Project Report HY-360

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Setup to Test

To setup your computer to test the project in Windows 10(It is the only OS that the project to) you have to install the following:
-XAMPP : https://www.apachefriends.org/download.html
-Intellij IDEA Ultimate : https://www.jetbrains.com/idea/download/#section=windows
-Tomcat apache, version: 9.0.69
-JDK Temurin 11 for Windows 10 : https://adoptium.net/temurin/releases/?variant=openjdk11

After the downloads above, you have to create a Jetbrains account and activate the full licence to install IntelliJ IDEA Ultimate, after the installation is complete install XAMPP and the JDK and extract the Tomcat apache folder. Then insert the JDK into your IntelliJ settings and open the project, now create a configuration with the settings below:
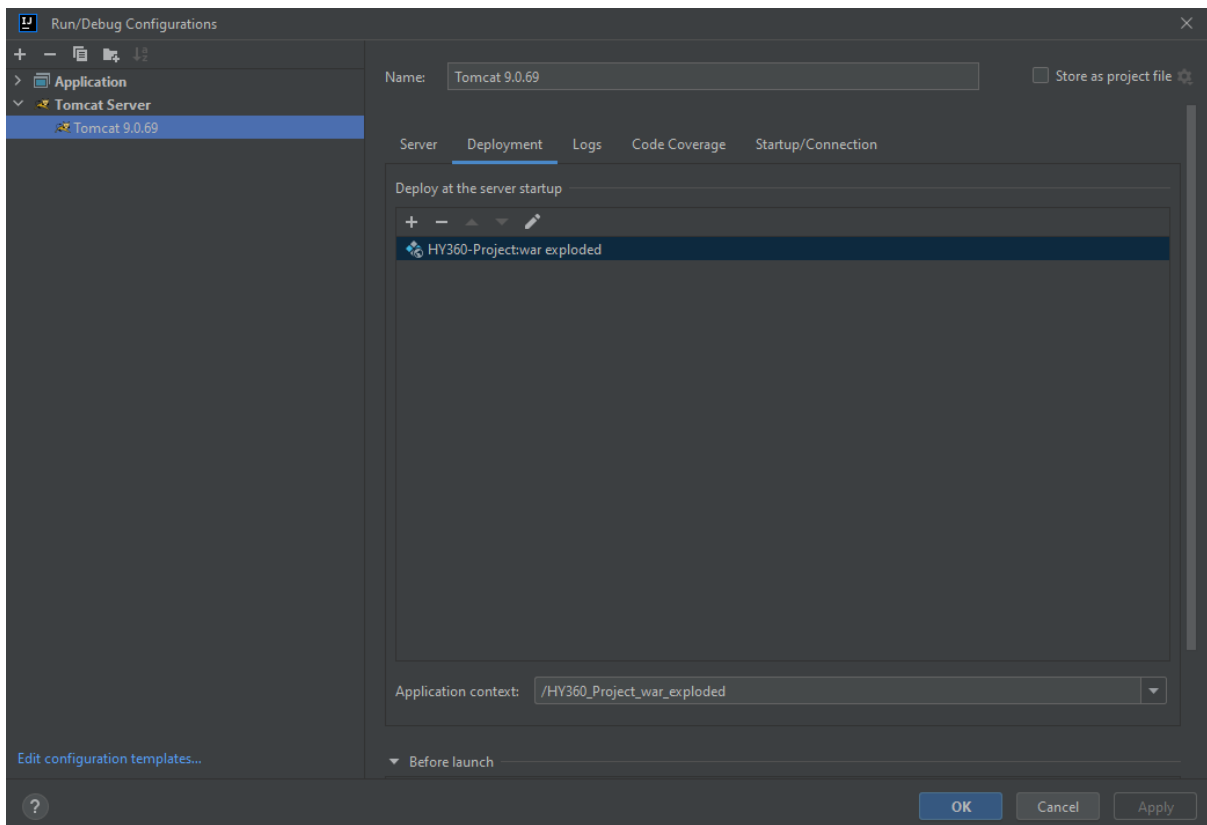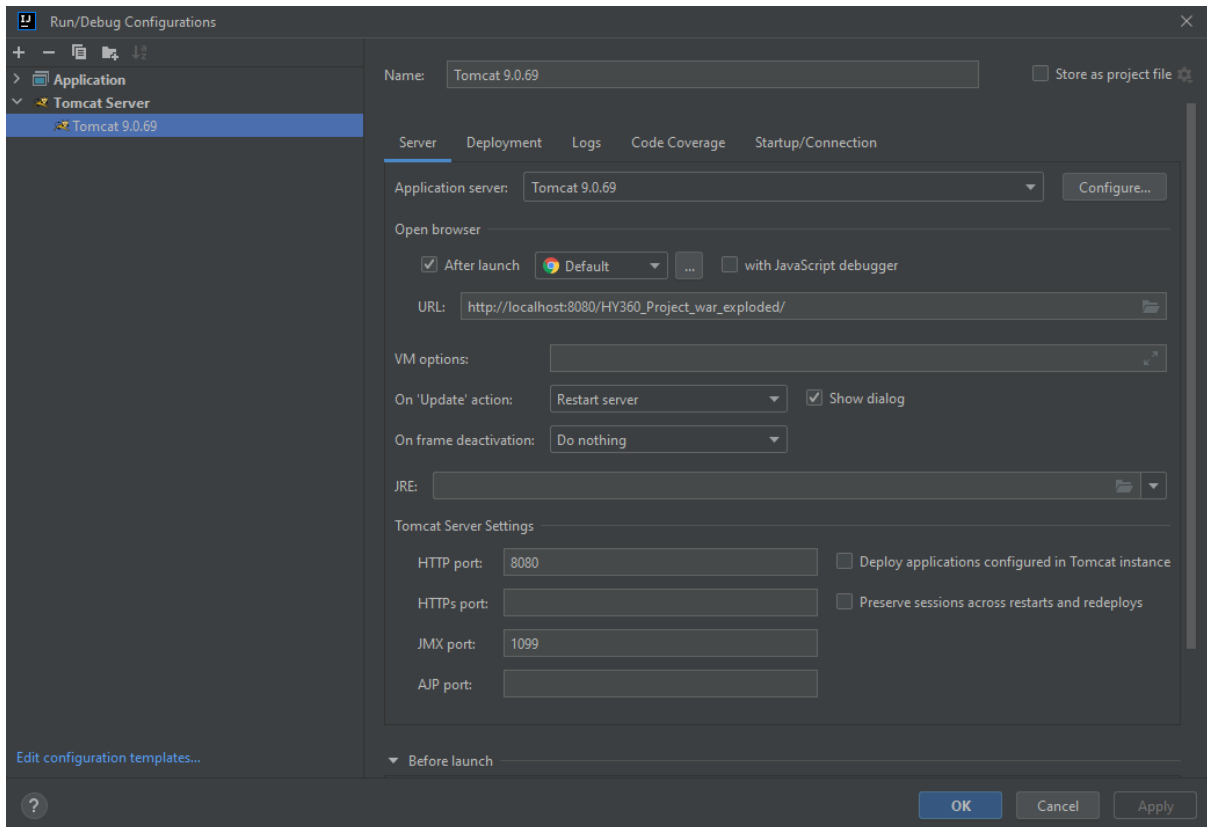
Where the artifact name is the name of the folder which the project is in.

Then startup XAMPP and click start on Apache and MySQL.

Then find the initDatabase(); main which is located at
src/main/java/database/init/InitDatabase.java as shown here:
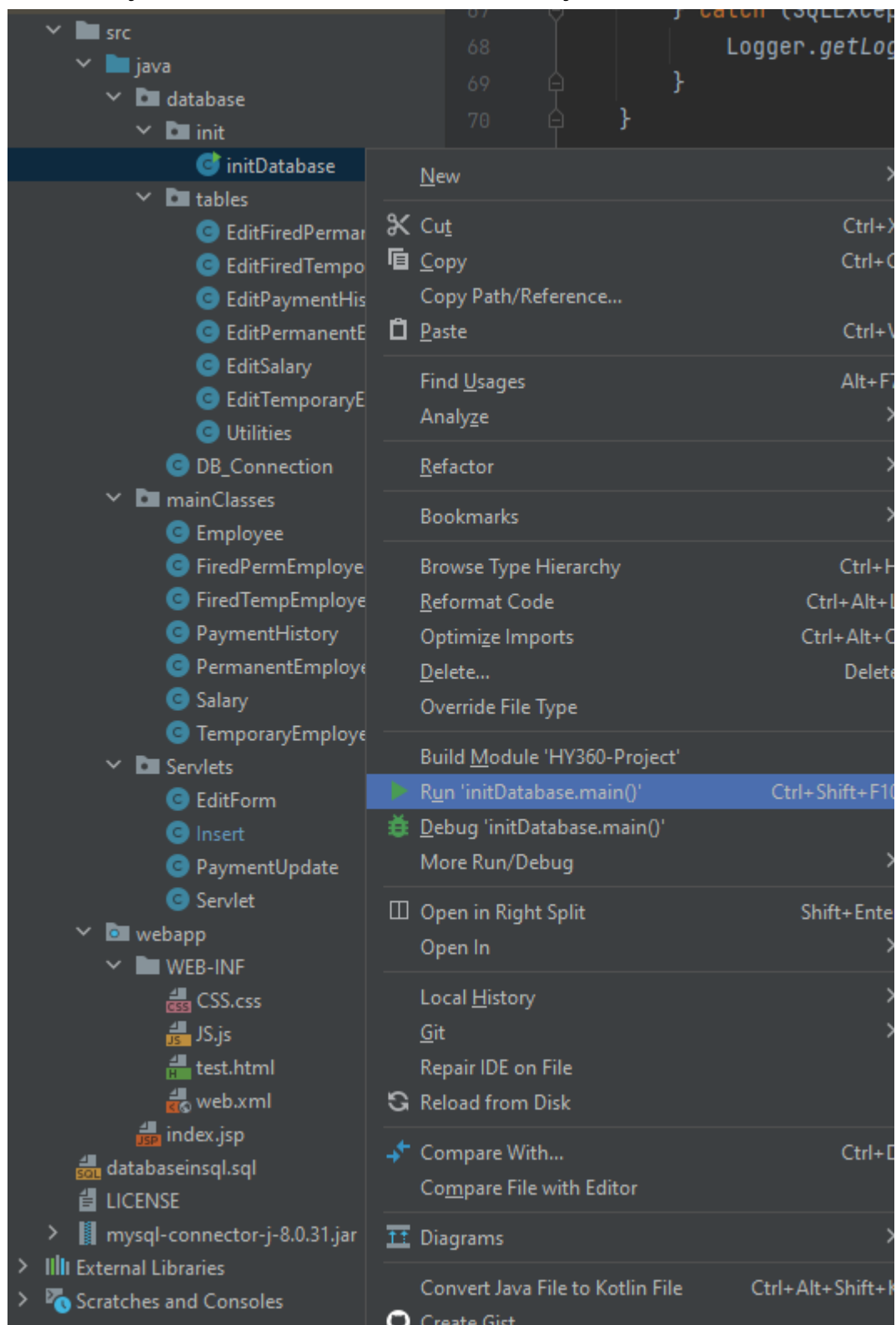
Now choose the Tomcat configuration which you created earlier and then hit run.

The project has now started running and is ready to be tested.

Classes and Visualization of the Implementation

We mainly used servlets(Java) to create the implementation of our project, so that we could connect the graphic interface made in HTML with our database that was created using SQL.
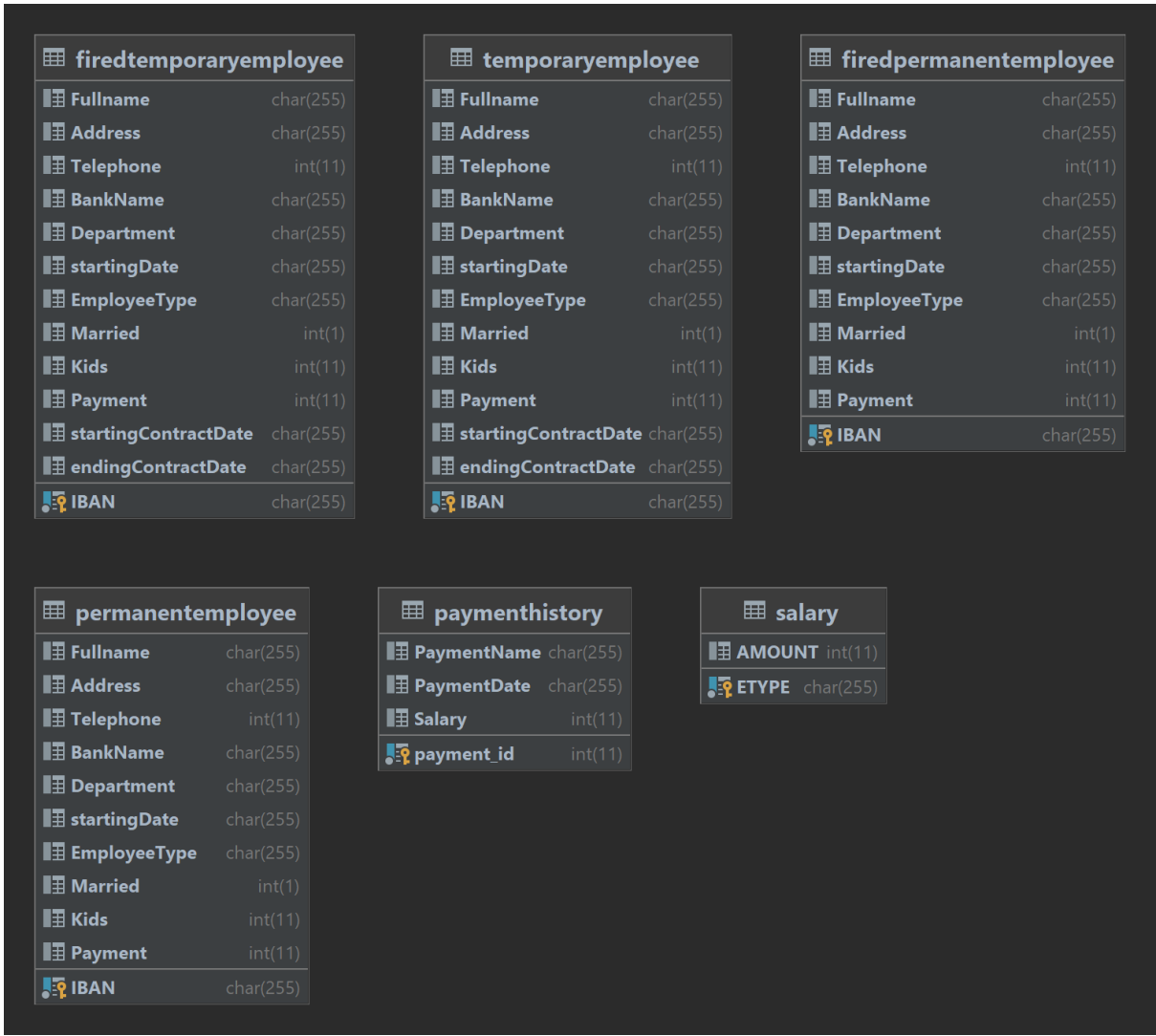Each servlet has a designated function and is invoked whenever a corresponding button of "submit" type is pressed.

1. In the files : allsqlcommands.sql and databaseinsql.sql you can find all the SQL commands that were used throughout our code.
More specifically in allsqlcommands.sql: are all of the SQL commands.
While in databaseinsql.sql: are only the ones that were needed to CREATE the database.

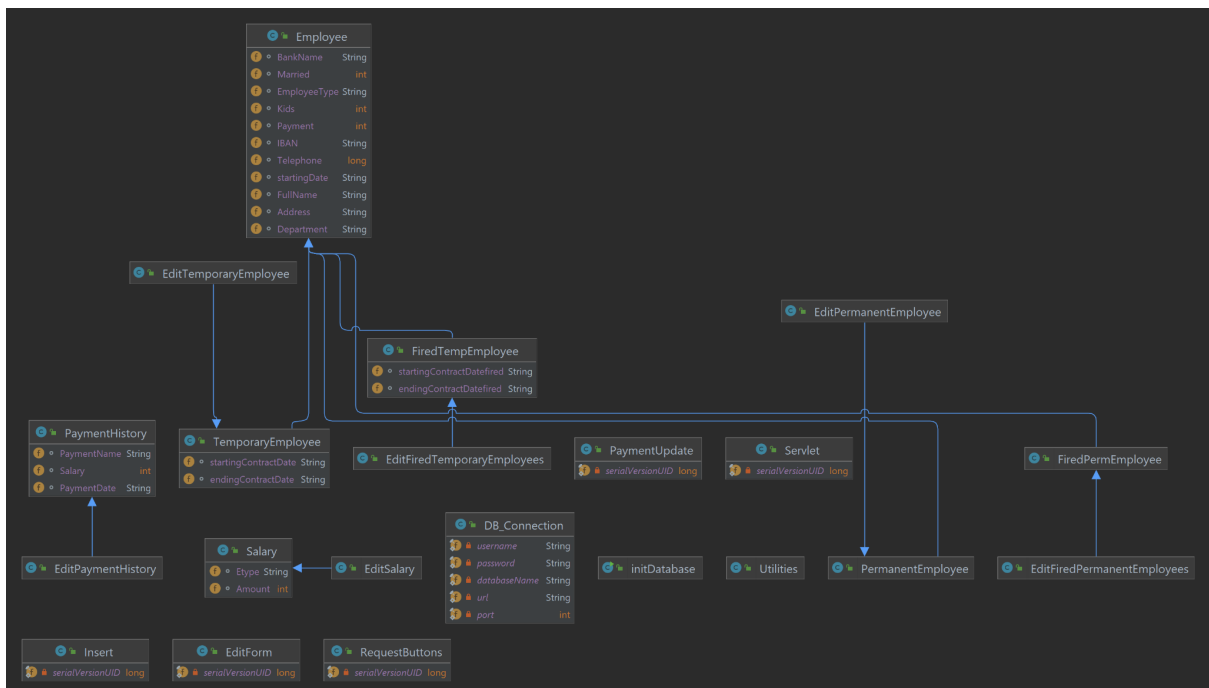2. Here are the classes and methods that were used for this project:
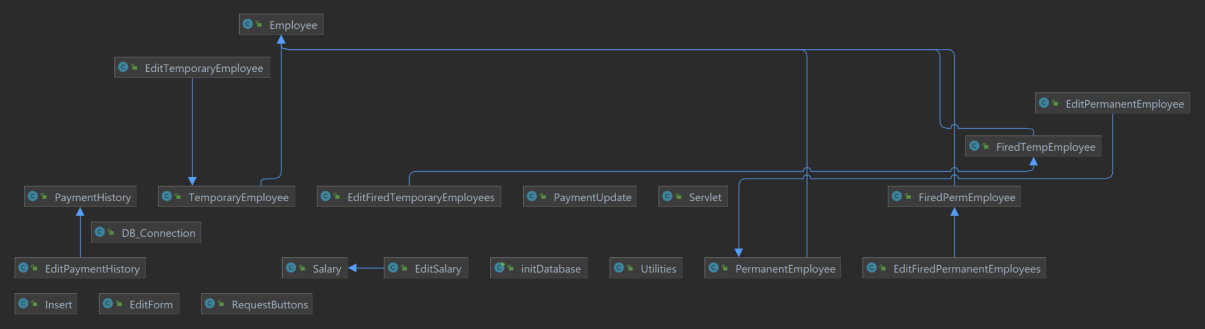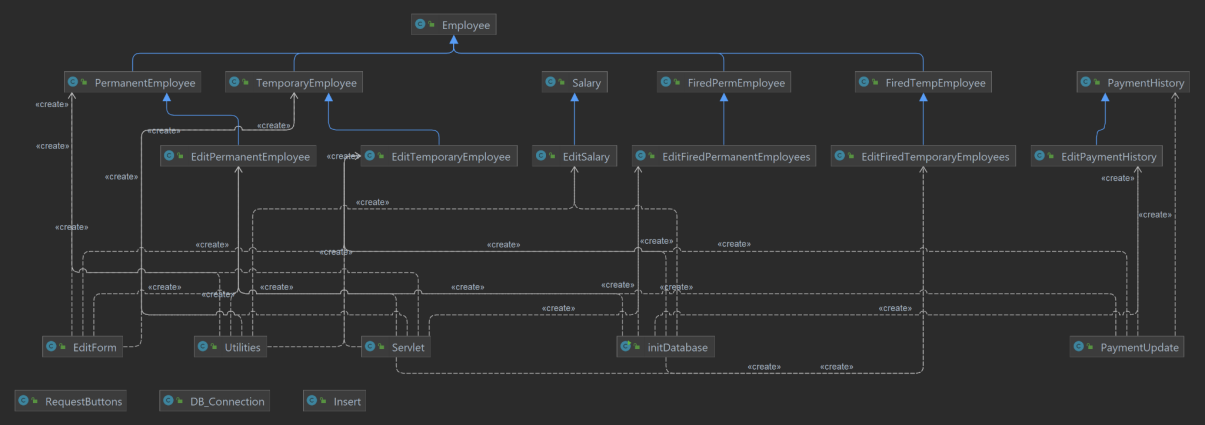
Visualization of out database:

firedtemporaryemployee	
Fullname	char(255)
Address	char(255)
Telephone	int(11)
BankName	char(255)
Department	char(255)
startingDate	char(255)
EmployeeType	char(255)
Married	int(1)
Kids	int(11)
Payment	int(11)
startingContractDate	char(255)
endingContractDate	char(255)
IBAN	char(255)

temporaryemployee	
Fullname	char(255)
Address	char(255)
Telephone	int(11)
BankName	char(255)
Department	char(255)
startingDate	char(255)
EmployeeType	char(255)
Married	int(1)
Kids	int(11)
Payment	int(11)
startingContractDate	char(255)
endingContractDate	char(255)
IBAN	char(255)

firedpermanentemployee	
Fullname	char(255)
Address	char(255)
Telephone	int(11)
BankName	char(255)
Department	char(255)
startingDate	char(255)
EmployeeType	char(255)
Married	int(1)
Kids	int(11)
Payment	int(11)
IBAN	char(255)

permanentemployee	
Fullname	char(255)
Address	char(255)
Telephone	int(11)
BankName	char(255)
Department	char(255)
startingDate	char(255)
EmployeeType	char(255)
Married	int(1)
Kids	int(11)
Payment	int(11)
IBAN	char(255)

paymenthistory	
PaymentName	char(255)
PaymentDate	char(255)
Salary	int(11)
payment_id	int(11)

salary	
AMOUNT	int(11)
ETYPE	char(255)

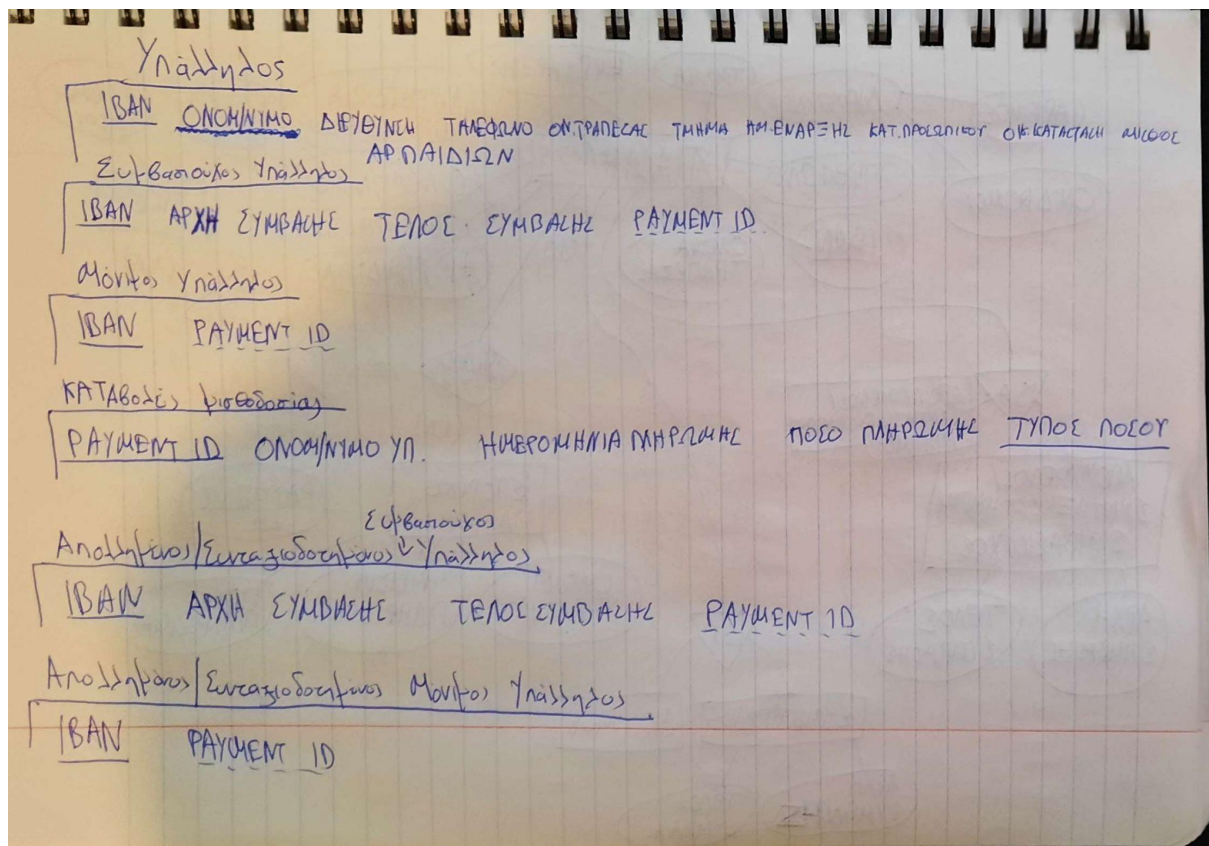UML Diagram of the classes and methods:

And here are its simpler versions:

Σχεδιάγραμμα Οντοτήτων Σχέσων E-R

Πίνακες Οντοτήτων Σχέσων E-R

Υπάλληλος

| IBAN | ΟΝΟΜ/ΝΥΜΟ | ΔΙΕΥΘΥΝΣΗ | ΤΗΛΕΦΩΝΟ | ΟΝ.ΤΡΑΠΕΖΑΣ | ΤΜΗΜΑ | ΗΜ.ΕΝΑΡΞΗΣ | ΚΑΤ.ΠΡΟΣΩΠΙΚΟΥ | ΟΙΚ.ΚΑΤΑΣΤΑΣΗ | ΑΡ.ΠΑΙΔΙΩΝ | ΜΙΣΘΟΣ |

Συμβασιούχος Υπάλληλος

| IBAN | ΑΡΧΗ ΣΥΜΒΑΣΗΣ | ΤΕΛΟΣ ΣΥΜΒΑΣΗΣ | PAYMENT ID |

Μόνιμος Υπάλληλος

| IBAN | PAYMENT ID |

ΚΑΤΑΒΟΛΕΣ μισθοδοσίας

| PAYMENT ID | ΟΝΟΜ/ΝΥΜΟ ΥΠ. | ΗΜΕΡΟΜΗΝΙΑ ΠΛΗΡΩΜΗΣ | ΠΟΣΟ ΠΛΗΡΩΜΗΣ | ΤΥΠΟΣ ΠΟΣΟΥ |

Απολ...μένος/Συνταξιοδοτημένος Συμβασιούχος Υπάλληλος

| IBAN | ΑΡΧΗ ΣΥΜΒΑΣΗΣ | ΤΕΛΟΣ ΣΥΜΒΑΣΗΣ | PAYMENT ID |

Απολ...μένος/Συνταξιοδοτημένος Μόνιμος Υπάλληλος

| IBAN | PAYMENT ID |

Σχέσεις Εξαρτησέων και Μορφή 3NF

Functional Dependencies για τον πίνακα Υπάλληλος

Τηλέφωνο -> Όνομα (αφα ξέροντε το τηλέφωνο ξέρουμε και το όνομα του υπαλλήλου)

~~Διεύθυνση -> Όνομα (διδότινο~~

Functional Dependencies για τον πίνακα Καταθ.Μισθοδοτων

Δεν έχα

Ο πίνακας Υπάλλησος πρέπει να γίνει 1NF αφού διεύθυνση ούτεα στοιχίο

<u>Υπάλλησος</u>

<u>IBAN</u> ONOMATΕΠΩΝΥΜΟ (ΑΡΙΘΜΟΣ ΟΙΚ. ΔΡΟΜΟΥ) ΟΝ.ΤΡΑΠΕΖΑΣ

ΤΜΗΜΑ   ΗΜ.ΕΝΑΡΞΗΣ ΚΑΤΗΓΟΡΙΑ ΠΡΟΣ. ΟΙΚΟΓΕΝ. ΚΑΤΑΣΤΑCΗ

ΜΙΣΘΟΣ

Είναι και 2NF αφού δεν υπάρχουν σχέσης της ξφρφ)

~~Μη Αρωτιον (ολα~~ Πρωτεύον (μη-κλειδι) ->Μη πρωτεύον

Δεν είναι 3NF επειδή υπάρχει σχέση της βορφη)
Μη πρωτεύον->Μη ρωτειον. αλλα

Functional Dependencies για Πίνακα Ποσά.

Δεν έχω μη τετριμμένες σχέσεις αφού υπάρχει μόνο το etype σαν ένα απλό μη πρωτεύον attribute

Screenshots από λειτουργίες

-Database creation (initDatabase()main):

-Fill database button:

```
INSERT INTO  permanentemployee (IBAN,FullName,Address,Telephone,BankName,Department,startingDate,EmployeeType,Married,Payment,Kids) VALUES ('GR551231','Tunechi','Makedonias 12','69472','Eurobank','csd','200
# The permanent employee was successfully added in the database.
Connected to database.
INSERT INTO  permanentemployee (IBAN, FullName,Address,Telephone,BankName,Department,startingDate,EmployeeType,Married,Payment,Kids) VALUES ('GR1234567890','Michalis','Zarou 15','6906','Piraiws','CSD','2022
# The permanent employee was successfully added in the database.
Connected to database.
INSERT INTO  permanentemployee (IBAN, FullName,Address,Telephone,BankName,Department,startingDate,EmployeeType,Married,Payment,Kids) VALUES ('GR1234567891','Manolis','Attalou 6','69892','Alfabank','MEM','20
# The permanent employee was successfully added in the database.
Connected to database.
INSERT INTO  permanentemployee (IBAN, FullName,Address,Telephone,BankName,Department,startingDate,EmployeeType,Married,Kids,Payment) VALUES ('GR1234567892','Antonis','Makedonias 12','69843','Pagkrhtia','XHM
# The permanent employee was successfully added in the database.
Connected to database.
INSERT INTO  permanentemployee (IBAN, FullName,Address,Telephone,BankName,Department,startingDate,EmployeeType,Married,Kids,Payment) VALUES ('GR1234567893','Lefteris','Apokoronou 1','6945','Eurobank','PHY',
# The permanent employee was successfully added in the database.
Connected to database.
INSERT INTO  permanentemployee (IBAN, FullName,Address,Telephone,BankName,Department,startingDate,EmployeeType,Married,Kids,Payment) VALUES ('GR1234567894','Marilena','Almpert 14','6989','Agrotikh','CSD','2
# The permanent employee was successfully added in the database.
Connected to database.
INSERT INTO  temporaryemployee (IBAN, FullName,Address,Telephone,BankName,Department,startingDate,EmployeeType,Married,Payment,Kids,startingContractDate, endingContractDate) VALUES ('GR890244731','Nick Tarz
# The temporary employee was successfully added in the database.
Connected to database.
INSERT INTO  temporaryemployee (IBAN, FullName,Address,Telephone,BankName,Department,startingDate,EmployeeType,Married,Payment,Kids,startingContractDate, endingContractDate) VALUES ('GR89024431','Nick Tarza
# The temporary employee was successfully added in the database.
Connected to database.
INSERT INTO  temporaryemployee (IBAN, FullName,Address,Telephone,BankName,Department,startingDate,EmployeeType,Married,Payment,Kids,startingContractDate, endingContractDate) VALUES ('GR8909241','Mpampis Kar
# The temporary employee was successfully added in the database.
Connected to database.
INSERT INTO  temporaryemployee (IBAN, FullName,Address,Telephone,BankName,Department,startingDate,EmployeeType,Married,Payment,Kids,startingContractDate, endingContractDate) VALUES ('GR82341','Giannis Papad
# The temporary employee was successfully added in the database.
Connected to database.
INSERT INTO  temporaryemployee (IBAN, FullName,Address,Telephone,BankName,Department,startingDate,EmployeeType,Married,Payment,Kids,startingContractDate, endingContractDate) VALUES ('GR231213','Giannis Ante
# The temporary employee was successfully added in the database.
Connected to database.
INSERT INTO  firedtemporaryemployee (IBAN, FullName,Address,Telephone,BankName,Department,startingDate,EmployeeType,Married,Payment,Kids,startingContractDate, endingContractDate) VALUES ('GR0909231','Iwanna
# The temporary fired employee was successfully added in the database.
Connected to database.
INSERT INTO  firedtemporaryemployee (IBAN, FullName,Address,Telephone,BankName,Department,startingDate,EmployeeType,Married,Payment,Kids,startingContractDate, endingContractDate) VALUES ('GR09090231','Nikos
# The temporary fired employee was successfully added in the database.
Connected to database.
INSERT INTO  firedtemporaryemployee (IBAN, FullName,Address,Telephone,BankName,Department,startingDate,EmployeeType,Married,Payment,Kids,startingContractDate, endingContractDate) VALUES ('GR8909231','Makis
# The temporary fired employee was successfully added in the database.
Connected to database.
INSERT INTO  firedtemporaryemployee (IBAN, FullName,Address,Telephone,BankName,Department,startingDate,EmployeeType,Married,Payment,Kids,startingContractDate, endingContractDate) VALUES ('GR023431','Manos T
# The temporary fired employee was successfully added in the database.
Connected to database.
INSERT INTO  firedtemporaryemployee (IBAN, FullName,Address,Telephone,BankName,Department,startingDate,EmployeeType,Married,Payment,Kids,startingContractDate, endingContractDate) VALUES ('GR89123231','Mpamp
# The temporary fired employee was successfully added in the database.
Connected to database.
INSERT INTO  firedpermanentemployee (IBAN, FullName,Address,Telephone,BankName,Department,startingDate,EmployeeType,Married,Payment,Kids) VALUES ('GR09231','Markissa','Makedonias 15','69733','euronbank','ME
# The temporary employee was successfully added in the database.
```

-Hire temporary employee:

```
INSERT INTO  temporaryemployee (IBAN,FullName,Address,Telephone,BankName,Department,startingDate,EmployeeType,Married,Kids,Payment,startingContractDate,endingContractDate) VALUES ('GR62651321','SHeeesh God'
# The temporary employee was successfully added in the database.
```

-Hire permanent employee:

```
INSERT INTO  permanentemployee (IBAN,FullName,Address,Telephone,BankName,Department,startingDate,EmployeeType,Married,Payment,Kids) VALUES ('GR551231','Tunechi','Makedonias 12','69472','Eurobank','csd','20
# The permanent employee was successfully added in the database.
```

-Fire temporary employee and add to fired table:

-Fire permanent employee and add to fired table:

```
INSERT INTO  firedpermanentemployee (IBAN,FullName,Address,Telephone,BankName,Department,startingDate,EmployeeType,Married,Payment,Kids) VALUES ('GR231213','null','null','0','null','null','null','Not found'
# The permanent employee was successfully added in the history database.
Connected to database.
DELETE FROM permanentemployee WHERE IBAN = 'GR231213'
# The permanent employee was successfully deleted from the database.
```

-Edit info:

Department:

```
4 GR89024431  Nick Tarzanidis        Ionias 8            698536 eurobank      MEM        2018-01-01        Educational              1
```

Update payments for employees:

```
INSERT INTO  paymenthistory (PaymentName, PaymentDate, Salary) VALUES ('Lefteris','2023-01-29','1470')
# The payment history was successfully inserted into the database.
Connected to database.
Connected to database.
Connected to database.
INSERT INTO  paymenthistory (PaymentName, PaymentDate, Salary) VALUES ('Marilena','2023-01-29','1740')
# The payment history was successfully inserted into the database.
Connected to database.
Connected to database.
Connected to database.
INSERT INTO  paymenthistory (PaymentName, PaymentDate, Salary) VALUES ('Tunechi','2023-01-29','6090')
# The payment history was successfully inserted into the database.
Connected to database.
Connected to database.
Connected to database.
Connected to database.
INSERT INTO  paymenthistory (PaymentName, PaymentDate, Salary) VALUES ('Giannis Antetokounmpo','2023-01-29','1650')
# The payment history was successfully inserted into the database.
Connected to database.
Connected to database.
Connected to database.
INSERT INTO  paymenthistory (PaymentName, PaymentDate, Salary) VALUES ('SHeeesh God','2023-01-29','3420')
# The payment history was successfully inserted into the database.
Connected to database.
Connected to database.
Connected to database.
INSERT INTO  paymenthistory (PaymentName, PaymentDate, Salary) VALUES ('Giannis Papadakis','2023-01-29','1402')
# The payment history was successfully inserted into the database.
Connected to database.
Connected to database.
Connected to database.
INSERT INTO  paymenthistory (PaymentName, PaymentDate, Salary) VALUES ('Nick Tarzanidis','2023-01-29','1805')
# The payment history was successfully inserted into the database.
Connected to database.
Connected to database.
Connected to database.
INSERT INTO  paymenthistory (PaymentName, PaymentDate, Salary) VALUES ('Nick Tarzanidis','2023-01-29','1805')
# The payment history was successfully inserted into the database.
Connected to database.
Connected to database.
Connected to database.
INSERT INTO  paymenthistory (PaymentName, PaymentDate, Salary) VALUES ('Mpampis Karampamparos','2023-01-29','1800')
# The payment history was successfully inserted into the database.
```

Edit salaries:

	ETYPE	AMOUNT
1	BasicEducational	10000
2	BasicManaging	10000
3	benefitLibrary	1000
4	benefitResearch	1000