

Philip Pesic

Week 9

March 19 2023

Week 9 Prog 6

Program 6 – Create and run the Program with the three classes: Part, Whole and Main  
found in the lecture notes above

```
class prog6 {  
  
    public static void main(String[] args) {  
  
        System.out.println("hello");  
        WholeClass Whole1 = new WholeClass();  
  
        System.out.println("Whole 1 - default constructor - whole X = " + Whole1.getX()  
);  
        System.out.println("Whole 1 - default constructor - Part 1 d = " +  
Whole1.getPart1D() );  
        System.out.println("Whole 1 - default constructor - Part 2 d = " +  
Whole1.Part2.getD());  
  
        Whole1.setX(20);  
        System.out.println( "Whole 1 - set whole X = " + Whole1.getX() );  
        Whole1.setPart1D(21);  
  
        System.out.println( "Whole 1 - set Part 1 d = " + Whole1.getPart1D() );  
        Whole1.Part2.setD(22);  
  
        System.out.println( "Whole 1 - set Part 2 d = " + Whole1.Part2.getD() );  
  
        WholeClass Whole2 = new WholeClass(91,92,93);  
  
        System.out.println("Whole 2 - Parm constructor - whole X = " + Whole2.getX() );  
        System.out.println("Whole 2 - Parm constructor - Part 1 d = " +  
Whole2.getPart1D() );  
        System.out.println("Whole 2 - Parm constructor - Part 2 d = " +  
Whole2.Part2.getD() );  
  
        Whole2.setX(51);  
        System.out.println( "Whole 2 - set whole X = " + Whole2.getX() );  
        Whole2.setPart1D( 52);  
    }  
}
```

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```
        System.out.println( "Whole 2 - set Part 1 d = " + Whole2.getPart1D() );
        Whole2.Part2.setD(53);

        System.out.println( "Whole 2 - set Part 2 d = " + Whole2.Part2.getD() );
        System.out.println("Philip Pesic 3/19/23");
    }
}

public class PartClass {
    private double d;

    public PartClass() {
        d = 0;
    }

    public PartClass(double inD) {
        d = inD;
    }

    double getD() {
        return d;
    }

    void setD(double inD) {
        d = inD;
    }
}

public class WholeClass {

    public int x;
    public PartClass Part1 = new PartClass();

    public void setPart1D(double inD) {
        Part1.setD(inD);
    }
}
```

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```
    }

    public double getPart1D() {
        return Part1.getD();
    }

    public int getX() {
        return x;
    }

    public void setX(int inX) {
        x = inX;
    }

    PartClass Part2 = new PartClass();

    public WholeClass() {
        x = 0;
    }

    public WholeClass(int inX, double inD1, double inD2) {
        x = inX; Part1.setD(inD1);
        Part2.setD(inD2);
    }
}
```

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The screenshot displays an IDE with a Java project. The Explorer panel on the left shows the file structure, including `PROGRAMS`, `prog6.java`, `PartClass.java`, and `WholeClass.java`. The main editor shows the code for `prog6.java`, which defines a `prog6` class with a `main` method. The code creates a `WholeClass` object, sets its state, and prints it. It then creates another `WholeClass` object with specific parameters, sets its state, and prints it. Finally, it prints the state of the first object after some modifications.

```

1  class prog6 {
2      public static void main(String[] args) {
3
4          System.out.println("hello");
5          WholeClass whole1 = new WholeClass();
6
7          System.out.println("Whole 1 - default constructor - whole X = " + whole1.getX());
8          System.out.println("Whole 1 - default constructor - Part 1 d = " + whole1.getPartID());
9          System.out.println("Whole 1 - default constructor - Part 2 d = " + whole1.getPart2());
10
11         whole1.setX(20);
12         System.out.println("Whole 1 - set whole X = " + whole1.getX());
13         whole1.setPartID(21);
14
15         System.out.println("Whole 1 - set Part 1 d = " + whole1.getPartID());
16         whole1.getPart2().setID(22);
17
18         System.out.println("Whole 1 - set Part 2 d = " + whole1.getPart2().getID());
19
20         WholeClass whole2 = new WholeClass(91, 92, 93);
21
22         System.out.println("Whole 2 - Param constructor - whole X = " + whole2.getX());
23         System.out.println("Whole 2 - Param constructor - Part 1 d = " + whole2.getPartID());
24         System.out.println("Whole 2 - Param constructor - Part 2 d = " + whole2.getPart2().getID());
25
26         whole2.setX(51);
27         System.out.println("Whole 2 - set whole X = " + whole2.getX());
28         whole2.setPartID(52);
29
30         System.out.println("Whole 2 - set Part 1 d = " + whole2.getPartID());
31         whole2.getPart2().setID(53);
32
33         System.out.println("Whole 2 - set Part 2 d = " + whole2.getPart2().getID());
34         System.out.println("Philip Pestic 3/19/23");
35     }
36 }
37
38

```

The Output panel at the bottom shows the execution results:

```

hello
Whole 1 - default constructor - whole X = 0
Whole 1 - default constructor - Part 1 d = 0.0
Whole 1 - default constructor - Part 2 d = 0.0
Whole 1 - set whole X = 20
Whole 1 - set Part 1 d = 21.0
Whole 1 - set Part 2 d = 22.0
Whole 2 - Param constructor - whole X = 91
Whole 2 - Param constructor - Part 1 d = 92.0
Whole 2 - Param constructor - Part 2 d = 93.0
Whole 2 - set whole X = 51
Whole 2 - set Part 1 d = 52.0
Whole 2 - set Part 2 d = 53.0
Philip Pestic 3/19/23

```

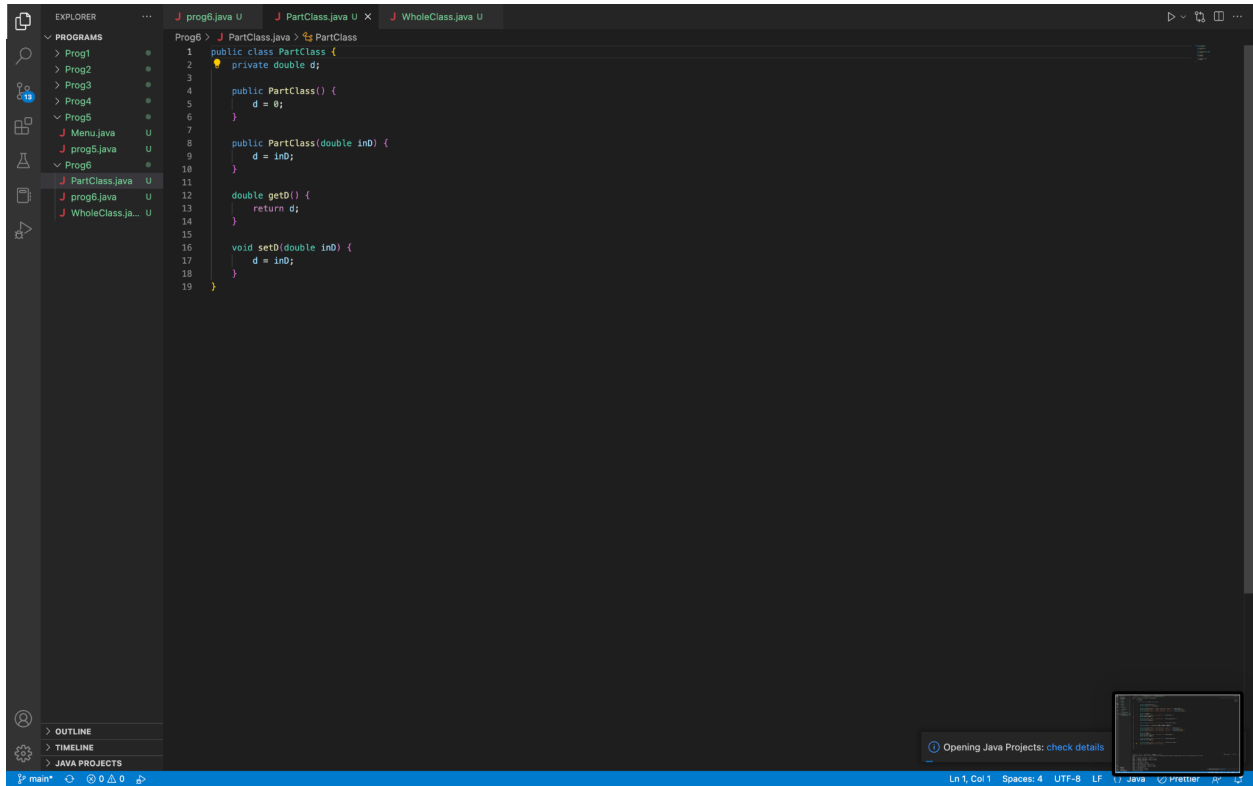
The status bar at the bottom indicates the current file is `main.java`, line 34, column 52, with 4 spaces, UTF-8 encoding, and Java language.

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The screenshot shows an IDE with a dark theme. The Explorer panel on the left lists several projects: Prog1, Prog2, Prog3, Prog4, Prog5, Menu.java, prog5.java, Prog6, PartClass.java, prog6.java, and WholeClass.java. The main editor window displays the code for PartClass.java. The code defines a public class PartClass with a private double attribute d. It includes a constructor, a getter method, and a setter method.

```
1 public class PartClass {
2     private double d;
3
4     public PartClass() {
5         d = 0;
6     }
7
8     public PartClass(double inD) {
9         d = inD;
10    }
11
12    double getD() {
13        return d;
14    }
15
16    void setD(double inD) {
17        d = inD;
18    }
19 }
```

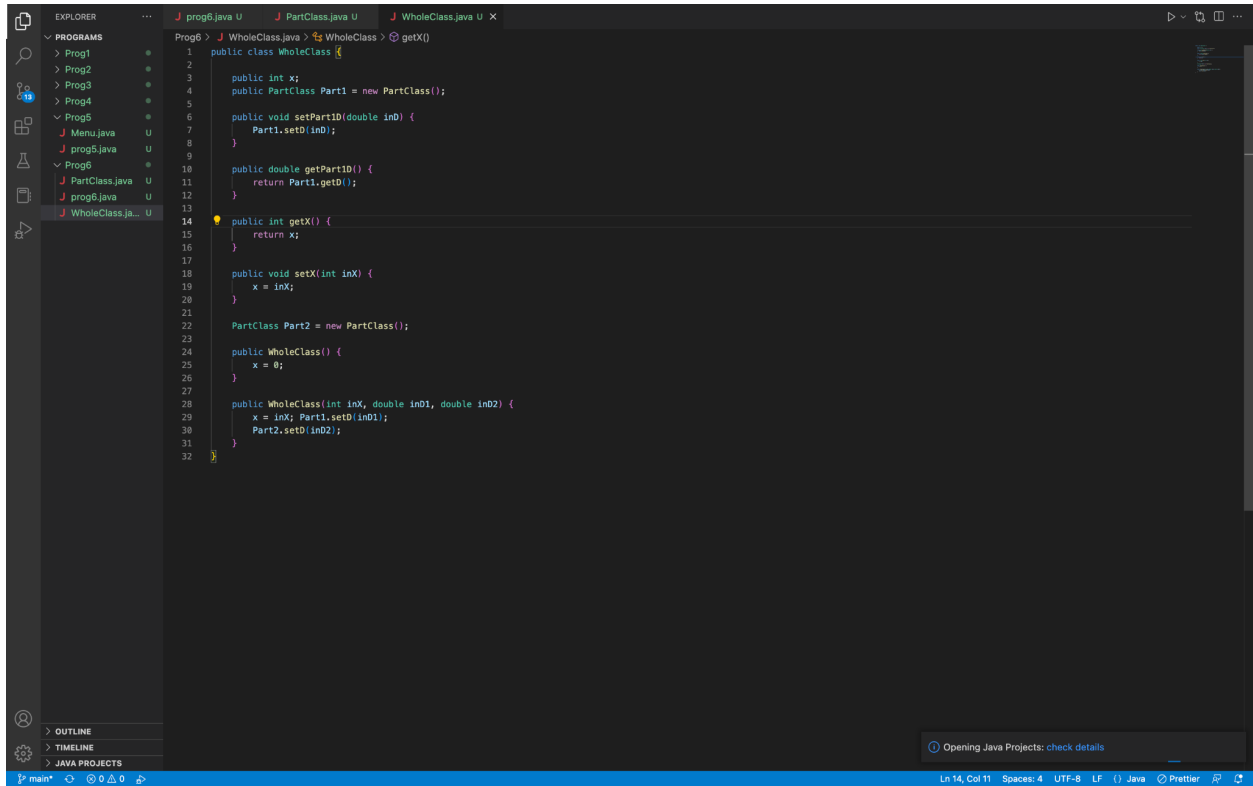
At the bottom right, there is a notification that says "Opening Java Projects: check details". The status bar at the bottom indicates "Ln 1, Col 1", "Spaces: 4", "UTF-8", "LF", and "Java".

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The screenshot shows an IDE with a dark theme. The Explorer panel on the left lists a project structure with folders 'PROGRAMS' and 'PARTS'. The 'PROGRAMS' folder contains files 'Prog1', 'Prog2', 'Prog3', 'Prog4', 'Prog5', 'Menu.java', 'prog5.java', 'Prog6', 'PartClass.java', 'prog6.java', and 'WholeClass.java'. The 'PARTS' folder contains 'PartClass.java'. The main editor displays the code for 'WholeClass.java'. The code defines a 'WholeClass' with attributes 'x' (int) and 'Part1' (PartClass). It includes methods 'setPartID', 'getPartID', 'getX', 'setX', and a constructor. It also instantiates 'PartClass' objects 'Part1' and 'Part2'.

```
1 public class WholeClass {
2
3     public int x;
4     public PartClass Part1 = new PartClass();
5
6     public void setPartID(double inD) {
7         Part1.setD(inD);
8     }
9
10    public double getPartID() {
11        return Part1.getID();
12    }
13
14    public int getX() {
15        return x;
16    }
17
18    public void setX(int inX) {
19        x = inX;
20    }
21
22    PartClass Part2 = new PartClass();
23
24    public WholeClass() {
25        x = 0;
26    }
27
28    public WholeClass(int inX, double inD1, double inD2) {
29        x = inX; Part1.setD(inD1);
30        Part2.setD(inD2);
31    }
32 }
```

I practiced using composition