

Graduate Thesis System Database Design Document

Database Management System - SE 307

Authors

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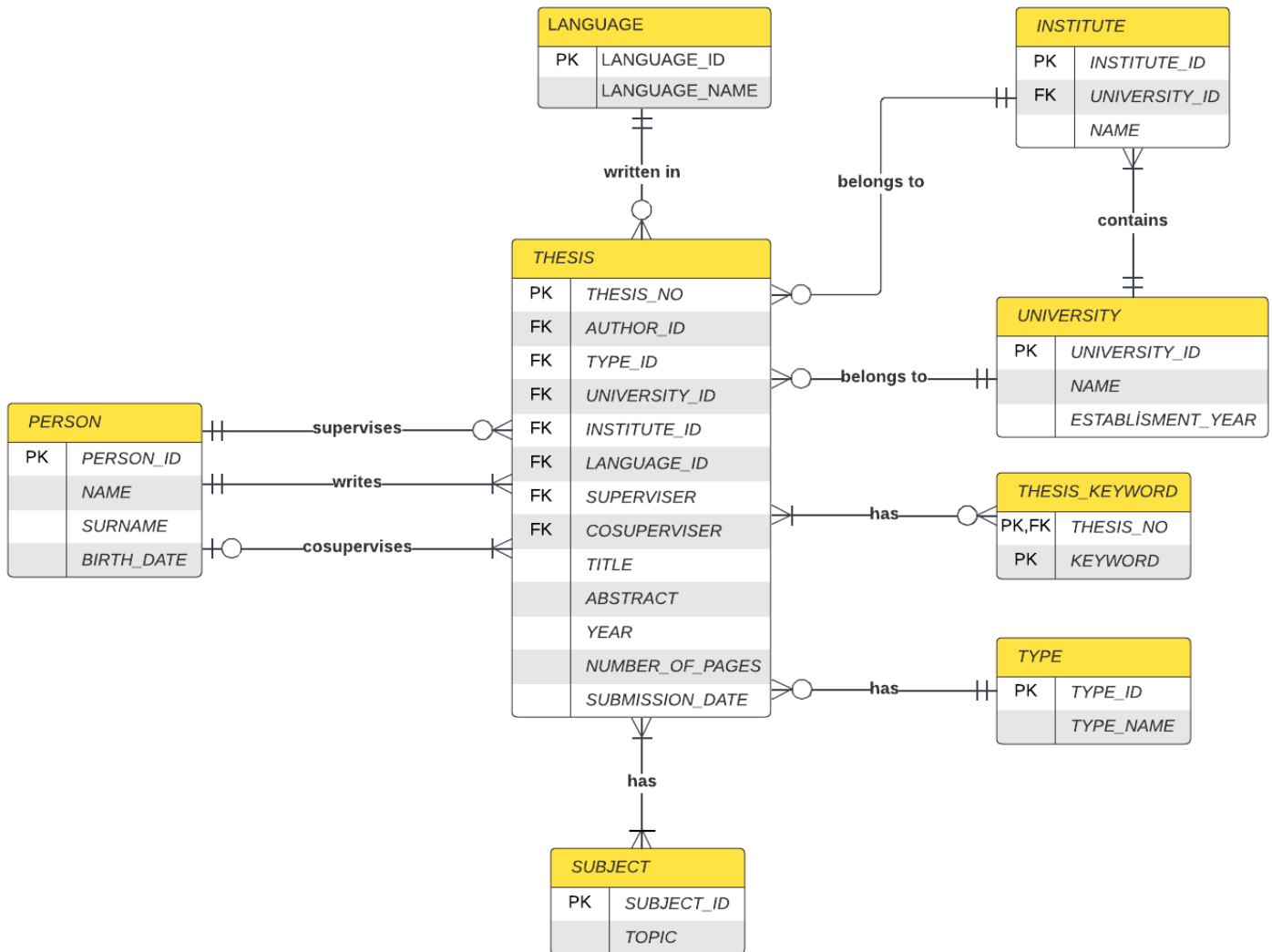
Arda Çıldan 210706014

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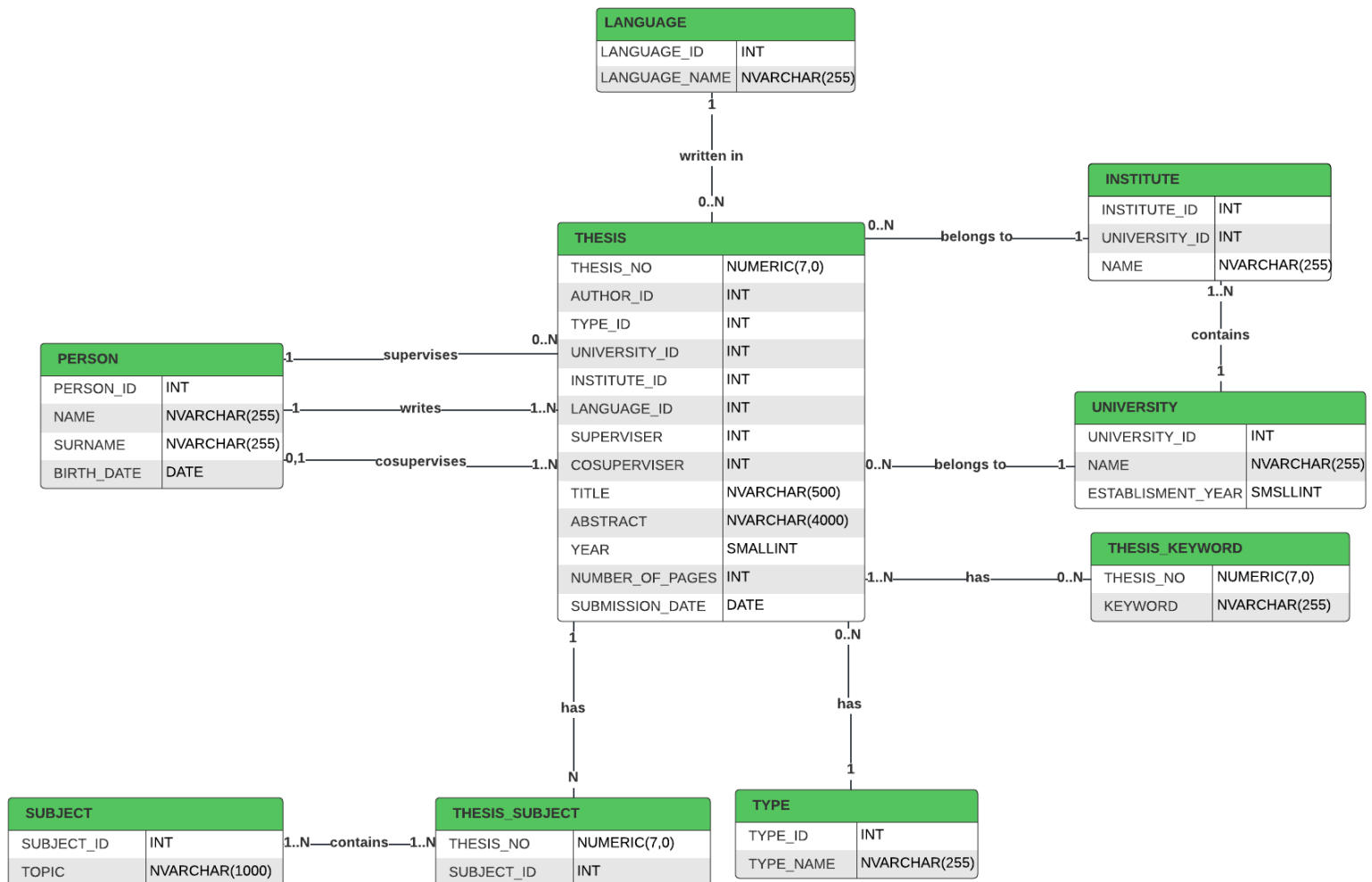
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1. Entity-Relationship Diagram of Database



2. Relational Database Diagram of Database



3. SQL Commands

```
CREATE TABLE PERSON (  
    PERSON_ID INT NOT NULL PRIMARY KEY,  
    NAME NVARCHAR(255) NOT NULL ,  
    SURNAME NVARCHAR(255) NOT NULL,  
    BIRTH_DATE DATE NOT NULL,  
);
```

```
CREATE TABLE UNIVERSITY (  
    UNIVERSITY_ID INT NOT NULL PRIMARY KEY,  
    NAME NVARCHAR(255) NOT NULL,  
    ESTABLISHMENT_YEAR SMALLINT NOT NULL  
    CHECK(ESTABLISHMENT_YEAR >= 0)  
);
```

```
CREATE TABLE INSTITUTE(  
    INSTITUTE_ID INT NOT NULL PRIMARY KEY,  
    NAME NVARCHAR(255) NOT NULL,  
    UNIVERSITY_ID INT NOT NULL FOREIGN KEY (UNIVERSITY_ID)  
    REFERENCES UNIVERSITY(UNIVERSITY_ID)  
);
```

```
CREATE TABLE SUBJECT (  
    SUBJECT_ID INT NOT NULL PRIMARY KEY,  
    TOPIC NVARCHAR(1000) NOT NULL,  
);
```

```
CREATE TABLE LANGUAGE (  
    LANGUAGE_ID INT NOT NULL PRIMARY KEY,  
    LANGUAGE_NAME NVARCHAR(255) NOT NULL,  
);
```

```
CREATE TABLE TYPE (
    TYPE_ID INT NOT NULL PRIMARY KEY,
    TYPE_NAME NVARCHAR(255) NOT NULL,
);
```

```
CREATE TABLE THESIS (
    THESIS_NO NUMERIC(7, 0) NOT NULL PRIMARY KEY
        CHECK (THESIS_NO >= 0 AND THESIS_NO < 10000000),
    TITLE NVARCHAR(500) NOT NULL,
    ABSTRACT NVARCHAR(4000) NOT NULL,
    AUTHOR_ID INT NOT NULL FOREIGN KEY
        REFERENCES PERSON(PERSON_ID),
    YEAR SMALLINT NOT NULL CHECK (YEAR > 0),
    TYPE_ID INT NOT NULL FOREIGN KEY REFERENCES TYPE(TYPE_ID),
    UNIVERSITY_ID INT NOT NULL FOREIGN KEY REFERENCES
        UNIVERSITY(UNIVERSITY_ID),
    INSTITUTE_ID INT NOT NULL FOREIGN KEY REFERENCES
        INSTITUTE(INSTITUTE_ID),
    NUMBER_OF_PAGES INT NOT NULL CHECK (NUMBER_OF_PAGES > 0),
    LANGUAGE_ID INT NOT NULL FOREIGN KEY REFERENCES
        LANGUAGE(LANGUAGE_ID),
    SUPERVISER INT NOT NULL FOREIGN KEY REFERENCES
        PERSON(PERSON_ID),
    COSUPERVISER INT NULL FOREIGN KEY REFERENCES PERSON(PERSON_ID),
    SUBMISSION_DATE DATE NOT NULL,
    CHECK (SUPERVISER <> AUTHOR_ID AND COSUPERVISER<>AUTHOR_ID),
    CHECK (SUPERVISER <> COSUPERVISER)
);
```

```
CREATE TABLE THESIS_SUBJECT(
    THESIS_NO NUMERIC(7,0) NOT NULL FOREIGN KEY REFERENCES
        THESIS(THESIS_NO),
    SUBJECT_ID INT NOT NULL FOREIGN KEY REFERENCES
        SUBJECT(SUBJECT_ID),
    PRIMARY KEY (THESIS_NO, SUBJECT_ID)
);
```

```
CREATE TABLE THESIS_KEYWORD (  
    THESIS_NO NUMERIC(7,0) NOT NULL FOREIGN KEY  
        REFERENCES THESIS(THESIS_NO),  
    KEYWORD NVARCHAR(255) NOT NULL,  
    PRIMARY KEY (THESIS_NO, KEYWORD)  
);
```

```
INSERT INTO PERSON (PERSON_ID, NAME, SURNAME, BIRTH_DATE)  
VALUES(1, 'John', 'Doe', '1990-05-15')
```

```
INSERT INTO PERSON (PERSON_ID, NAME, SURNAME, BIRTH_DATE)  
VALUES(2, 'Jane', 'Smith', '1988-11-20')
```

```
INSERT INTO PERSON (PERSON_ID, NAME, SURNAME, BIRTH_DATE)  
VALUES(3, 'Joe', 'Biden', '1999-1-12')
```

```
INSERT INTO PERSON (PERSON_ID, NAME, SURNAME, BIRTH_DATE)  
VALUES(4, 'Mahsun', 'Kırmızıgül', '1999-11-12')
```

```
INSERT INTO PERSON (PERSON_ID, NAME, SURNAME, BIRTH_DATE)  
VALUES(5, 'Barack', 'Obama', '1991-2-12')
```

```
INSERT INTO PERSON (PERSON_ID, NAME, SURNAME, BIRTH_DATE)  
VALUES(6, 'Donald', 'Trump', '1929-3-12')
```

```
INSERT INTO UNIVERSITY (UNIVERSITY_ID, NAME, ESTABLISHMENT_YEAR)  
VALUES (1, 'Maltepe University', 1950)
```

```
INSERT INTO UNIVERSITY (UNIVERSITY_ID, NAME, ESTABLISHMENT_YEAR)  
VALUES (2, 'Yeditepe University', 1931);
```

```
INSERT INTO UNIVERSITY (UNIVERSITY_ID, NAME, ESTABLISHMENT_YEAR)  
VALUES (3, 'Ankara University', 2003);
```

```
INSERT INTO UNIVERSITY (UNIVERSITY_ID, NAME, ESTABLISHMENT_YEAR)  
VALUES (4, 'Gazi University', 1975);
```

```
INSERT INTO UNIVERSITY (UNIVERSITY_ID, NAME, ESTABLISHMENT_YEAR)  
VALUES (5, 'Istanbul University', 1453);
```

```
INSERT INTO UNIVERSITY (UNIVERSITY_ID, NAME, ESTABLISHMENT_YEAR)
```

```
VALUES (6, 'Yalova University', 1945);
```

```
INSERT INTO INSTITUTE (INSTITUTE_ID, NAME, UNIVERSITY_ID)  
VALUES (1, 'Institute of Computer Science', 1);
```

```
INSERT INTO INSTITUTE (INSTITUTE_ID, NAME, UNIVERSITY_ID)  
VALUES (2, 'School of Business', 2);
```

```
INSERT INTO INSTITUTE (INSTITUTE_ID, NAME, UNIVERSITY_ID)  
VALUES (3, 'College of Medicine', 3);
```

```
INSERT INTO INSTITUTE (INSTITUTE_ID, NAME, UNIVERSITY_ID)  
VALUES (4, 'School of Engineering', 4);
```

```
INSERT INTO INSTITUTE (INSTITUTE_ID, NAME, UNIVERSITY_ID)  
VALUES (5, 'College of Arts and Sciences', 5);
```

```
INSERT INTO INSTITUTE (INSTITUTE_ID, NAME, UNIVERSITY_ID)  
VALUES (6, 'Faculty of Law', 2);
```

```
INSERT INTO INSTITUTE (INSTITUTE_ID, NAME, UNIVERSITY_ID)  
VALUES (7, 'School of Business', 3);
```

```
INSERT INTO INSTITUTE (INSTITUTE_ID, NAME, UNIVERSITY_ID)  
VALUES (8, 'College of Medicine', 4);
```

```
INSERT INTO INSTITUTE (INSTITUTE_ID, NAME, UNIVERSITY_ID)  
VALUES (9, 'School of Engineering', 5);
```

```
INSERT INTO INSTITUTE (INSTITUTE_ID, NAME, UNIVERSITY_ID)  
VALUES (10, 'College of Arts and Sciences', 6);
```

```
INSERT INTO INSTITUTE (INSTITUTE_ID, NAME, UNIVERSITY_ID)  
VALUES (11, 'Faculty of Law', 1);
```

```
INSERT INTO TYPE (TYPE_ID, TYPE_NAME)  
VALUES (1, 'Master');
```

```
INSERT INTO TYPE (TYPE_ID, TYPE_NAME)  
VALUES (2, 'Doctorate');
```



```
INSERT INTO TYPE (TYPE_ID, TYPE_NAME)
VALUES (3, 'Specialization in Medicine');
```

```
INSERT INTO TYPE (TYPE_ID, TYPE_NAME)
VALUES (4, 'Proficiency in Art');
```

```
INSERT INTO SUBJECT (SUBJECT_ID, TOPIC)
VALUES (1, 'Artificial Intelligence in Healthcare');
```

```
INSERT INTO SUBJECT (SUBJECT_ID, TOPIC)
VALUES (2, 'Climate Change Mitigation Strategies');
```

```
INSERT INTO SUBJECT (SUBJECT_ID, TOPIC)
VALUES (3, 'Blockchain Technology in Supply Chain');
```

```
INSERT INTO SUBJECT (SUBJECT_ID, TOPIC)
VALUES (4, 'Cybersecurity Threats and Countermeasures');
```

```
INSERT INTO SUBJECT (SUBJECT_ID, TOPIC)
VALUES (5, 'Impact of Social Media on Society');
```

```
INSERT INTO SUBJECT (SUBJECT_ID, TOPIC)
VALUES (6, 'Renewable Energy Technologies');
```

```
INSERT INTO LANGUAGE (LANGUAGE_ID, LANGUAGE_NAME)
VALUES (1, 'English');
```

```
INSERT INTO LANGUAGE (LANGUAGE_ID, LANGUAGE_NAME)
VALUES (2, 'Spanish');
```

```
INSERT INTO LANGUAGE (LANGUAGE_ID, LANGUAGE_NAME)
VALUES (3, 'French');
```

```
INSERT INTO LANGUAGE (LANGUAGE_ID, LANGUAGE_NAME)
VALUES (4, 'German');
```

```
INSERT INTO LANGUAGE (LANGUAGE_ID, LANGUAGE_NAME)
VALUES (5, 'Chinese');
```

```
INSERT INTO LANGUAGE (LANGUAGE_ID, LANGUAGE_NAME)
VALUES (6, 'Japanese');
```

```
INSERT INTO THESIS (THEESIS_NO, TITLE, ABSTRACT, AUTHOR_ID, YEAR,
TYPE_ID, UNIVERSITY_ID, INSTITUTE_ID, NUMBER_OF_PAGES,
LANGUAGE_ID, SUPERVISER, COSUPERVISER, SUBMISSION_DATE)
VALUES (1000011, 'The Impact of Renewable Energy on Sustainable
Development', 'This thesis explores the role of renewable energy
in achieving sustainable development goals.', 1, 2022, 1, 1, 1,
100, 2, 3, NULL, '2023-01-15');
```

```
INSERT INTO THESIS (THEESIS_NO, TITLE, ABSTRACT, AUTHOR_ID, YEAR,
TYPE_ID, UNIVERSITY_ID, INSTITUTE_ID, NUMBER_OF_PAGES,
LANGUAGE_ID, SUPERVISER, COSUPERVISER, SUBMISSION_DATE)
VALUES (1000012, 'Machine Learning Applications in Healthcare',
'Examining the applications of machine learning in improving
diagnostic accuracy and treatment outcomes in healthcare.', 2,
2021, 2, 2, 2, 120, 1, 4, NULL, '2023-02-28');
```

```
INSERT INTO THESIS (THEESIS_NO, TITLE, ABSTRACT, AUTHOR_ID, YEAR,
TYPE_ID, UNIVERSITY_ID, INSTITUTE_ID, NUMBER_OF_PAGES,
LANGUAGE_ID, SUPERVISER, COSUPERVISER, SUBMISSION_DATE)
VALUES (1000013, 'Urban Planning Strategies for Climate Change
Mitigation', 'Analyzing urban planning approaches to mitigate the
impact of climate change and create resilient cities.', 3, 2023,
1, 1, 1, 80, 2, 5, NULL, '2023-03-15');
```

```
INSERT INTO THESIS (THEESIS_NO, TITLE, ABSTRACT, AUTHOR_ID, YEAR,
TYPE_ID, UNIVERSITY_ID, INSTITUTE_ID, NUMBER_OF_PAGES,
LANGUAGE_ID, SUPERVISER, COSUPERVISER, SUBMISSION_DATE)
VALUES (1000014, 'Exploring the History of Artificial
Intelligence', 'A historical perspective on the development and
evolution of artificial intelligence over the decades.', 1, 2020,
3, 3, 3, 2, 1, 6, NULL, '2023-04-05');
```

```
INSERT INTO THESIS (THEESIS_NO, TITLE, ABSTRACT, AUTHOR_ID, YEAR,
TYPE_ID, UNIVERSITY_ID, INSTITUTE_ID, NUMBER_OF_PAGES,
LANGUAGE_ID, SUPERVISER, COSUPERVISER, SUBMISSION_DATE)
VALUES (1000015, 'The Role of Data Privacy in the Digital Age',
'Investigating the importance of data privacy and its implications
in the era of digital technology.', 2, 2022, 2, 2, 2, 1, 3, 4,
NULL, '2023-05-01');
```

```
INSERT INTO THESIS (THEESIS_NO, TITLE, ABSTRACT, AUTHOR_ID, YEAR,
TYPE_ID, UNIVERSITY_ID, INSTITUTE_ID, NUMBER_OF_PAGES,
LANGUAGE_ID, SUPERVISER, COSUPERVISER, SUBMISSION_DATE)
VALUES (1000016, 'Entrepreneurship and Economic Growth',
'Analyzing the impact of entrepreneurship on economic growth and
development in emerging markets.', 2, 2021, 3, 3, 3, 5, 2, 3, 1,
'2023-06-20');
```

```
INSERT INTO THESIS_SUBJECT (THEESIS_NO, SUBJECT_ID)
VALUES (1000011, 1);
```

```
INSERT INTO THESIS_SUBJECT (THEESIS_NO, SUBJECT_ID)
VALUES (1000011, 2);
```

```
INSERT INTO THESIS_SUBJECT (THEESIS_NO, SUBJECT_ID)
VALUES (1000012, 2);
```

```
INSERT INTO THESIS_SUBJECT (THEESIS_NO, SUBJECT_ID)
VALUES (1000013, 3);
```

```
INSERT INTO THESIS_SUBJECT (THEESIS_NO, SUBJECT_ID)
VALUES (1000014, 4);
```

```
INSERT INTO THESIS_SUBJECT (THEESIS_NO, SUBJECT_ID)
VALUES (1000015, 5);
```

```
INSERT INTO THESIS_SUBJECT (THEESIS_NO, SUBJECT_ID)
VALUES (1000016, 6);
```

```
INSERT INTO THESIS_KEYWORD (THEESIS_NO, KEYWORD)
VALUES (1000011, 'Machine Learning');
```

```
INSERT INTO THESIS_KEYWORD (THEESIS_NO, KEYWORD)
VALUES (1000011, 'Linear Regression');
```

```
INSERT INTO THESIS_KEYWORD (THEESIS_NO, KEYWORD)
VALUES (1000011, 'Supervised Learning');
```

```
INSERT INTO THESIS_KEYWORD (THEESIS_NO, KEYWORD)
VALUES (1000012, 'Artificial Intelligence');
```

```
INSERT INTO THESIS_KEYWORD (THESIS_NO, KEYWORD)
VALUES (1000013, 'Data Mining');
```

```
INSERT INTO THESIS_KEYWORD (THESIS_NO, KEYWORD)
VALUES (1000014, 'Natural Language Processing');
```

```
INSERT INTO THESIS_KEYWORD (THESIS_NO, KEYWORD)
VALUES (1000015, 'Computer Vision');
```

```
INSERT INTO THESIS_KEYWORD (THESIS_NO, KEYWORD)
VALUES (1000016, 'Big Data');
```