CENG 351
Recitation

Programming Assignment 1

Fall 2023 - 2024

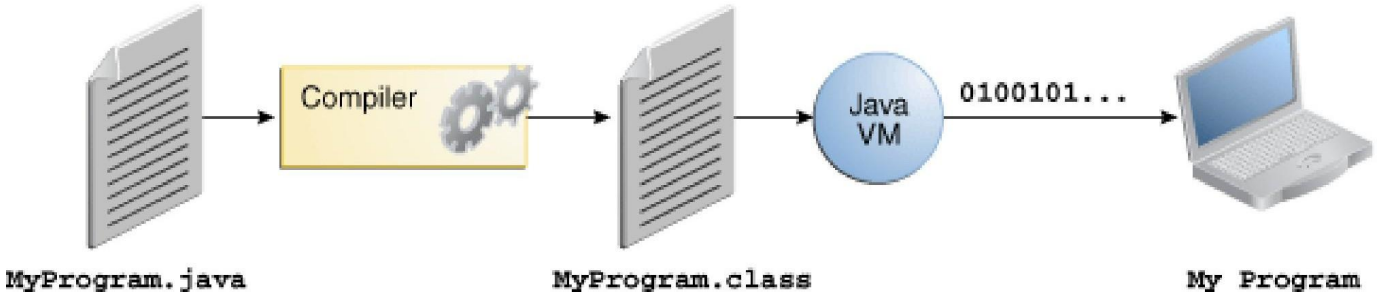
main points

- developing Java software
- MySQL and JDBC
- assignment details

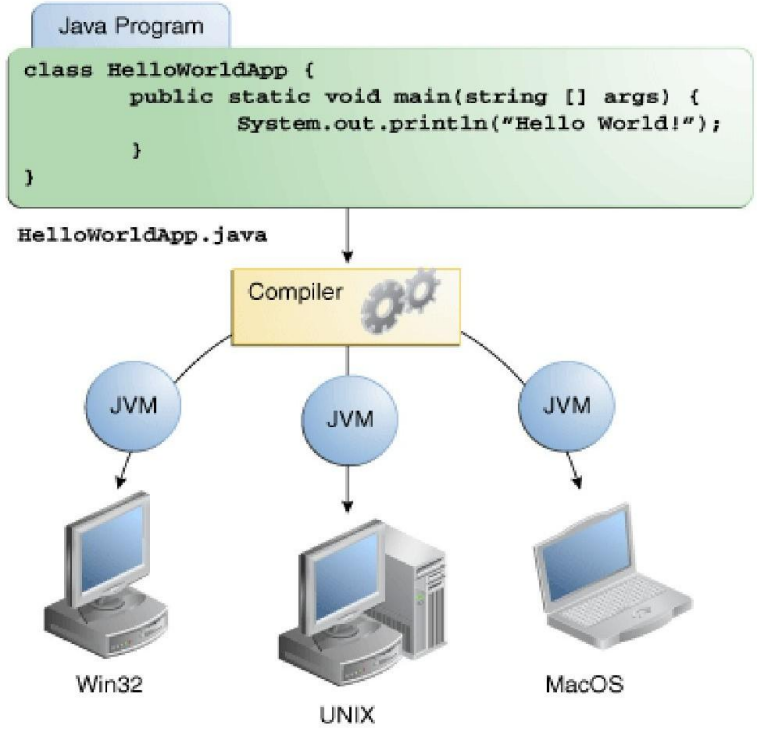
Java programming language

- object-oriented (concepts should be familiar from CENG242)
- currently supported by Oracle Corporation
- JVM & JDK needed to run and develop programs
  - JVM: Java Virtual Machine
  - JDK: Java Development Kit

developing Java software



developing Java software



IDE & JDK options

inek machines:

- Java 14
- Eclipse or Netbeans

recommended local setup:

- Java 14
- IntelliJ (leading IDE for Java)

downloading JDK

- Oracle version:

https://www.oracle.com/java/technologies/javase/jdk14-archive-downloads.html

- OpenJDK version:

https://jdk.java.net/14/

downloading IDE

- IntelliJ:

https://www.jetbrains.com/edu-products/download/#section=idea

- NetBeans:

https://netbeans.apache.org/download/index.html

- Eclipse:

https://www.eclipse.org/downloads/

MySQL

- most popular open source SQL database management system
- developed, distributed, and supported by Oracle Corporation

MySQL

- databases are relational
- data is in separate tables
- rules are set up for governing the relationships between different data fields (e.g.: one-to-one, one-to-many, many-to-many, unique, required, optional)

JDBC driver

- Java API to handle database operations such as:
  - connecting to a database
  - executing queries
  - retrieving query results

connecting to MySQL through a Java class

- access to a functioning MySQL server
  - server credentials are shared via email
- specifying host name, port, database name, username and password in the implementation
- adding the shared .jar file ***mysql-connector-java-8.0.11.jar*** to the Java project libraries

connecting to MySQL via terminal

given the credentials:

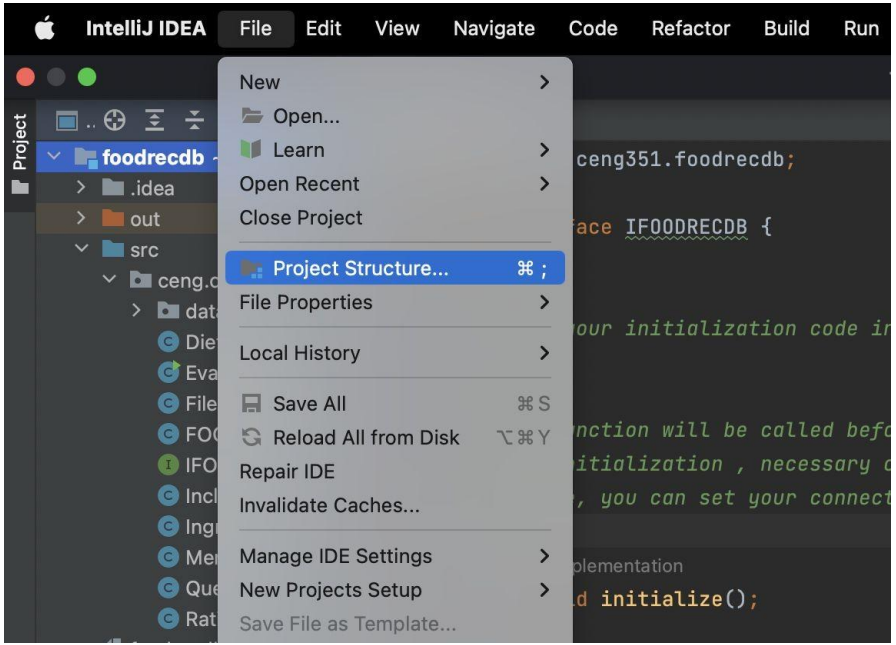
```
hostname: 144.122.71.128

username: e1234567

database: db1234567

password: dummyPassword

port: 8080
```

you can connect by:

```
mysql -h 144.122.71.128 -u e1234567 -D db1234567 -P8080 -pdummyPassword
```

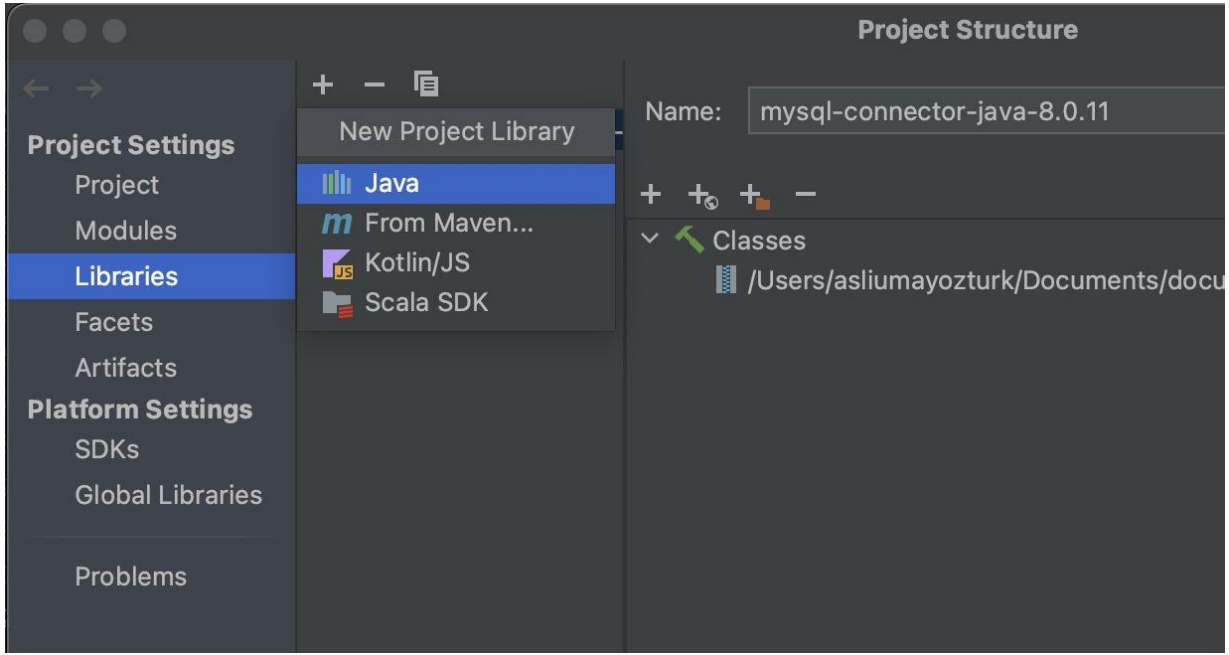
adding .jar file in IntelliJ

- file > project structure



adding .jar file in IntelliJ

- libraries > + (new project library) > Java



about homework

- **Factory** (factoryId:int, factoryName:Text, factoryType:Text, country: Text)
- **Employee** (employeeId:int, employeeName:Text, department:Text, salary: int)
- **Works_In** (factoryId:int, employeeId:int, startDate: Date)
- **Product** (productId:int, productName: Text, productType: Text)
- **Produce** (factoryId:int, productId:int, amount: int, productionCost:int)
- **Shipment** (factoryId:int, productId:int, amount: int, pricePerUnit:int)