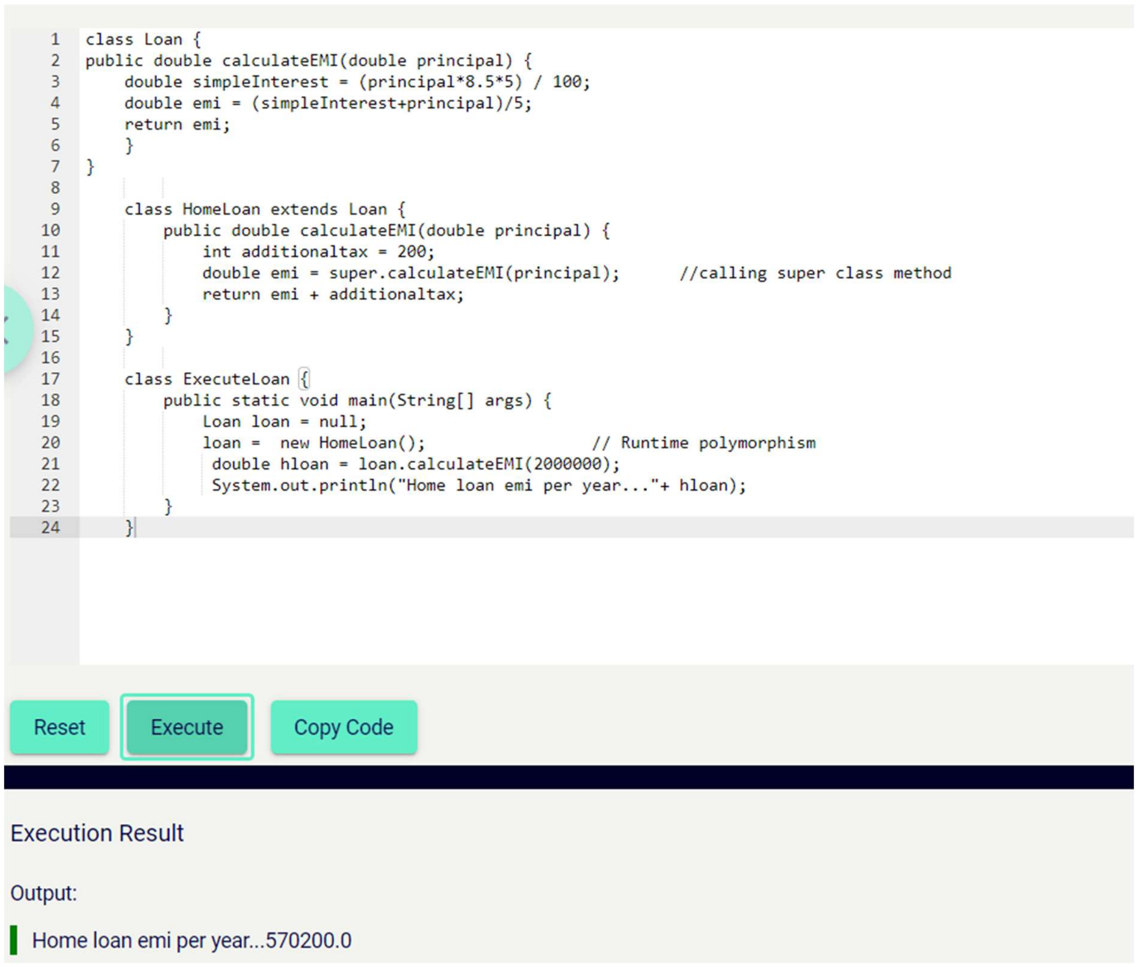
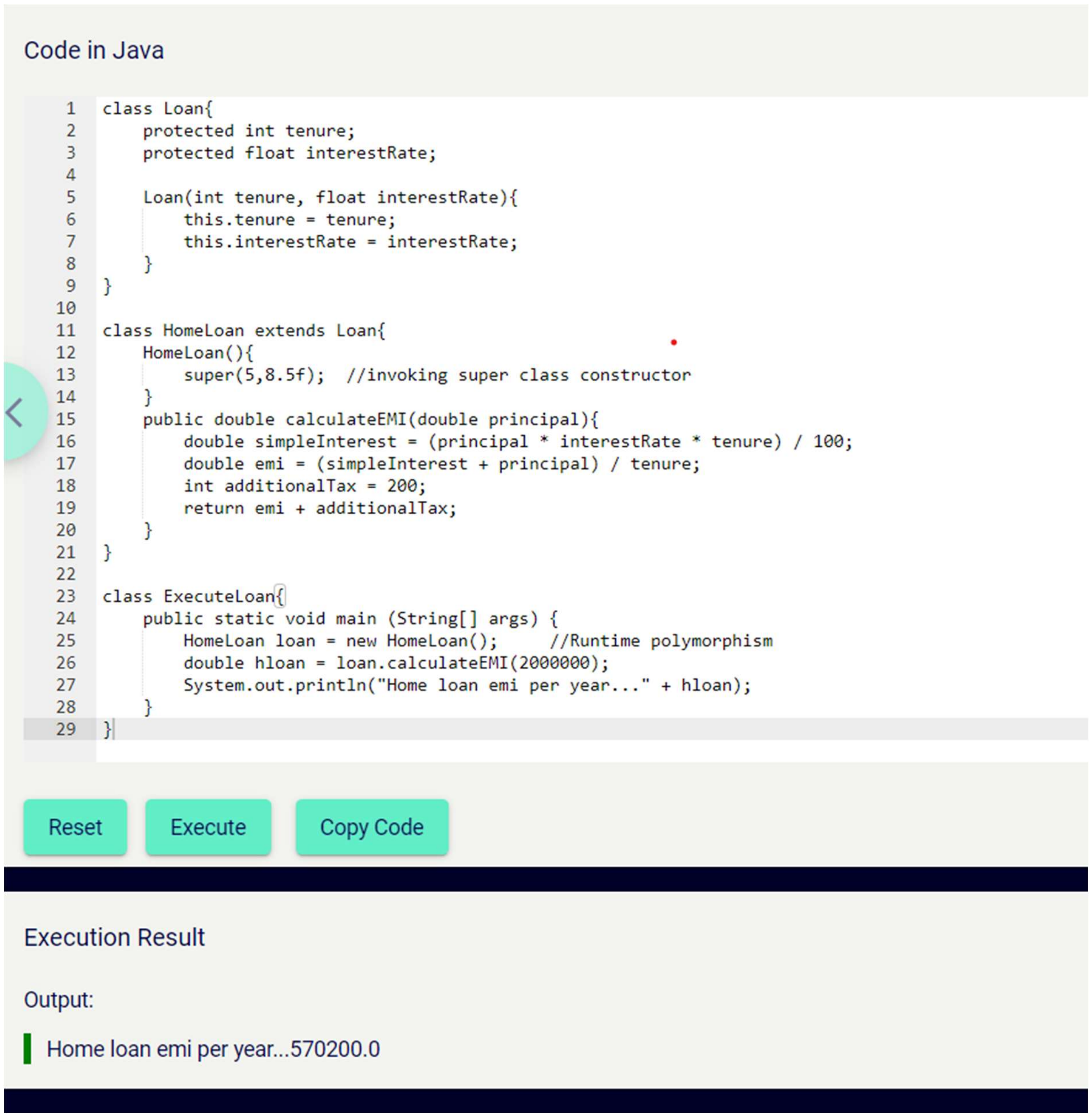


```
class Loan {
public double calculateEMI(double principal) {
    double simpleInterest = (principal*8.5*5) / 100;
    double emi = (simpleInterest+principal)/5;
    return emi;
    }
}

    class HomeLoan extends Loan {
        public double calculateEMI(double principal) {
            int additionaltax = 200;
            double emi = super.calculateEMI(principal);      //calling super class method
            return emi + additionaltax;
        }
    }

    class ExecuteLoan {
        public static void main(String[] args) {
            Loan loan = null;
            loan =  new HomeLoan();                  // Runtime polymorphism
             double hloan = loan.calculateEMI(2000000);
             System.out.println("Home loan emi per year..."+ hloan);
        }
    }
```

Execution Result

Output:

```
Home loan emi per year...570200.0
```

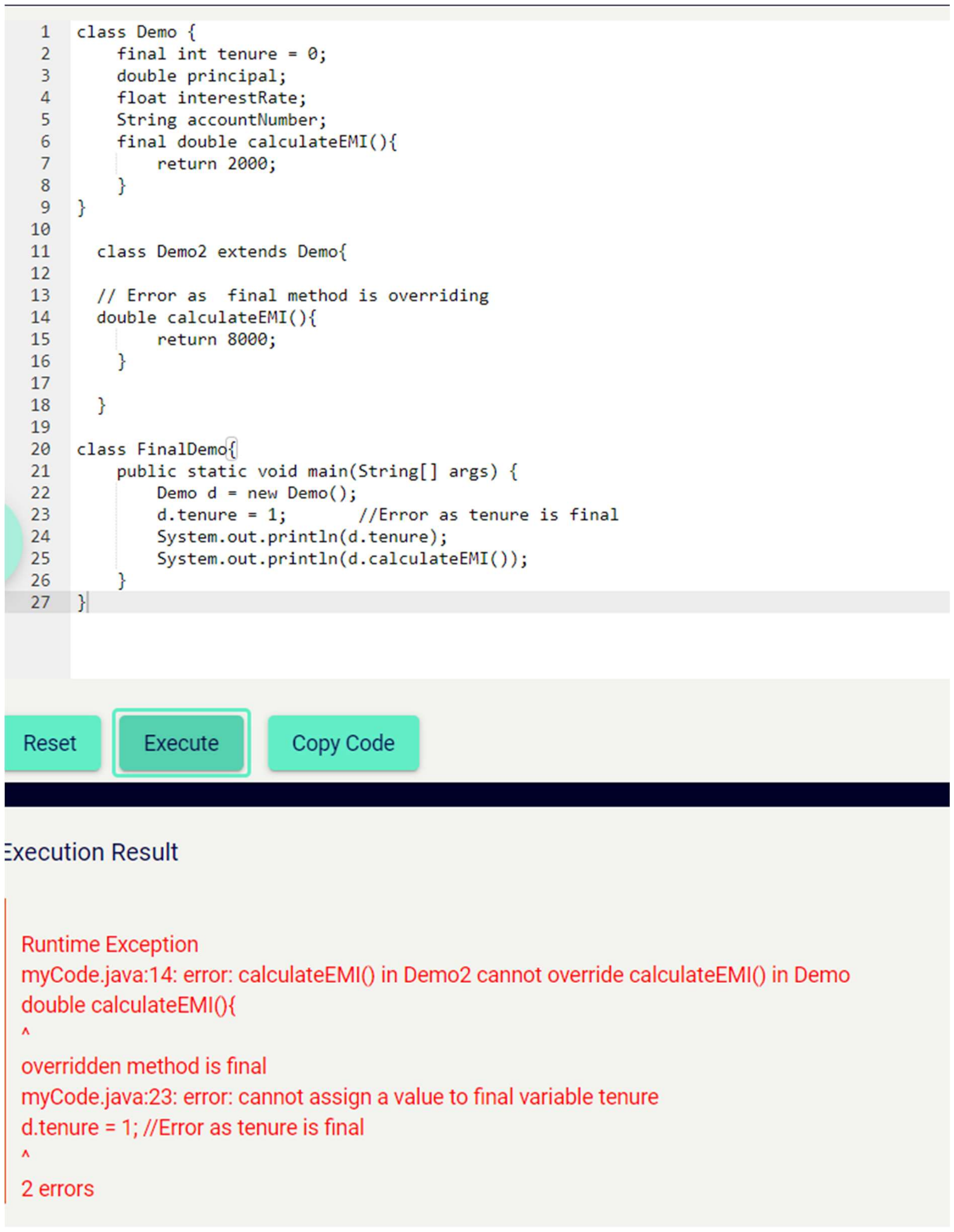

Code in Java

```java
class Loan{
    protected int tenure;
    protected float interestRate;

    Loan(int tenure, float interestRate){
        this.tenure = tenure;
        this.interestRate = interestRate;
    }
}

class HomeLoan extends Loan{
    HomeLoan(){
        super(5,8.5f);  //invoking super class constructor
    }
    public double calculateEMI(double principal){
        double simpleInterest = (principal * interestRate * tenure) / 100;
        double emi = (simpleInterest + principal) / tenure;
        int additionalTax = 200;
        return emi + additionalTax;
    }
}

class ExecuteLoan{
    public static void main (String[] args) {
        HomeLoan loan = new HomeLoan();     //Runtime polymorphism
        double hloan = loan.calculateEMI(2000000);
        System.out.println("Home loan emi per year..." + hloan);
    }
}
```

Execution Result

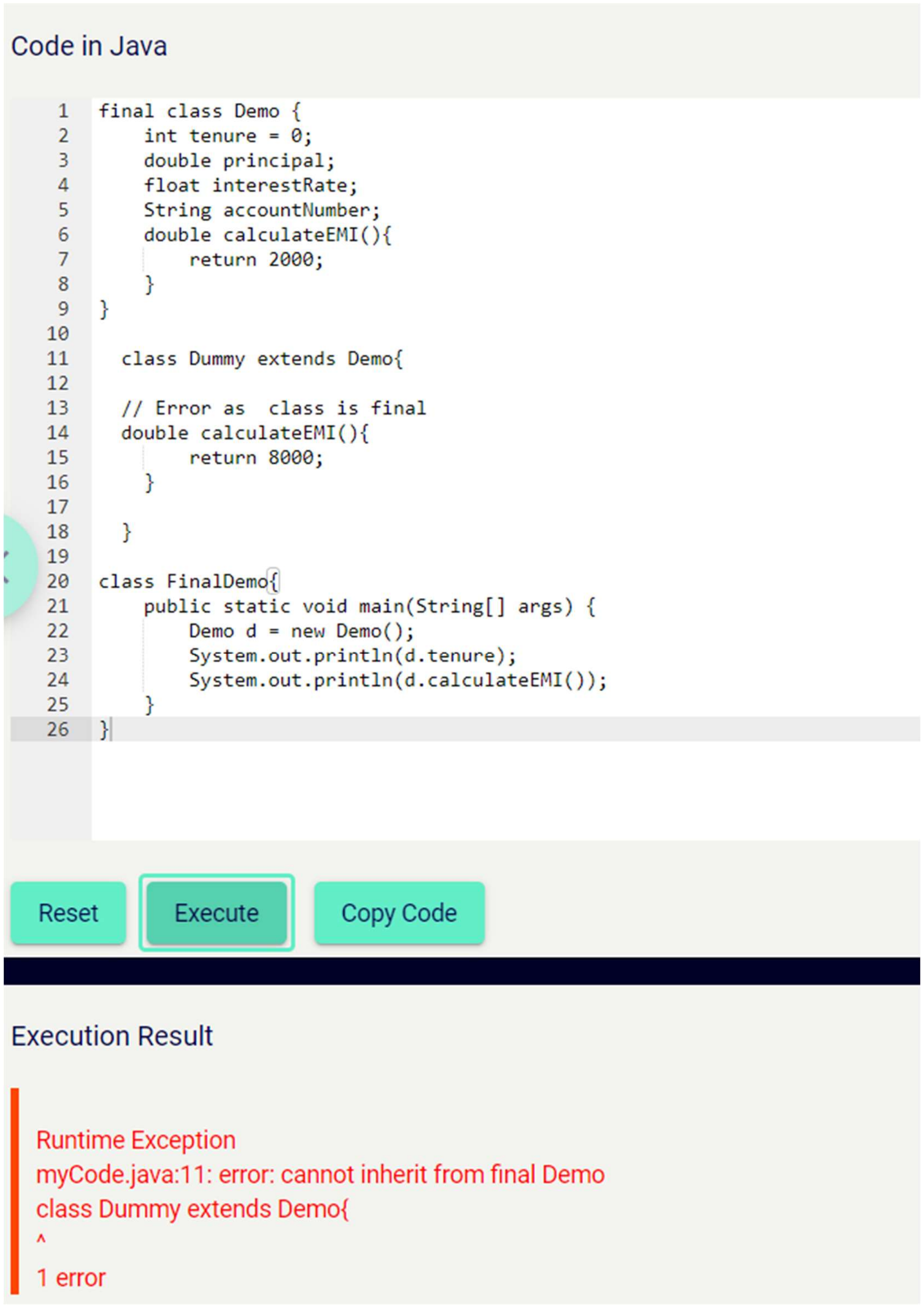
Output:

```
Home loan emi per year...570200.0
```



```java
class Demo {
    final int tenure = 0;
    double principal;
    float interestRate;
    String accountNumber;
    final double calculateEMI(){
        return 2000;
    }
}

  class Demo2 extends Demo{

  // Error as  final method is overriding
  double calculateEMI(){
        return 8000;
    }

  }

class FinalDemo{
    public static void main(String[] args) {
        Demo d = new Demo();
        d.tenure = 1;       //Error as tenure is final
        System.out.println(d.tenure);
        System.out.println(d.calculateEMI());
    }
}
```

```
Runtime Exception
myCode.java:14: error: calculateEMI() in Demo2 cannot override calculateEMI() in Demo
double calculateEMI(){
^
overridden method is final
myCode.java:23: error: cannot assign a value to final variable tenure
d.tenure = 1; //Error as tenure is final
^
2 errors
```

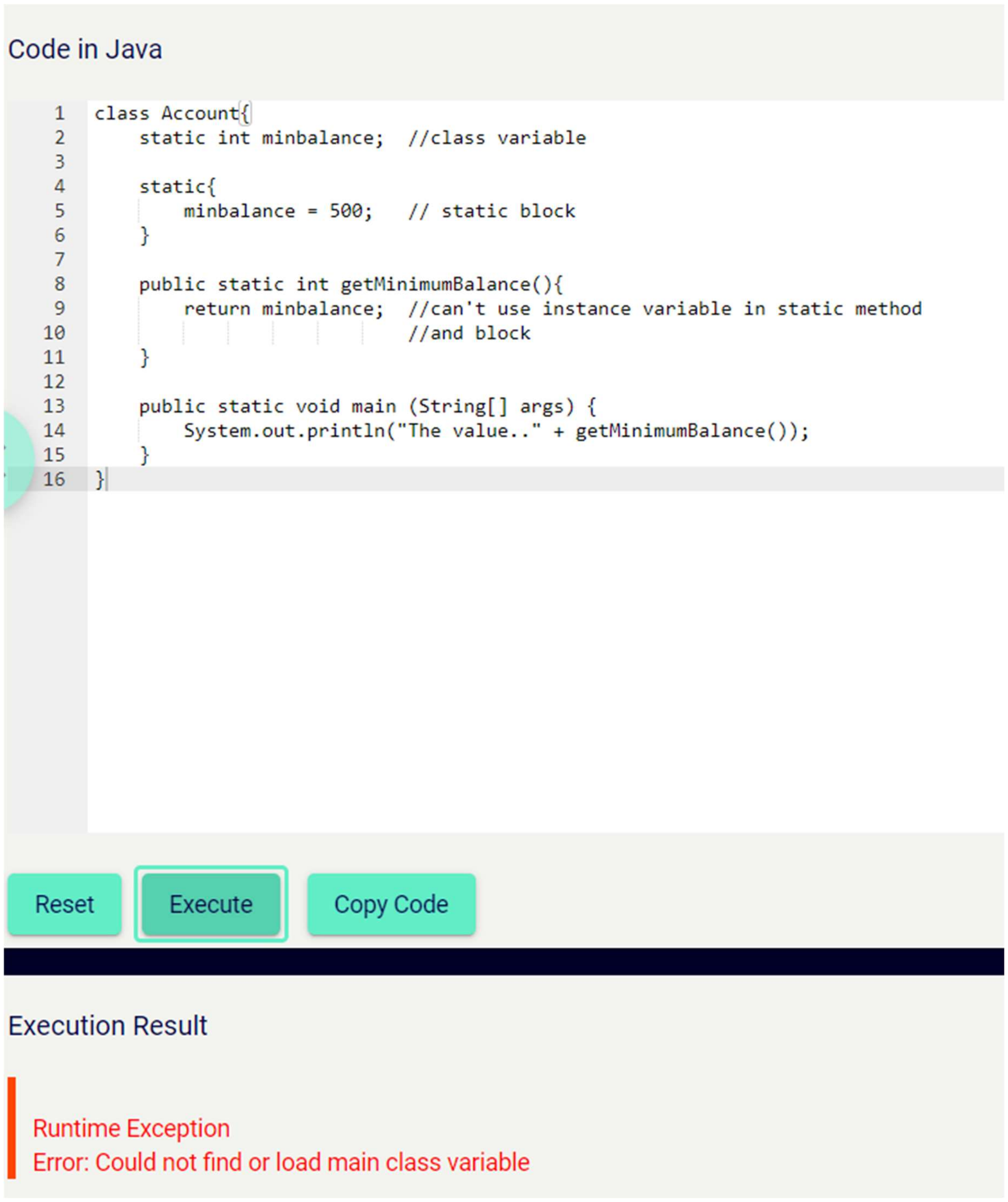


Code in Java

```
final class Demo {
    int tenure = 0;
    double principal;
    float interestRate;
    String accountNumber;
    double calculateEMI(){
        return 2000;
    }
}

  class Dummy extends Demo{

  // Error as  class is final
  double calculateEMI(){
        return 8000;
    }

  }

class FinalDemo{
    public static void main(String[] args) {
        Demo d = new Demo();
        System.out.println(d.tenure);
        System.out.println(d.calculateEMI());
    }
}
```

Execution Result

```
Runtime Exception
myCode.java:11: error: cannot inherit from final Demo
class Dummy extends Demo{
^
1 error
```

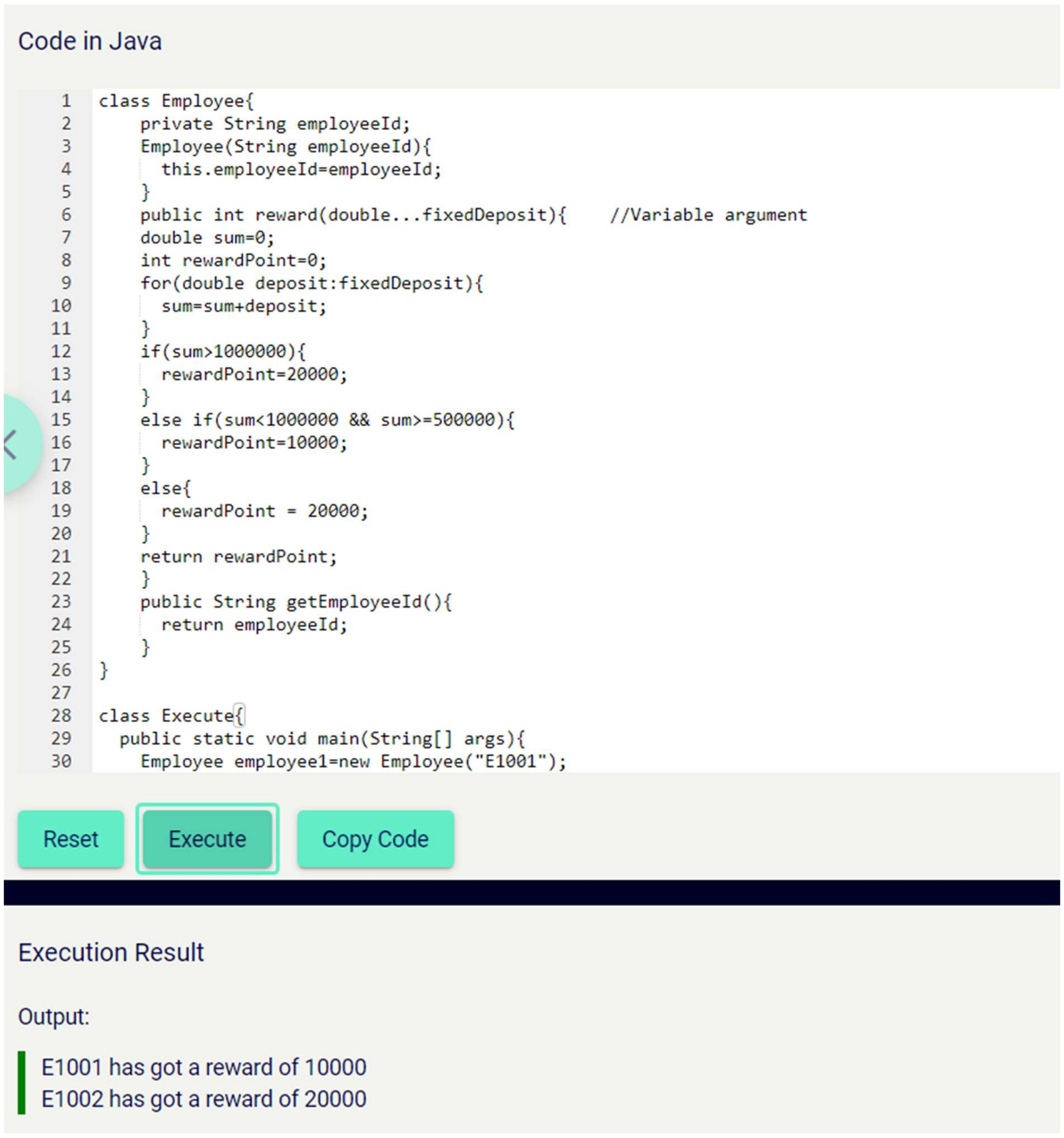


Code in Java

```java
class Account{
    static int minbalance;  //class variable

    static{
        minbalance = 500;   // static block
    }

    public static int getMinimumBalance(){
        return minbalance;  //can't use instance variable in static method
                            //and block
    }

    public static void main (String[] args) {
        System.out.println("The value.." + getMinimumBalance());
    }
}
```

Execution Result

```
Runtime Exception
Error: Could not find or load main class variable
```

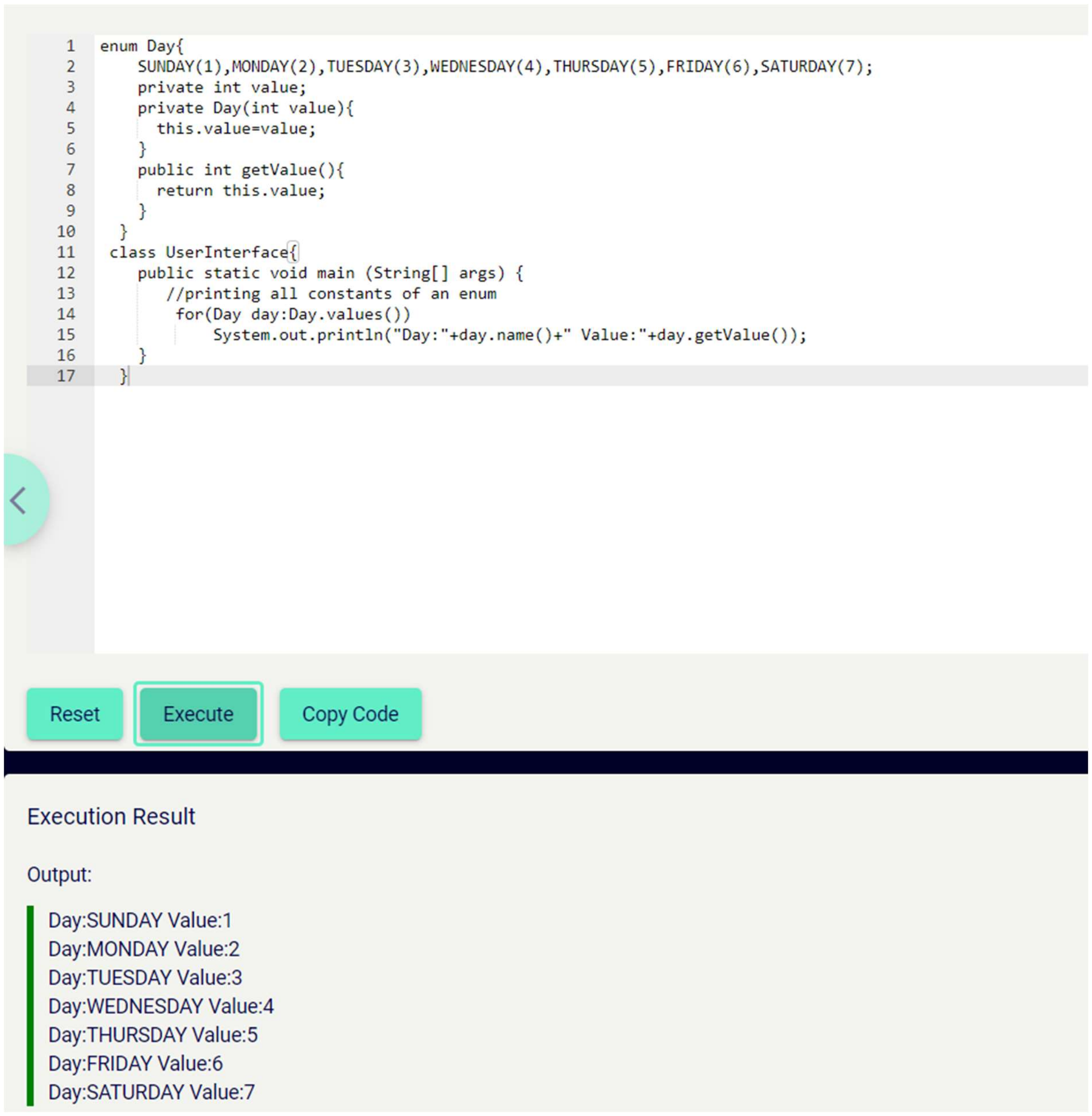

Code in Java

```java
class Employee{
    private String employeeId;
    Employee(String employeeId){
      this.employeeId=employeeId;
    }
    public int reward(double...fixedDeposit){    //Variable argument
    double sum=0;
    int rewardPoint=0;
    for(double deposit:fixedDeposit){
      sum=sum+deposit;
    }
    if(sum>1000000){
      rewardPoint=20000;
    }
    else if(sum<1000000 && sum>=500000){
      rewardPoint=10000;
    }
    else{
      rewardPoint = 20000;
    }
    return rewardPoint;
    }
    public String getEmployeeId(){
      return employeeId;
    }
}

class Execute{
  public static void main(String[] args){
    Employee employee1=new Employee("E1001");
```

Execution Result

Output:

```
E1001 has got a reward of 10000
E1002 has got a reward of 20000
```

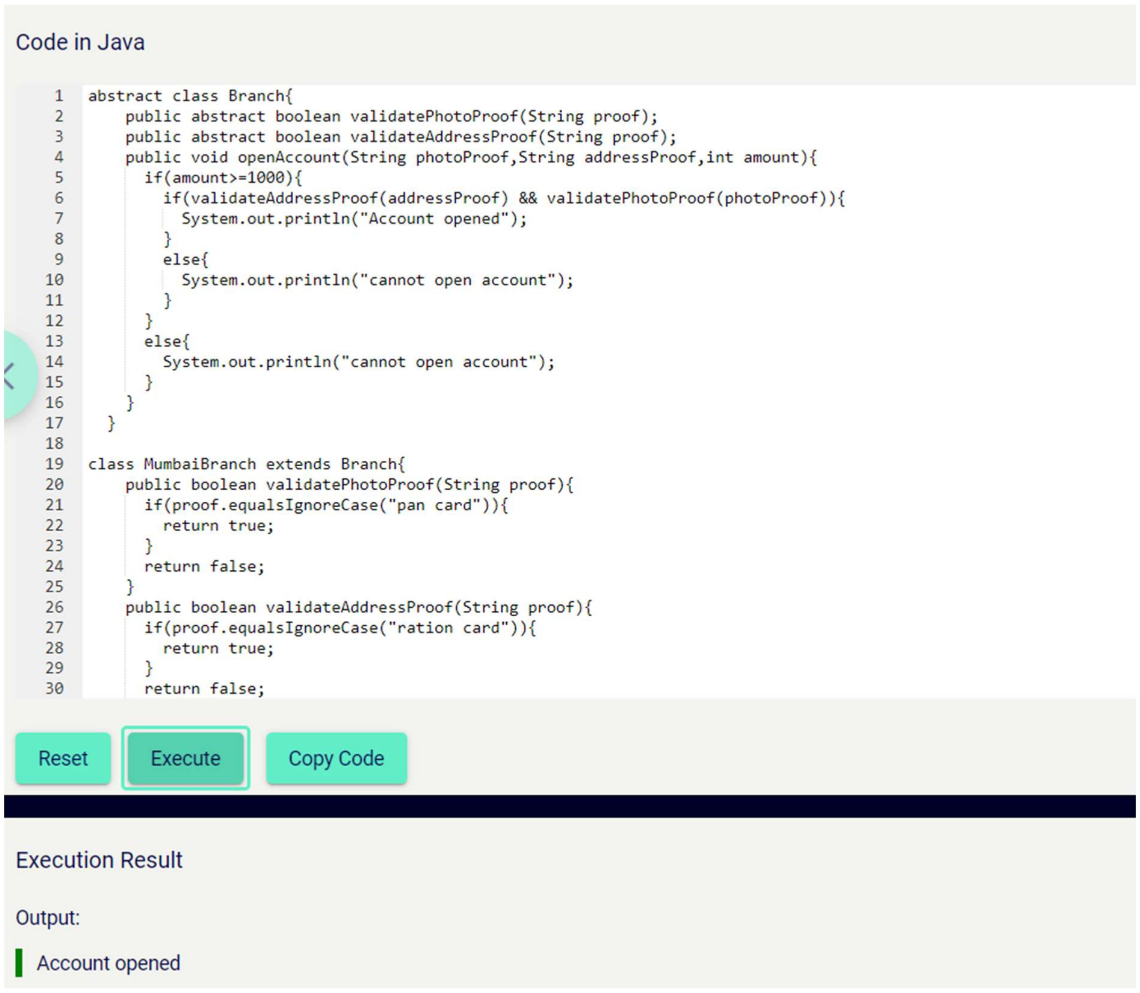


```java
enum Day{
    SUNDAY(1),MONDAY(2),TUESDAY(3),WEDNESDAY(4),THURSDAY(5),FRIDAY(6),SATURDAY(7);
    private int value;
    private Day(int value){
      this.value=value;
    }
    public int getValue(){
      return this.value;
    }
  }
 class UserInterface{
    public static void main (String[] args) {
       //printing all constants of an enum
        for(Day day:Day.values())
            System.out.println("Day:"+day.name()+" Value:"+day.getValue());
    }
  }
```

Execution Result

Output:

```
Day:SUNDAY Value:1
Day:MONDAY Value:2
Day:TUESDAY Value:3
Day:WEDNESDAY Value:4
Day:THURSDAY Value:5
Day:FRIDAY Value:6
Day:SATURDAY Value:7
```



Code in Java

```
abstract class Branch{
    public abstract boolean validatePhotoProof(String proof);
    public abstract boolean validateAddressProof(String proof);
    public void openAccount(String photoProof,String addressProof,int amount){
      if(amount>=1000){
        if(validateAddressProof(addressProof) && validatePhotoProof(photoProof)){
          System.out.println("Account opened");
        }
        else{
          System.out.println("cannot open account");
        }
      }
      else{
        System.out.println("cannot open account");
      }
    }
  }

class MumbaiBranch extends Branch{
    public boolean validatePhotoProof(String proof){
      if(proof.equalsIgnoreCase("pan card")){
        return true;
      }
      return false;
    }
    public boolean validateAddressProof(String proof){
      if(proof.equalsIgnoreCase("ration card")){
        return true;
      }
      return false;
```

Execution Result

Output:

```
Account opened
```