FINAL CODING EXAM

1. `Transportation` class (30 Point):

- The `Transportation` class is an abstract class that represents a general form of transportation.
- It contains four properties: `name`, `destination`, `speed`, and `passengers`.
- There are two constructors: one with no arguments, and one with `name`, `destination`, and `speed` arguments.
- There are accessor methods for `name`, `destination`, `speed`, and `passengers`.
- There is a mutator method to add passengers to the `passengers` ArrayList.
- It also contains two abstract methods: `totalPeople()` and `toString()`.
- The `totalPeople()` method returns the total number of people on the transportation.
- The `toString()` method returns a String representation of the `Transportation` object.

2. `Passport` interface (10 Point):

- The `Passport` interface represents a passport that can be checked to determine if it is valid for travel.
- It contains one abstract method: `passportCheck()`.
- The `passportCheck()` method returns a boolean value indicating whether or not the passport is valid.

3. `Airplane` class (20 Point):

- The `Airplane` class extends the `Transportation` class and implements the `Passport` interface.
- It contains two additional properties: `pilots` and `belongings`.
- There are two constructors: one with no arguments, and one with `name`, `destination`, and `speed` arguments.
- There are accessor methods for `pilots` and `belongings`.
- There are mutator methods to add pilots and belongings to the respective ArrayLists.
- It overrides the `totalPeople()` method from the `Transportation` class to include the number of pilots.
- It also overrides the `toString()` method from the `Transportation` class to include the airline name, speed, and total number of people.

4. `SchoolBus` class (20 Point):

- The `SchoolBus` class extends the `Transportation` class.
- It contains one additional property: `drivers`.
- There are two constructors: one with no arguments, and one with `name`, `destination`, and `speed` arguments.
- There is an accessor method for `drivers`.

- There is a mutator method to add drivers to the `drivers` ArrayList.
- It overrides the `totalPeople()` method from the `Transportation` class to include the number of drivers.
- It also overrides the `toString()` method from the `Transportation` class to include the school bus name, speed, and total number of people.

5. `Display` class (20 Point):

- The `Display` class contains two methods to display the passengers on either an `Airplane` or `SchoolBus`.
- There is a constructor with no arguments.
- The `airplanePassengers()` method takes a `Transportation` object as a parameter and displays the passengers on the `Airplane`.
- The `schoolBusPassengers()` method takes a `Transportation` object as a parameter and displays the passengers on the `SchoolBus`.
- Both methods use the `instanceof` keyword to check if the `Transportation` object is an `Airplane` or a `SchoolBus`, and then display the appropriate passengers using a `for` loop.

DETAIL INFORMATION

Transportation

Properties
- `private String name`: name of the transportation.
- `private String destination`: destination of the transportation.
- `private double speed`: speed of the transportation.
- `private final ArrayList<String> passengers`: an ArrayList of passengers that are in the transportation.

Constructors
- `Transportation()`: creates an instance of the Transportation class with an empty ArrayList of passengers.
- `Transportation(String name, String destination, double speed)`: creates an instance of the Transportation class with a name, a destination, a speed, and an empty ArrayList of passengers.

Accessors and Mutators
- `public String getName()`: returns the name of the transportation.
- `public String getDestination()`: returns the destination of the transportation.
- `public double getSpeed()`: returns the speed of the transportation.
- `public ArrayList<String> getPassengers()`: returns the ArrayList of passengers in the transportation.
- `public void setPassengers(String passengers)`: adds a passenger to the ArrayList of passengers in the transportation.

Abstract Methods
- `public abstract int totalPeople()`: returns the total number of people in the transportation.
- `public abstract String toString()`: returns a String representation of the transportation.

Passport

Methods
- `public abstract boolean passportCheck()`: checks if a passport is present.

Airplane

Properties
- `private final ArrayList<String> pilots`: an ArrayList of pilots that are in the airplane.
- `private final ArrayList<String> belongings`: an ArrayList of belongings that are in the airplane.

Constructors
- `Airplane()`: creates an instance of the Airplane class with an empty ArrayList of pilots and belongings.
- `Airplane(String name, String destination, double speed)`: creates an instance of the Airplane class with a name, a destination, a speed, and an empty ArrayList of pilots and belongings.

Accessors and Mutators
- `public ArrayList<String> getPilots()`: returns the ArrayList of pilots in the airplane.
- `public ArrayList<String> getBelongings()`: returns the ArrayList of belongings in the airplane.
- `public void setPilots(String pilots)`: adds a pilot to the ArrayList of pilots in the airplane.
- `public void setBelongings(String belongings)`: adds a belonging to the ArrayList of belongings in the airplane.

Implemented Method
- `public boolean passportCheck()`: checks if a passport is present in the belongings ArrayList (Check whether String "Passport" is inside of the belongings ArrayList).

Inherited Methods
- `public int totalPeople()`: returns the total number of people in the airplane.
- `public String toString()`: returns a String representation of the airplane.

SchoolBus

Properties
- `private final ArrayList<String> drivers`: an ArrayList of drivers that are in the school bus.

Constructors
- `SchoolBus()`: creates an instance of the SchoolBus class with an empty ArrayList of drivers.
- `SchoolBus(String name, String destination, double speed)`: creates an instance of the SchoolBus class with a name, a destination, a speed, and an empty ArrayList of drivers.

Accessors and Mutators
- `public ArrayList<String> getDrivers()`: returns the ArrayList of drivers in the school bus.
- `public void setDrivers(String drivers)`: adds a driver to the ArrayList of drivers in the school bus.

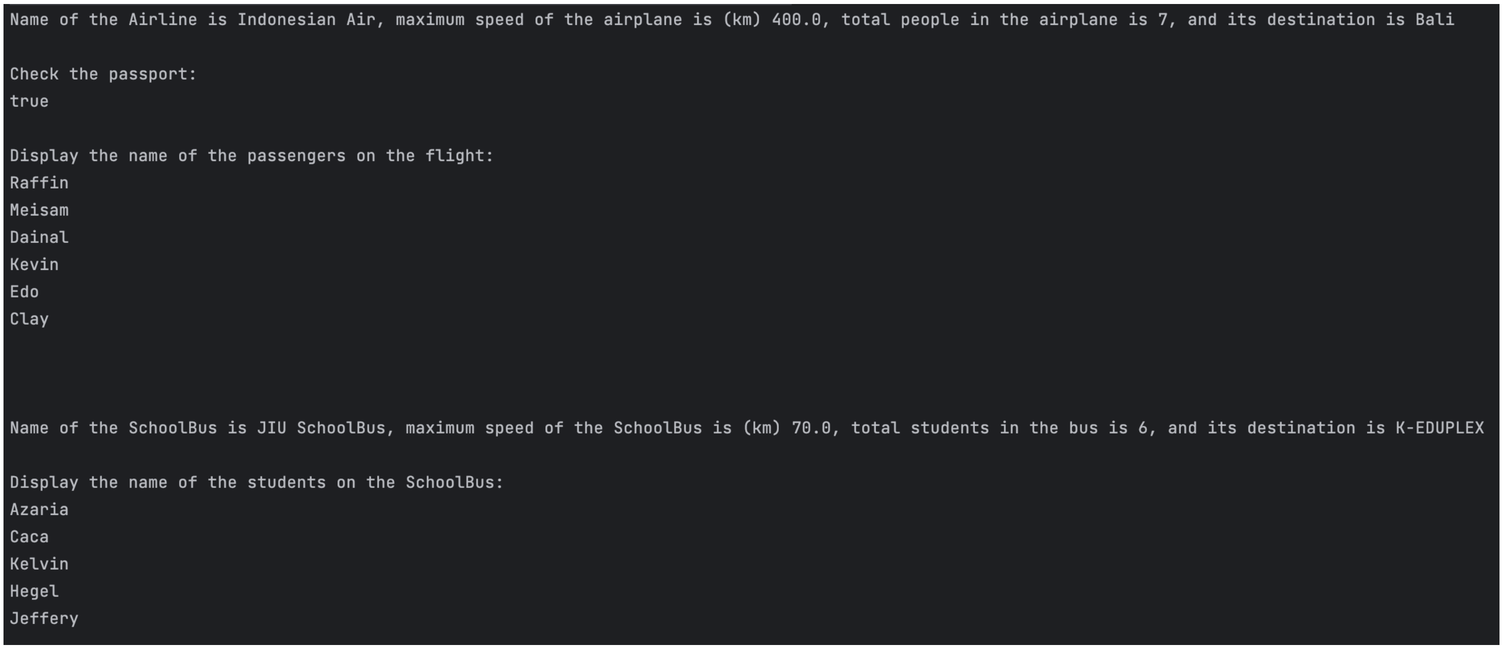
Inherited Methods
- `public int totalPeople()`: returns the total number of people in the school bus.
- `public String toString()`: returns a String representation of the school bus.

Display

Constructors
- `Display()`: creates an instance of the Display class.

Methods
- `airplanePassengers(Transportation transportation)`: takes a `Transportation` object as input and prints the passengers on the airplane (if the input is an instance of the `Airplane` class).
- `schoolBusPassengers(Transportation transportation)`: takes a `Transportation` object as input and prints the passengers on the school bus (if the input is an instance of the `SchoolBus` class).

TEST CODE OUTPUT
(You should have same result as following)



```
Name of the Airline is Indonesian Air, maximum speed of the airplane is (km) 400.0, total people in the airplane is 7, and its destination is Bali

Check the passport:
true

Display the name of the passengers on the flight:
Raffin
Meisam
Dainal
Kevin
Edo
Clay



Name of the SchoolBus is JIU SchoolBus, maximum speed of the SchoolBus is (km) 70.0, total students in the bus is 6, and its destination is K-EDUPLEX

Display the name of the students on the SchoolBus:
Azaria
Caca
Kelvin
Hegel
Jeffery
```