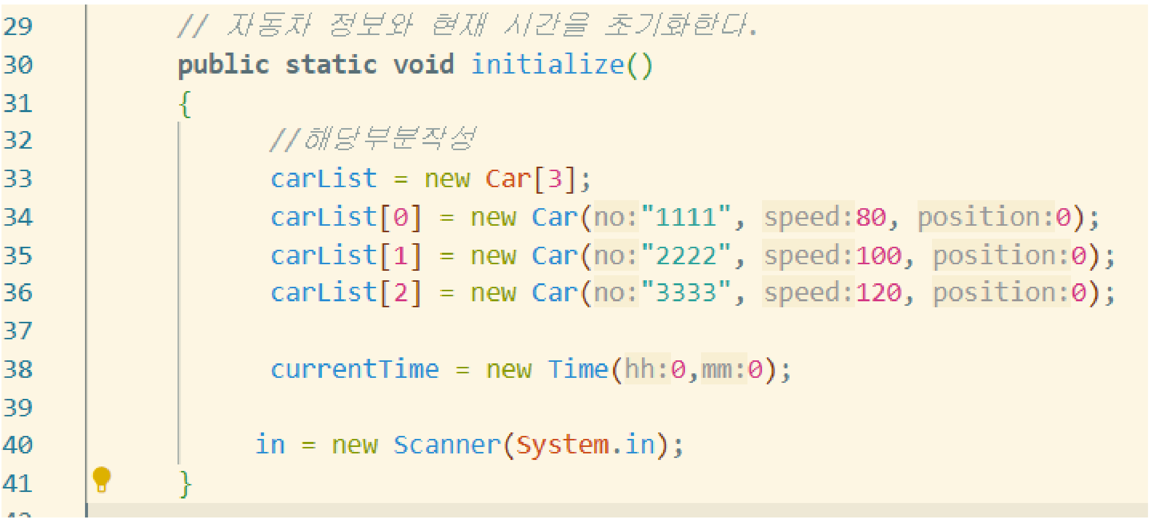
5주차 실습 보고서

강의명	객체지향프로그래밍및실습
담당교수	류기열
학과 학년	소프트웨어학과 2학년
학번	202220209
작성자	이욱준

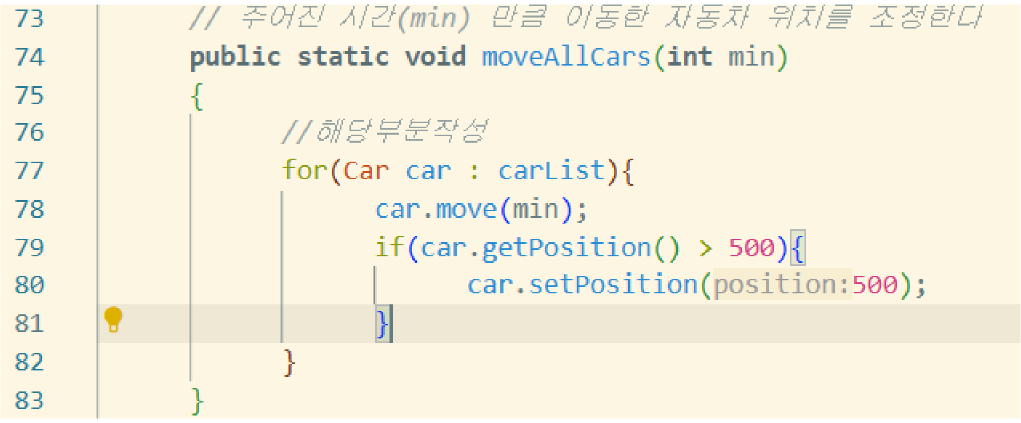
2025.10. 2.

□ 1



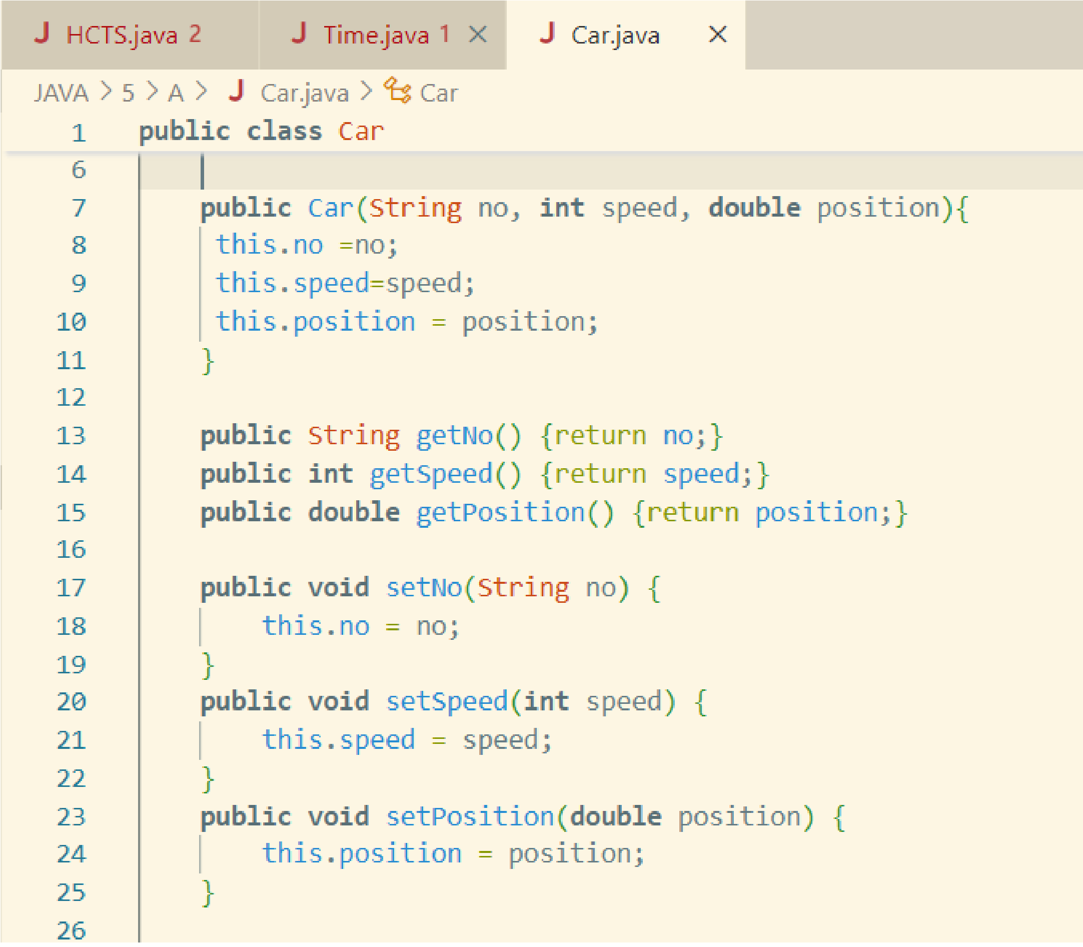
```
    // 자동차 정보와 현재 시간을 초기화한다.
    public static void initialize()
    {
        //해당부분작성
        carList = new Car[3];
        carList[0] = new Car(no:"1111", speed:80, position:0);
        carList[1] = new Car(no:"2222", speed:100, position:0);
        carList[2] = new Car(no:"3333", speed:120, position:0);

        currentTime = new Time(hh:0,mm:0);

       in = new Scanner(System.in);
    }
```

□ 2



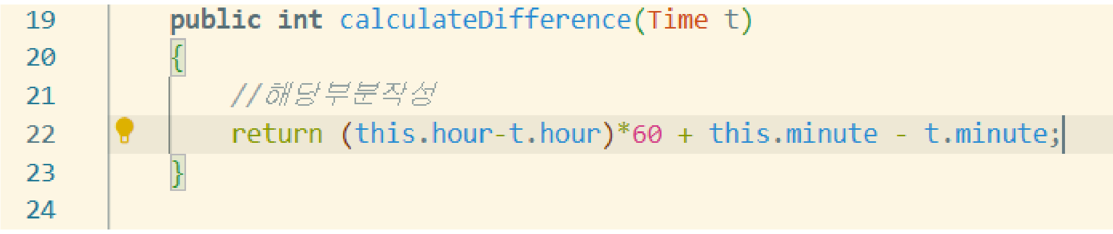
```
    // 주어진 시간(min) 만큼 이동한 자동차 위치를 조정한다
    public static void moveAllCars(int min)
    {
        //해당부분작성
        for(Car car : carList){
            car.move(min);
            if(car.getPosition() > 500){
                car.setPosition(position:500);
            }
        }
    }
```

Car.java에 getter/setter를 생성



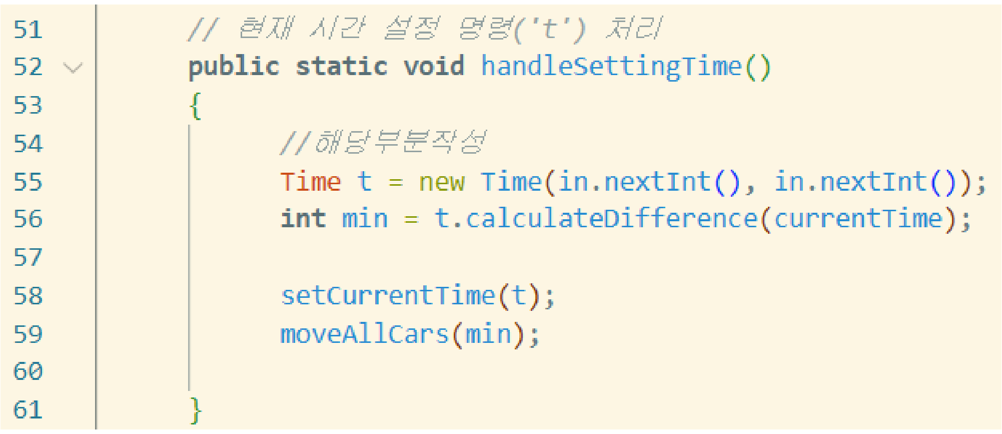
```
public class Car

    public Car(String no, int speed, double position){
     this.no =no;
     this.speed=speed;
     this.position = position;
    }

    public String getNo() {return no;}
    public int getSpeed() {return speed;}
    public double getPosition() {return position;}

    public void setNo(String no) {
        this.no = no;
    }
    public void setSpeed(int speed) {
        this.speed = speed;
    }
    public void setPosition(double position) {
        this.position = position;
    }

```

□ 3



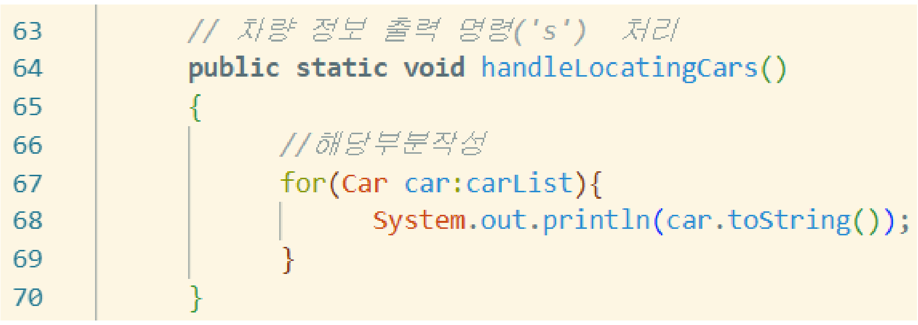
```java
    public int calculateDifference(Time t)
    {
        //해당부분작성
        return (this.hour-t.hour)*60 + this.minute - t.minute;
    }

```

□ 4



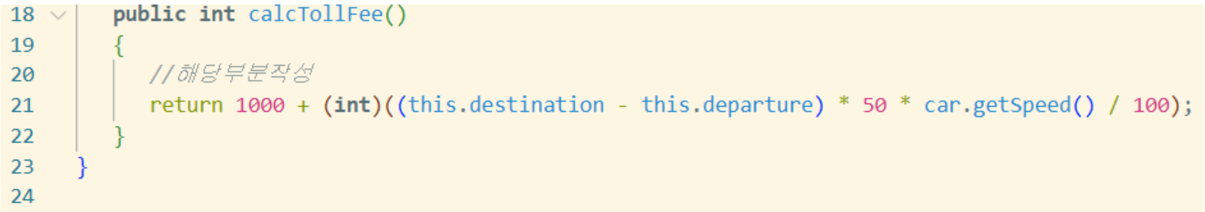
```java
    // 현재 시간 설정 명령('t') 처리
    public static void handleSettingTime()
    {
        //해당부분작성
        Time t = new Time(in.nextInt(), in.nextInt());
        int min = t.calculateDifference(currentTime);

        setCurrentTime(t);
        moveAllCars(min);

    }
```

□ 5



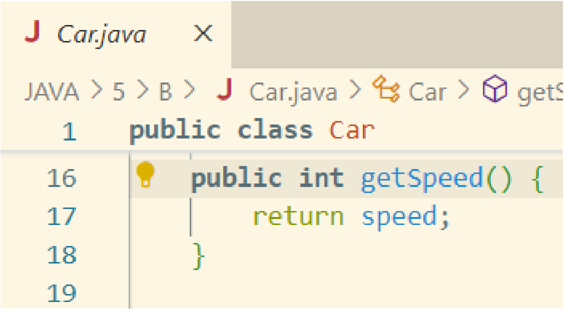
```java
    // 차량 정보 출력 명령('s')  처리
    public static void handleLocatingCars()
    {
        //해당부분작성
        for(Car car:carList){
            System.out.println(car.toString());
        }
    }
```

□ 7



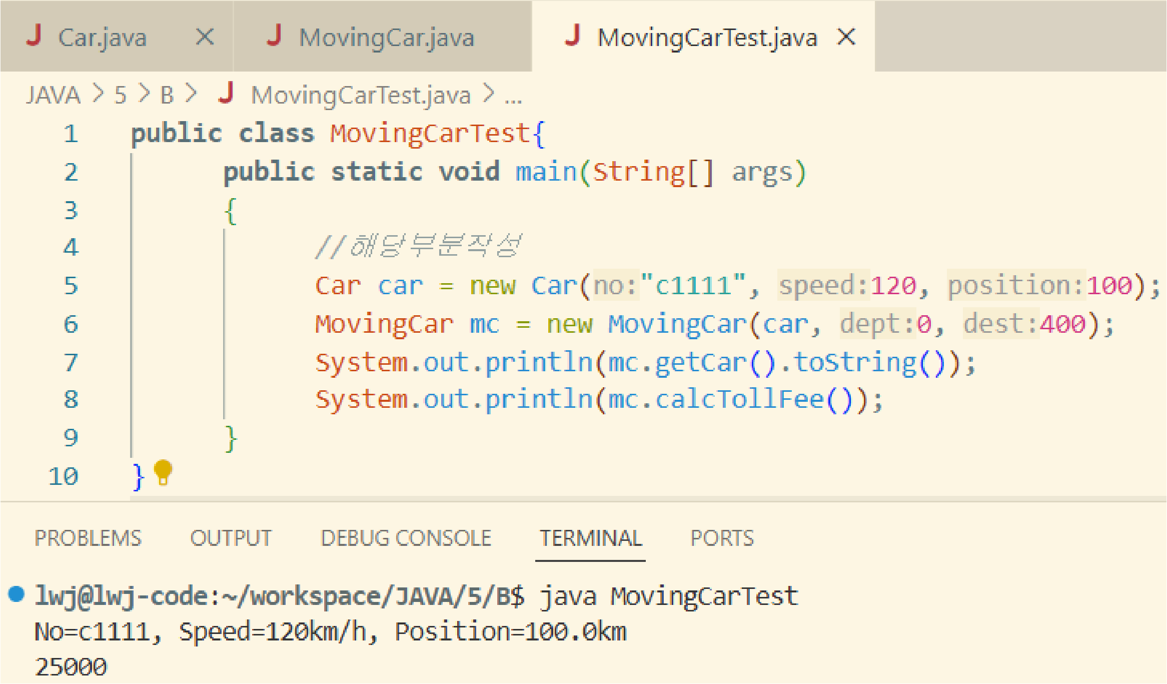
```java
    public int calcTollFee()
    {
        //해당부분작성
        return 1000 + (int)((this.destination - this.departure) * 50 * car.getSpeed() / 100);
    }
}
```

Car.java에 speed에 대한 getter 생성



```java
public class Car
    public int getSpeed() {
        return speed;
    }
```

□ 8



```java
public class MovingCarTest{
        public static void main(String[] args)
        {
                //해당부분작성
                Car car = new Car(no:"c1111", speed:120, position:100);
                MovingCar mc = new MovingCar(car, dept:0, dest:400);
                System.out.println(mc.getCar().toString());
                System.out.println(mc.calcTollFee());
        }
}
```

```
● lwj@lwj-code:~/workspace/JAVA/5/B$ java MovingCarTest
  No=c1111, Speed=120km/h, Position=100.0km
  25000
```

□ 코드 전문

Q1~Q6

Car.java

```
public class Car
{
    private String no;
    private int speed;
    private double position;

    public Car(String no, int speed, double position){
     this.no =no;
     this.speed=speed;
     this.position = position;
    }

    public String getNo() {return no;}
    public int getSpeed() {return speed;}
    public double getPosition() {return position;}

    public void setNo(String no) {
        this.no = no;
    }
    public void setSpeed(int speed) {
        this.speed = speed;
    }
    public void setPosition(double position) {
        this.position = position;
    }

    public void move(int min){

        this.position += (double) this.speed *min / 60.0;

    }

    @Override
    public String toString() {

        return "No=" + this.no + ", Speed=" + this.speed + "km/h, Position=" +
this.position +"km";

    }
    public int compareTo(Car c){


        if (this.position > c.position){

            return 1;

        }
        else if (this.position < c.position){

            return -1;

        }

        else {

            return 0;

        }

    }


}
```

Time.java

```
public class Time {
    private int hour;
    private int minute;

    public Time(int hh, int mm) {
        this.hour = hh;
        this.minute = mm;
    }

    // Getter 메소드
    public int getHour() {
        return this.hour;
    }

    public int getMinute() {
        return this.minute;
    }
    public int calculateDifference(Time t)
    {
        //해당부분작성
        return (this.hour-t.hour)*60 + this.minute - t.minute;
    }


    @Override
    public String toString() {
        return String.format("%02d:%02d", this.hour, this.minute);
    }


    public void add(int hh, int mm) {
        this.minute += mm;
        if (this.minute >= 60) {
            this.hour += this.minute / 60;
            this.minute %= 60;
        }

        this.hour += hh;
        this.hour %= 24;
    }


    public void add(Time t) {

        this.add(t.getHour(), t.getMinute());

    }
}
```

Q7~Q8

MovingCar.java

```java
public class MovingCar
{
   Car car;
   int departure;
   int destination;

   public Car getCar(){
      return this.car;
   }

   public MovingCar(Car c, int dept, int dest)
   {
      car = c;
      this.departure = dept;
      this.destination = dest;
   }

   public int calcTollFee()
   {
      //해당부분작성
      return 1000 + (int)((this.destination - this.departure) * 50 *
car.getSpeed() / 100);
   }
}
```

MovingCarTest.java

```java
public class MovingCarTest{
      public static void main(String[] args)
      {
           //해당부분작성
           Car car = new Car("c1111", 120, 100);
           MovingCar mc = new MovingCar(car, 0, 400);
           System.out.println(mc.getCar().toString());
           System.out.println(mc.calcTollFee());
      }
}
```