

# **CENG 351**

# **Recitation**

## **Programming Assignment 1**

**Fall 2022 - 2023**

# main points

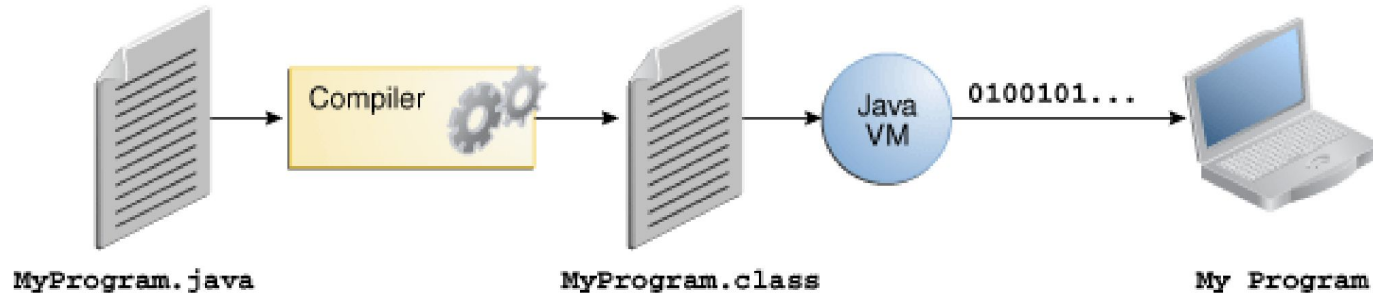
- developing Java software
- MySQL and JDBC
- assignment details

# Java programming language

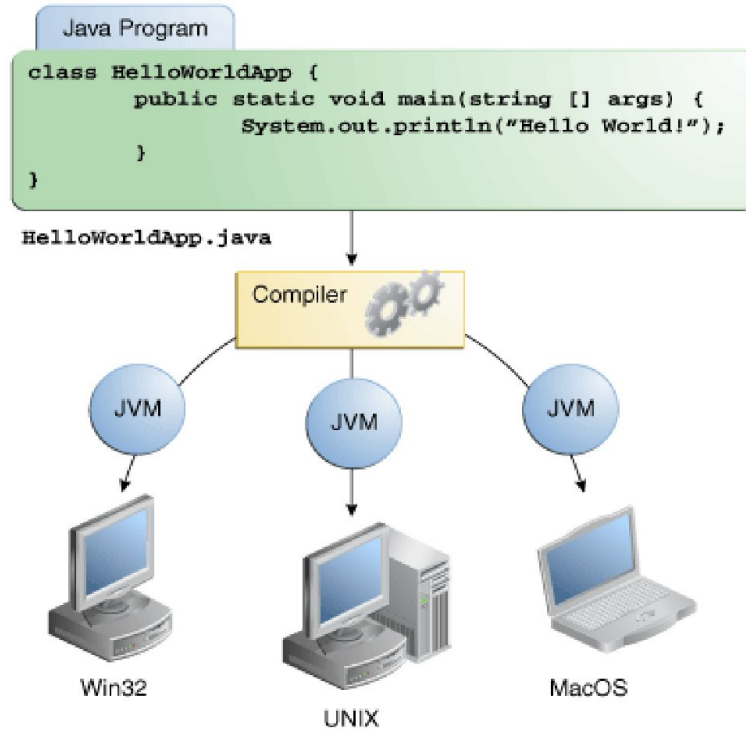
- object-oriented (concepts should be familiar from CENG242)
- currently supported by Oracle Corporation
- JVM & JDK needed to run and develop programs
  - JVM: Java Virtual Machine
  - JDK: Java Development Kit



# developing Java software



# developing Java software



# IDE & JDK options

inex 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: momcorp.ceng.metu.edu.tr

username: e1234567

database: db1234567

password: dummyPassword

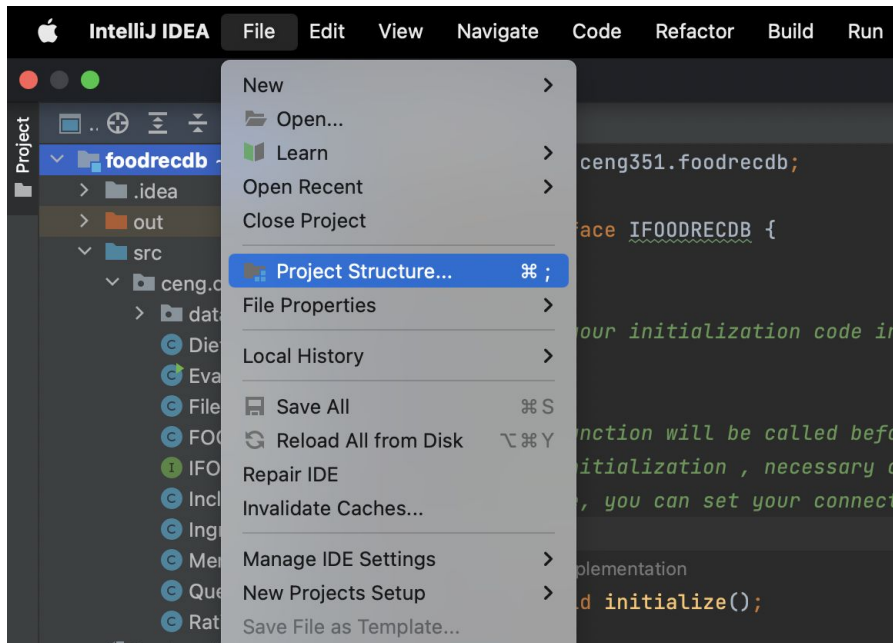
port: 8080

you can connect by:

```
mysql -hmomcorp.ceng.metu.edu.tr -u e1234567 -D db1234567 -P8080 -pdummyPassword
```

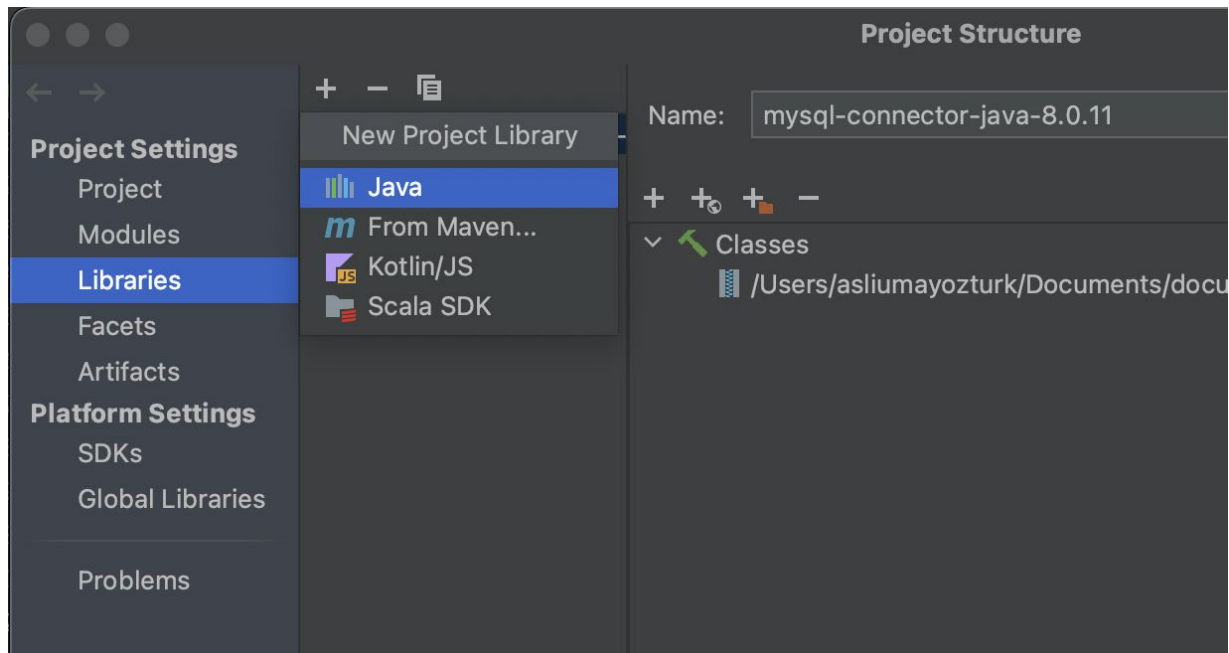
# adding .jar file in IntelliJ

- file > project structure



# adding .jar file in IntelliJ

- libraries > + (new project library) > Java



# assignment details

- **FoodRec** is a food recommendation platform
- **foodrecdb** project communicates with the database for this platform
- there are 5 tables in the database:  
*MenuItems, Ingredients, Includes, Ratings, DietaryCategories*



# assignment details

- **MenuItems**(itemID:int, itemName:varchar(40), cuisine:varchar(20), price:int)
  - food items in the menu
- **Ingredients**(ingredientID:int, ingredientName:varchar(40))
  - ingredients used in food items
- **Includes**(itemID:int, ingredientID:int)
  - tuples to represent that a menu item includes an ingredient
- **Ratings**(ratingID:int, itemID:int, rating:int, ratingDate:date)
  - ratings given for menu items
- **DietaryCategories**(ingredientID:int, dietaryCategory:varchar(20))
  - Tuples to represent the dietary category of ingredients

# assignment details

- minimal Java, mainly SQL queries
  - most Java code (needed classes etc.) is given
- implement the methods of ***IFOODRECDB.java*** interface in a new class named ***FOODRECDB.java***
  - it *is allowed* to implement additional classes

# assignment details

- due: 21 December, Wednesday, 23.55
- PA1 Discussion Forum on ODTUClass for questions