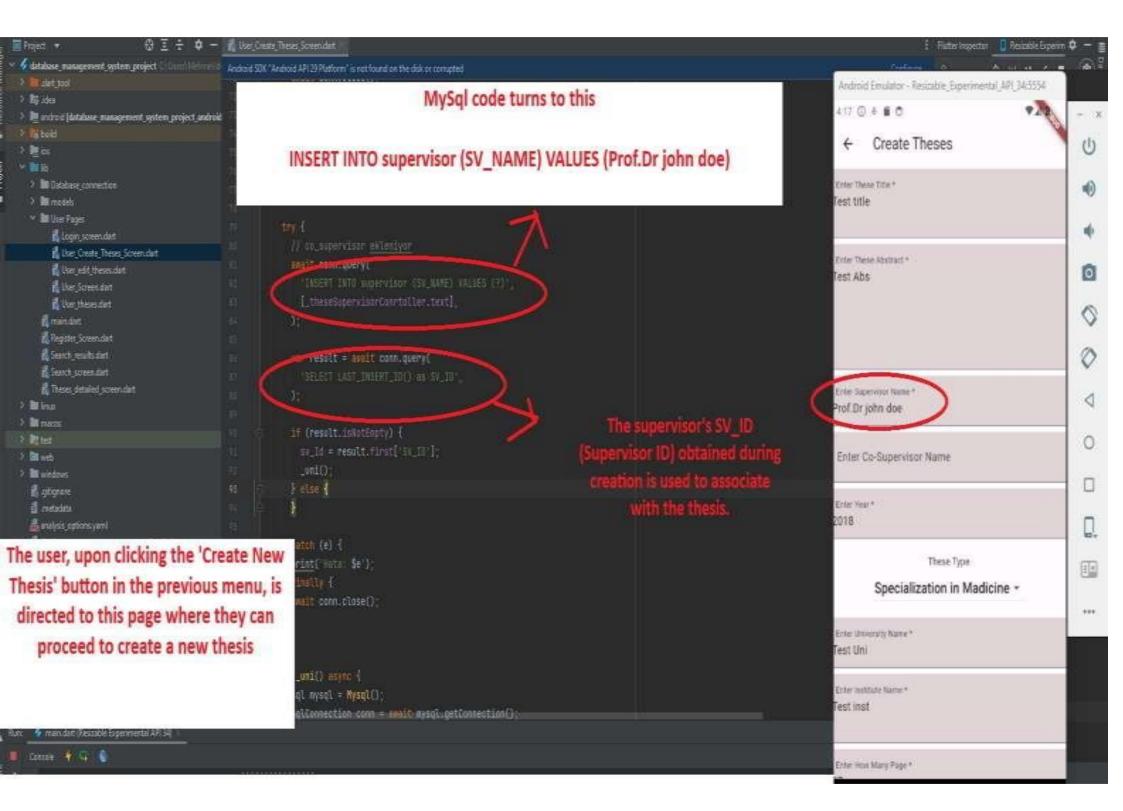






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BEFORE

AFTER

SELF - REFLECTIONS

Egemen Bora Tunçarslan

Firstly, I would like to express my appreciation for this hands-on project for us. I have to say that practical concept teaches much more things than classical exam systems cause of real projects are certainly different than the therotical informations as you know. This lesson proccess was a great experinece for me. If I talk about challanges at first we didn't know database systems but we learnt this and used, we get experience about making mobile application, it was a great challenging for me as I did not know this too. But in the team we discussed and learnt. I think we did good job and I present my thanks to you for this hands-on project experience to us.

Esma Şen

First of all, the assignment you gave seemed a bit complicated at first because I had no familiarity with the subject, but by learning and discussing with my teammates, I developed a useful learning process and learned very useful information. But the most challenging thing for us was developing the application, especially in 1 month. But I thinkwe did it properly and did a good job.

Harun Yahya Ünal

Hello teacher, first of all, I want to thank you for assigning us this type of project. It was definitely more beneficial for us. We practiced what we have learned in class, and we learned about the database system through hands-on experience. This method was more effective than the traditional exam format. However, on the other hand, there were some problems. Not everyone knows how to build an application, and it is challenging to learn in a month. So, every group had to find someone who knows how to build an application. We were fortunate to have someone who knows how to build an application. We encountered some challenges while coding the database, such as creating middle table and joining the tables. But it was not hard to overcome these problems. We thank you for everything.

Mehmet Ali Başak

We used Flutter to develop the mobile application, and due to its relative newness compared to other mobile programming languages, it took some time to find the necessary library for MySQL connection. Allocating time for Scrum meetings was challenging at times, but it played a significant role in shaping the current state of the project.

-SOURCES-

Resources we use:

1) DATABASE SYSTEMS CARLOS CORONEL • STEVEN MORRIS • PETER ROB

DESIGN, IMPLEMENTATION, AND MANAGEMENT Book

Programs we use:

1) MySQL Workbench (for Relatioal Database Diagram and codes part)

2) Lucidchart app(for ERD)

For second part we used:

https://pub.dev/packages/mysql1

Group Members:



Egemen Bora TUNÇARSLAN 210704029



Esma ŞEN 210706041



Harun Yahya ÜNAL 210706015



Mehmet Ali BAŞAK 180704026