

Java Web Application Development

CST3613

Fall 2022

EXAM

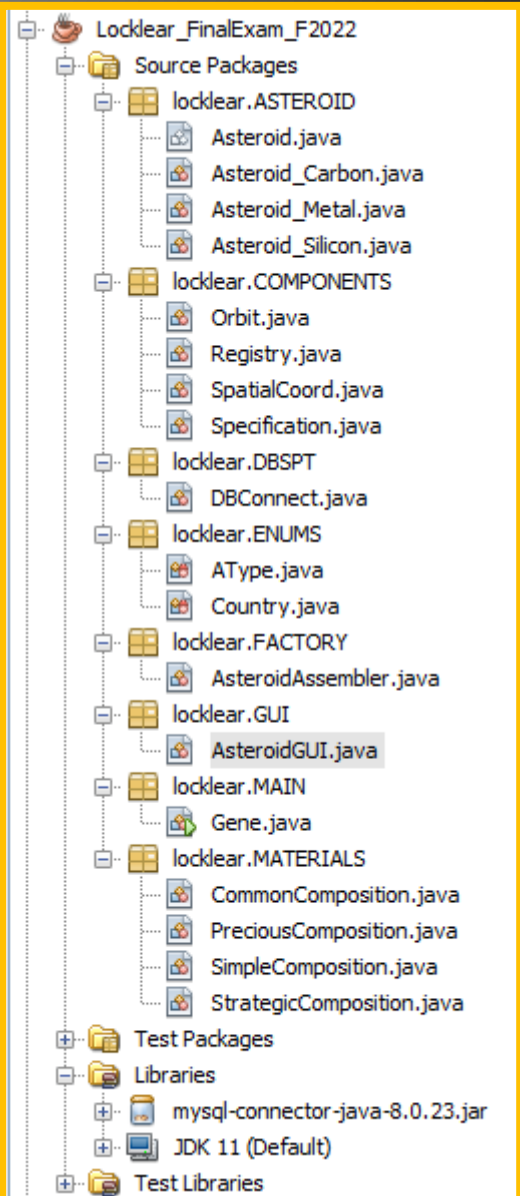


FINAL EXAM

JAVA DESKTOP DATA-DRIVEN APPLICATION

Program Structure

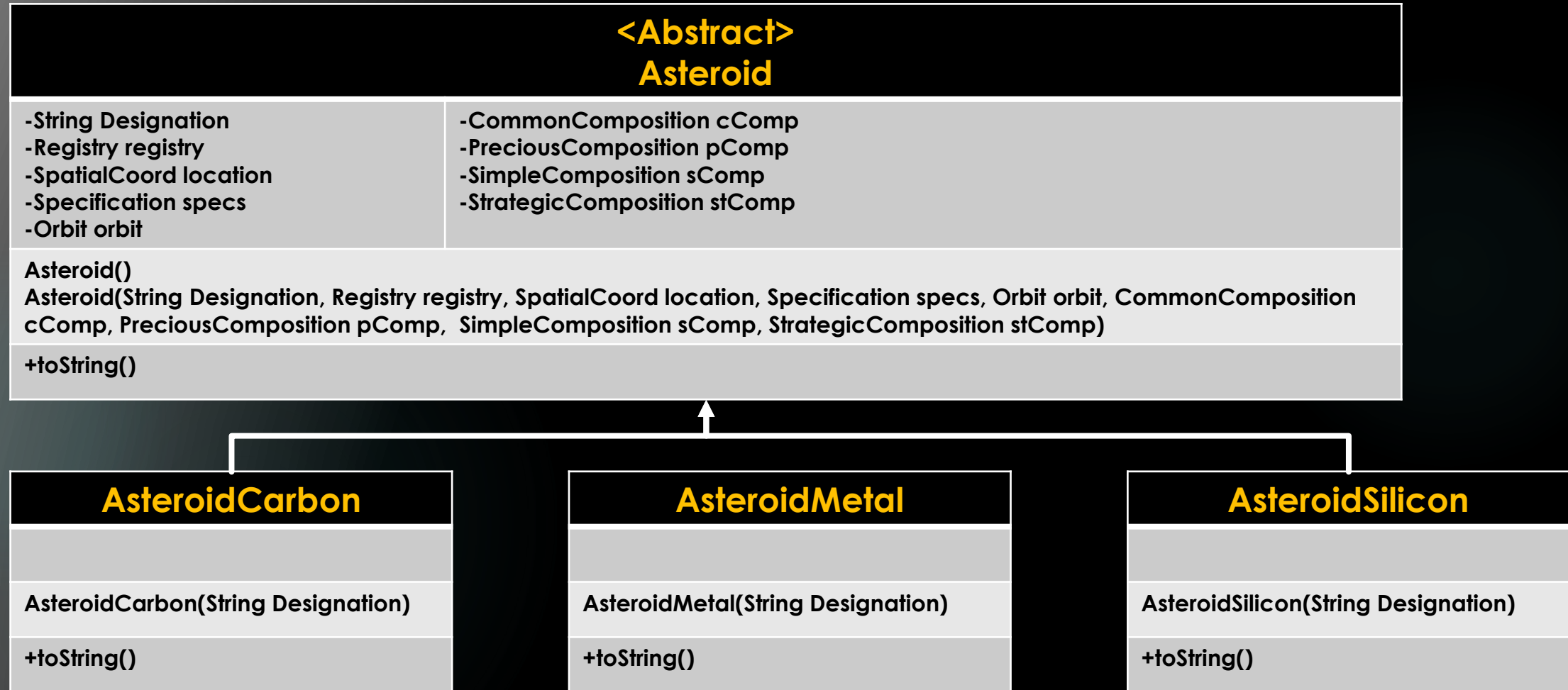
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```
public class Gene {  
  
    public static void main(String[] args) throws SQLException, ClassNotFoundException{  
        AsteroidGUI gui = new AsteroidGUI();  
    }  
}
```

Asteroid Class

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Component Classes

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SpatialCoord

- String Designation
- double X
- double Y
- double Z

SpatialCoord(String Designation, double X, double Y, double Z)

toString()

Registry

- String Designation
- AType type
- Country nation
- String DDate

Registry(String Designation, AType type, Country nation, String DDate)

toString()

Orbit

- String Designation
- double Aphelion
- double Perihelion
- double Eccentricity
- double PeriodOrbit
- double RadiusOrbit

Orbit(String Designation, double Aphelion, double Perihelion, double Eccentricity, double PeriodOrbit, double RadiusOrbit)

toString()

Specification

- String Designation
- double Diameter
- double Mass
- double Density
- double Inclination
- double Rotation

Specification(String Designation, double Diameter, double Mass, double Density, double Inclination, double Rotation)

toString()

Material Classes

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CommonComposition

- String Designation
- double Nickel
- double Molybdenum
- double Iron
- double Zinc

CommonComposition(String Designation, double Nickel, double Molybdenum, double Iron, double Zinc)

+toString()

SimpleComposition

- String Designation
- double Rock
- double Metal

SimpleComposition(String Designation, double Rock, double Metal)

+toString()

PreciousComposition

- String Designation
- double Gold
- double Silver
- double Platinum
- double Palladium
- double Rhodium
- double Ruthenium
- double Iridium
- double Osmium

PreciousComposition(String Designation, double Gold, double Silver, double Platinum, double Palladium, double Rhodium, double Ruthenium, double Iridium, double Osmium)

+toString()

StrategicComposition

- String Designation
- double Chromium
- double Cobalt
- double Tungsten
- double Uranium

StrategicComposition(String Designation, double Chromium, double Cobalt, double Tungsten, double Uranium)

+toString()

DBConnect Class

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DBConnect

-String database
-String user
-String password
-String url
-String port

DBConnect(String database, String port, String user, String password)

+getConnection(): Connection
+executeUseQuery(Connection C): void
+executeSelectQuery(String Query, Connection C): ResultSet
+executeInsertQuery(String Query, Connection C): void

Use file on Blackbaord

Enumerations

AType
Carboneous, Metallic, Silicaceous

Country
US,UK,RUSSIA,CHINA

AsteroidAssembler Class

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AsteroidAssembler

+static Orbit buildOrbit(String D): Orbit
+static buildRegistry(String D): Registry
+static buildSpatialCoord(String D):SpatialCoord
+static buildSpecification(String D):Specification
+static buildSimpleComposition(String D): SimpleComposition
+static buildCommonComposition(String D):CommonComposition
+static buildPreciousComposition(String D):PreciousComposition
+static buildStrategicComposition(String D):StrategicComposition

Method Specifications

+static Orbit buildOrbit(String D)

+static buildRegistry(String D)

+static buildSpatialCoord(String D)

+static buildSpecification(String D)

Builds the corresponding Asteroid component object for the specified Asteroid (Designation) using the asteroids database

Component Object

+static buildSimpleComposition(String D)

+static buildCommonComposition(String D)

+static buildPreciousComposition(String D)

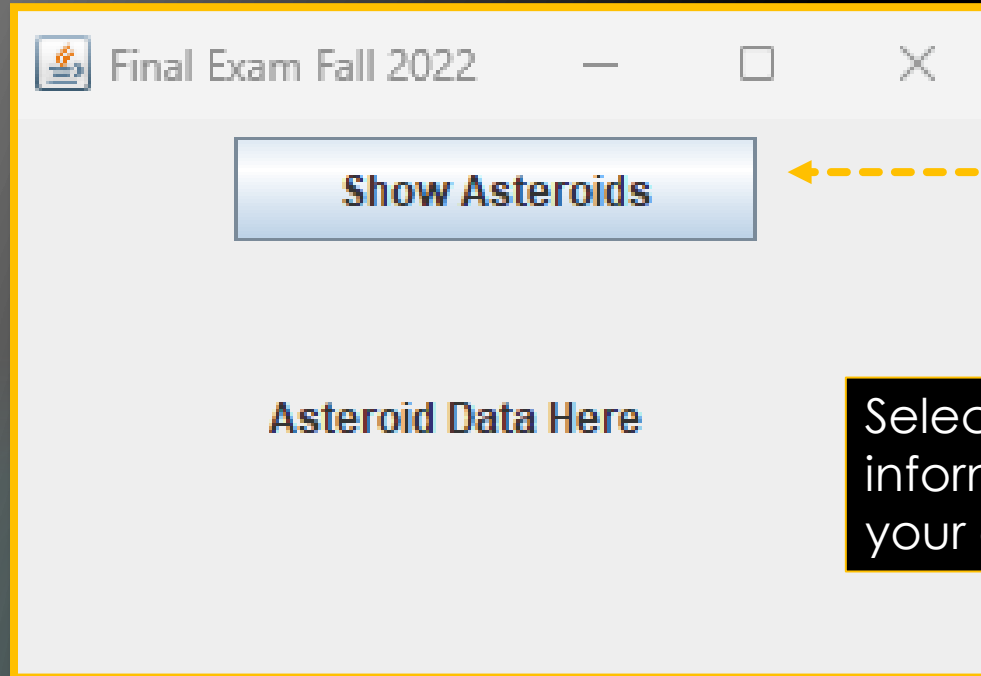
+static buildStrategicComposition(String D)

Builds the corresponding Asteroid material for the specified Asteroid (Designation) using the asteroids database

Material Object

AsteroidGUI Class

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Selecting the 'Show Asteroid' button displays all information about a random asteroid in a format of your choosing.