Organization Payment

Problem:

An organization has employees of two types: Salaried employees and contract employees. Each employee has a name, mailing address, email, and pay. Pay of a salaried employee is specified at the time of hire as amount per annum to be paid as 26 equal payments. The pay of a contract employees is specified each time when the contract is offered and is paid in three equal payments.

Develop a Java application that can prepare payment statement for all employees.

The output of the application should be:

Name	Employee Type	Email	Payment amount
.....	.....	.....	$dddd.dd
.....	.....	.....	$dddd.dd
.....	.....	.....	$dddd.dd

Architecture of the project:

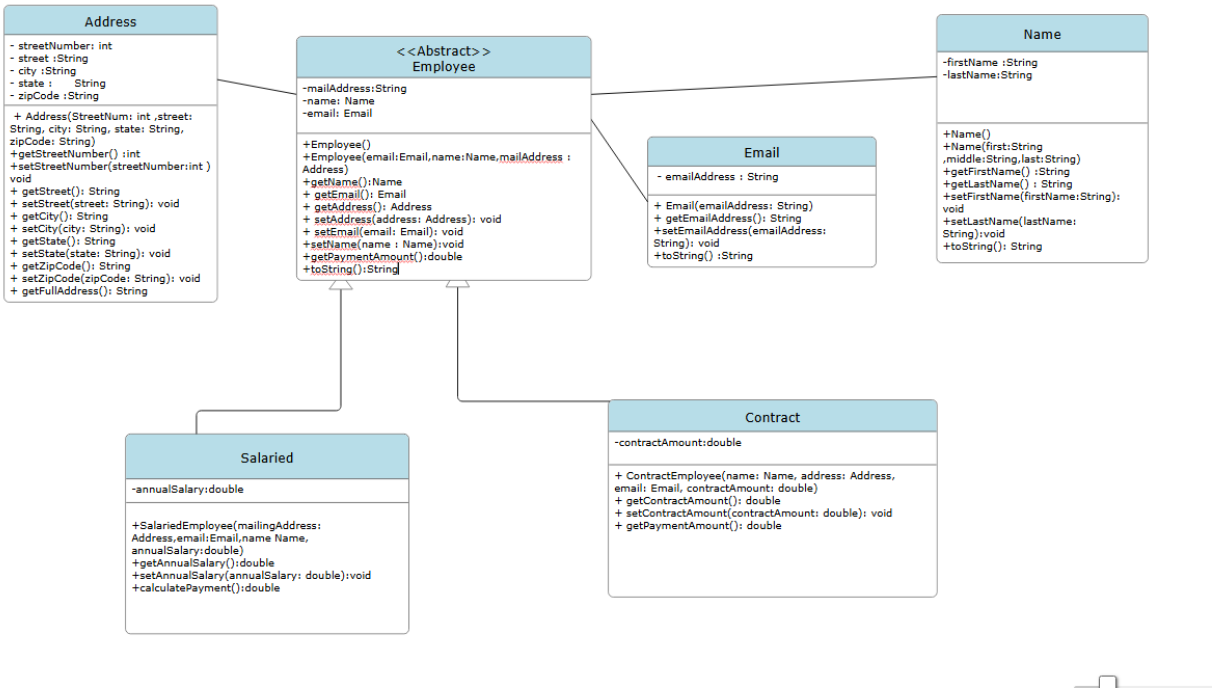
Make the mailing address as an instance of Address object/class.

Make the name variable as an instance of Name object/class.

Make the email variable as an instance of Email object/class.

The Employee is an abstract superclass with Contract and Salaried Employee as its subclass.

UML Diagram for this project:



Algorithm:

For Name, Email, and Address Class:

1.) Make a class for its address and all the attributes provided in UML diagram
2.) Define the constructors in the class
3.) define mutator and accessor for each of the attributes and provide a overridden toString method.

Employee Class:

1.) Define the class as an abstract class.
2.) Make the setters and getters for its attributes but use the corresponding object class like the name class.
3.) Make the payment calculator method as an abstract that can be overridden by subclass

For Salaried and Contract Employee class:

1.) Define the class as an extension of Employee class.
2.) Use the super() annotation in order to access the superclass attributes.
3.) Use the overridden payment calculator method of its superclass to calculate the payment of each employee type.

Main Class

1.) Make an application as the main class of the project.

2.) Make an array list with Employee as its element object.
3.) Make an instance object of each employee attribute such as name, email, address since they are all a separate object instead of being a primitive data type.
4.) Add all the instantiated variables as the argument for the Employee object.
5.) Make a separate method to generate the pay statement and its display.
6.) In the pay statement method, invoke the date built-in class from JVM in order to format the date in the statement.
7.) Identify if the employee type is contractual or salaried.
8.) Use an enhanced for loop to print out the name, employee type, email and their salary

Code:

Address sclass

```
/**
 *
 */

public class Address {
    private int streetNumber;
    private String street;
    private String city;
    private String state;
    private String zipCode;

    // arg constructor
    public Address(int streetNumber,String street, String city, String state,
String zipCode) {
        this.streetNumber=streetNumber;
        this.street = street;
        this.city = city;
        this.state = state;
        this.zipCode = zipCode;
    }

    // Getter and Setter methods for the attributes
    public String getStreet() {
        return this.street;
    }
    public int getStreetNumber(){
        return this.streetNumber;
    }
```

```
    public void setStreetNumber(int streetNumber){
       this.streetNumber = streetNumber;
    }
    public void setStreet(String street) {
        this.street = street;
    }

    public String getCity() {
        return this.city;
    }

    public void setCity(String city) {
        this.city = city;
    }

    public String getState() {
        return this.state;
    }

    public void setState(String state) {
        this.state = state;
    }

    public String getZipCode() {
        return this.zipCode;
    }

    public void setZipCode(String zipCode) {
        this.zipCode = zipCode;
    }

    // Full address as a string in a toString method
    @Override
    public String toString() {
        return this.streetNumber+", "+this.street + ", " + this.city + ", " +
this.state + " " + this.zipCode;
    }
}
```

Contract Employee Class

```
// subclass for contract employee
class ContractEmployee extends Employee {
```

```
    private double contractAmount;

    // Constructor
    public ContractEmployee(Name name, Address address, Email email, double
contractAmount) {
        super(name, address, email);//inherited attributes from superclass
employee
        this.contractAmount = contractAmount;
    }

    // Getter and Setter methods
    public double getContractAmount() {
        return this.contractAmount;
    }

    public void setContractAmount(double contractAmount) {
        this.contractAmount = contractAmount;
    }

    // Override method to calculate payment amount
    @Override
    public double getPaymentAmount() {
        return this.contractAmount / 3;//three nstallment payment
    }


}
```

Email Class

```
public class Email {
    private String emailAddress;

    // arg constructor
    public Email(String emailAddress) {
        this.emailAddress = emailAddress;
    }

    // Getter and setter for email address
    public String getEmailAddress() {
        return this.emailAddress;
    }

    //
```

```
    public void setEmailAddress(String emailAddress) {
        this.emailAddress = emailAddress;
    }

    // toString method()
    @Override
    public String toString() {
        return this.emailAddress;
    }
}
```

Employee class

```
abstract class Employee {
    private Name name;
    private Address mailingAddress;
    private Email email;

    // Constructor
    public Employee(Name name, Address mailingAddress, Email email) {
        this.name = name;
        this.mailingAddress = mailingAddress;
        this.email = email;
    }

    // getters and setters for the name
    public Name getName() {
        return this.name;
    }

    public Address getMailingAddress() {
        return this.mailingAddress;
    }

    public void setAddress(Address mailingAddress) {
        this.mailingAddress = mailingAddress;
    }

    public Email getEmail() {
        return this.email;
    }

    public void setEmail(Email email) {
```

```
        this.email = email;
    }

    // Abstract method to calculate payment amount

    public abstract double getPaymentAmount();
    @Override
    public String toString() {
    return String.format("%s\t%s\t%s\t$%.2f",
name.toString(),  email.toString(),mailingAddress.toString(),getPaymentAmount());
   }

}
```

Name class

```
public class Name {
    private String firstName;
    private String lastName;

    // Constructor with arguments
    public Name(String firstName, String lastName) {
        this.firstName = firstName;
        this.lastName = lastName;
    }

    // Getter and Setter methods
    public String getFirstName() {
        return this.firstName;
    }

    public void setFirstName(String firstName) {
        this.firstName = firstName;
    }

    public String getLastName() {
        return this.lastName;
    }

    public void setLastName(String lastName) {
        this.lastName = lastName;
```

```
    }

    // @Override
    public String toString() {
        return this.firstName + " " + this.lastName;
    }
}
```

```
//class for the salary employee subclass
class SalariedEmployee extends Employee {
    private double annualSalary;

    // Constructor with arguments
    public SalariedEmployee(Name name, Address address, Email email, double
annualSalary) {
        super(name, address,email);//inherited from the superclass Employee
        this.annualSalary = annualSalary;
    }

    // Getter and Setter methods
    public double getAnnualSalary() {
        return this.annualSalary;
    }

    public void setAnnualSalary(double annualSalary) {
        this.annualSalary = annualSalary;
    }

    // Override method to calculate payment amount
    @Override
    public double getPaymentAmount() {
        return this.annualSalary / 26;// annual salary for 26 equal payment
    }
}
```

Main Class Application

```
/**
 *
 * Application for the employee program
```

```java
 */
import java.util.ArrayList;

import java.text.SimpleDateFormat;
import java.util.Date;



public class App {
    public static void main(String[] args) {
        // create an arrayList with Employee as an element object
        ArrayList<Employee> employees = new ArrayList<>();

       // make an object of name,address,and email
        Address address1 = new Address(45," Baker Street", "NYC", "New York",
"90845");
        Name name1 = new Name("Iroqois", "Pliskin");
        Email email1 = new Email("solSnake_32@fox.com");

        Address address2 = new Address(23," Kamurocho Street ", "Tokyo", "Kanto",
"67B09");
        Name name2 = new Name("Kiryu", "Kazuma");
        Email email2 = new Email("kkaz@gmail.com");

        Address address3 = new Address(78," Beverly Hills ", "Los Angeles",
"California", "90210");
        Name name3 = new Name("Travis", "Scott");
        Email email3 = new Email("scotTy@yahoomail.com");

        // Creating employees and its type
        employees.add(new SalariedEmployee(name1, address1, email1, 52000));
        employees.add(new SalariedEmployee(name3, address3, email3, 78000));
        employees.add(new ContractEmployee(name2, address2, email2, 15000));



        // Generating payment statement via the getPaymentStatement method
        generatePaymentStatement(employees);
    }

    public static void generatePaymentStatement(ArrayList<Employee> employees) {
        // Format and display current date using the built-in date object/class
        String currentDate = new SimpleDateFormat("MM-dd-yyyy").format(new
Date());
        System.out.println("Employees Payment Statement");
```

```
        System.out.println("Date: " + currentDate);  // Displaying the date in
the header
        System.out.println();
        System.out.printf("%-20s %-15s %-30s %-15s%n", "Name", "Employee Type",
"Email", "Payment Amount");
        System.out.println("-----------------------------------------------------
---------------");

        for (Employee employee : employees) {// enhanced for loop
            String employeeType;
            if (employee instanceof SalariedEmployee) {// if employee
                //is an instance of salaried type, set it to salaried else
contract
                employeeType = "Salaried";
            } else {
                employeeType = "Contract";
            }
            System.out.printf("%-20s %-15s %-30s $%-15.2f%n",
                    employee.getName().toString(),
                    employeeType,
                    employee.getEmail(),
                    employee.getPaymentAmount());
        }
    }
}
```

Output:

```
Employees Payment Statement
Date: 03-27-2025

Name                 Employee Type   Email                          Payment Amount
-------------------------------------------------------------------
Iroqois Pliskin      Salaried        solSnake_32@fox.com            $2000.00
Kiryu Kazuma         Salaried        kkaz@gmail.com                 $3115.38
Travis Scott         Contract        scotTy@yahoomail.com           $6666.67
PS C:\Users\ralph\Desktop\Sheridan\sem2\JAVA 1\Assignment3ByRalphSabio\src>
```