

LAPORAN PRAKTIKUM 6



Oleh:

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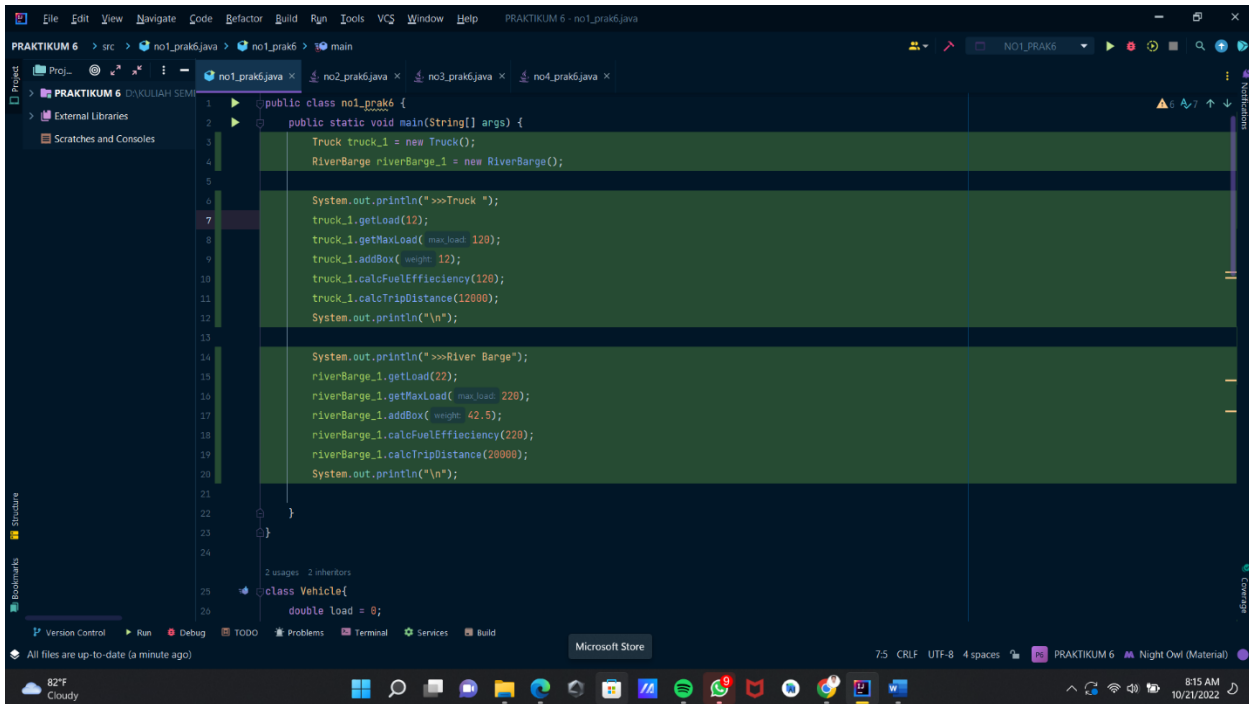
Universitas Negeri Surabaya

Fakultas Vokasi

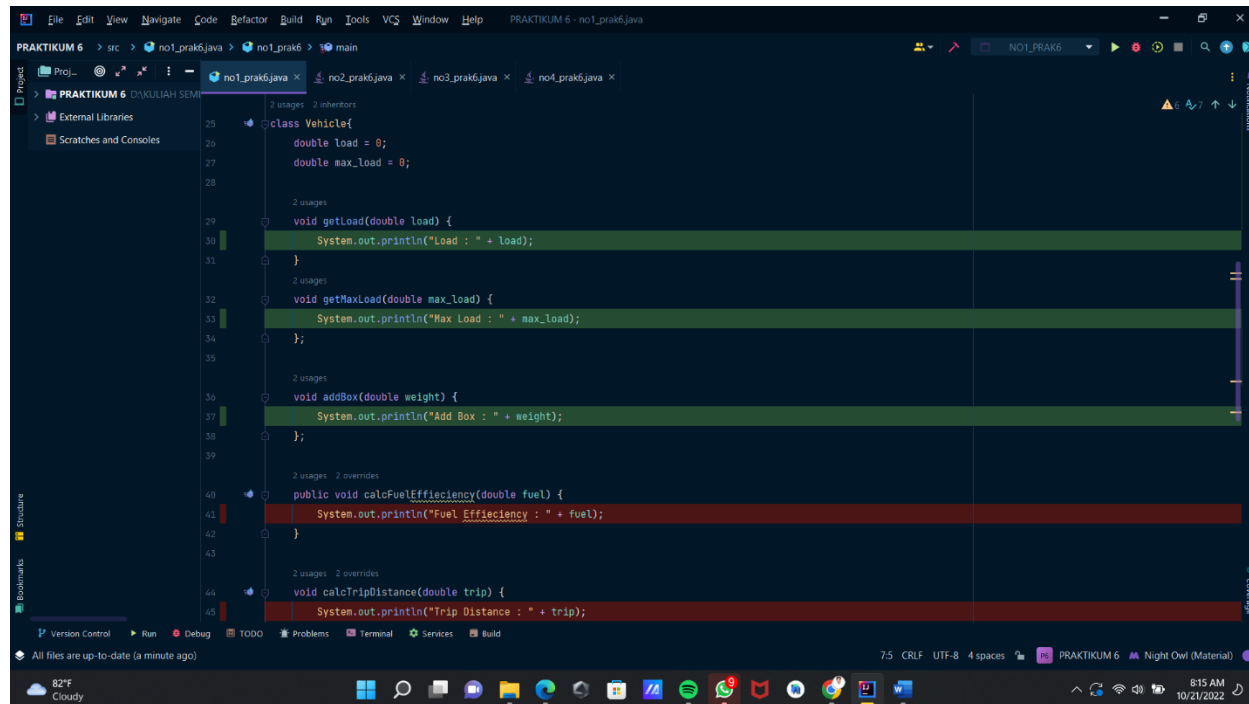
Prodi D IV Manajemen Informatika

2022/2023

>>Codingan no1



```
1 public class no1_prak6 {
2     public static void main(String[] args) {
3         Truck truck_1 = new Truck();
4         RiverBarge riverBarge_1 = new RiverBarge();
5
6         System.out.println("Truck ");
7         truck_1.getLoad(12);
8         truck_1.getMaxLoad( max_load: 120);
9         truck_1.addBox( weight: 12);
10        truck_1.calcFuelEfficiency(126);
11        truck_1.calcTripDistance(12000);
12        System.out.println("\n");
13
14        System.out.println("River Barge");
15        riverBarge_1.getLoad(22);
16        riverBarge_1.getMaxLoad( max_load: 220);
17        riverBarge_1.addBox( weight: 42.5);
18        riverBarge_1.calcFuelEfficiency(220);
19        riverBarge_1.calcTripDistance(20000);
20        System.out.println("\n");
21    }
22 }
23
24
25 class Vehicle{
26     double load = 0;
27 }
```



```
25 class Vehicle{
26     double load = 0;
27     double max_load = 0;
28
29     void getLoad(double load) {
30         System.out.println("Load : " + load);
31     }
32     void getMaxLoad(double max_load) {
33         System.out.println("Max Load : " + max_load);
34     };
35
36     void addBox(double weight) {
37         System.out.println("Add Box : " + weight);
38     };
39
40     public void calcFuelEfficiency(double fuel) {
41         System.out.println("Fuel Efficiency : " + fuel);
42     }
43
44     void calcTripDistance(double trip) {
45         System.out.println("Trip Distance : " + trip);
46     }
47 }
```

```
49 class Truck extends Vehicle {
50     public void calcFuelEfficiency(double fuel) {
51         System.out.println("Fuel Efficiency : " + fuel);
52     }
53
54     void calcTripDistance(double trip) {
55         System.out.println("Trip Distance : " + trip);
56     }
57 }
58
59 class RiverBarge extends Vehicle {
60     public void calcFuelEfficiency(double fuel) {
61         System.out.println("Fuel Efficiency : " + fuel);
62     }
63
64     void calcTripDistance(double trip) {
65         System.out.println("Trip Distance : " + trip);
66     }
67 }
```

Hasil:

```
>>>Truck
Load : 12.0
Max Load : 120.0
Add Box : 12.0
Fuel Efficiency : 120.0
Trip Distance : 12000.0

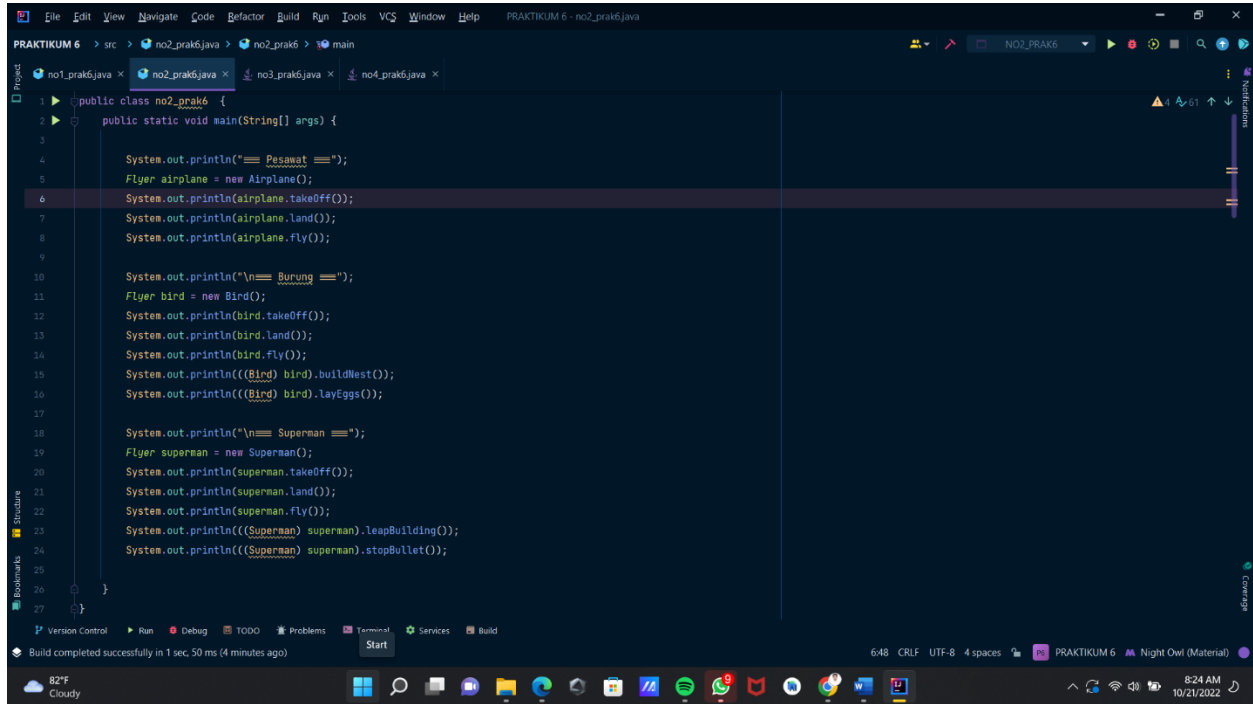
>>>River Barge
Load : 22.0
Max Load : 220.0
Add Box : 42.5
Fuel Efficiency : 220.0
Trip Distance : 20000.0

Process finished with exit code 0
```

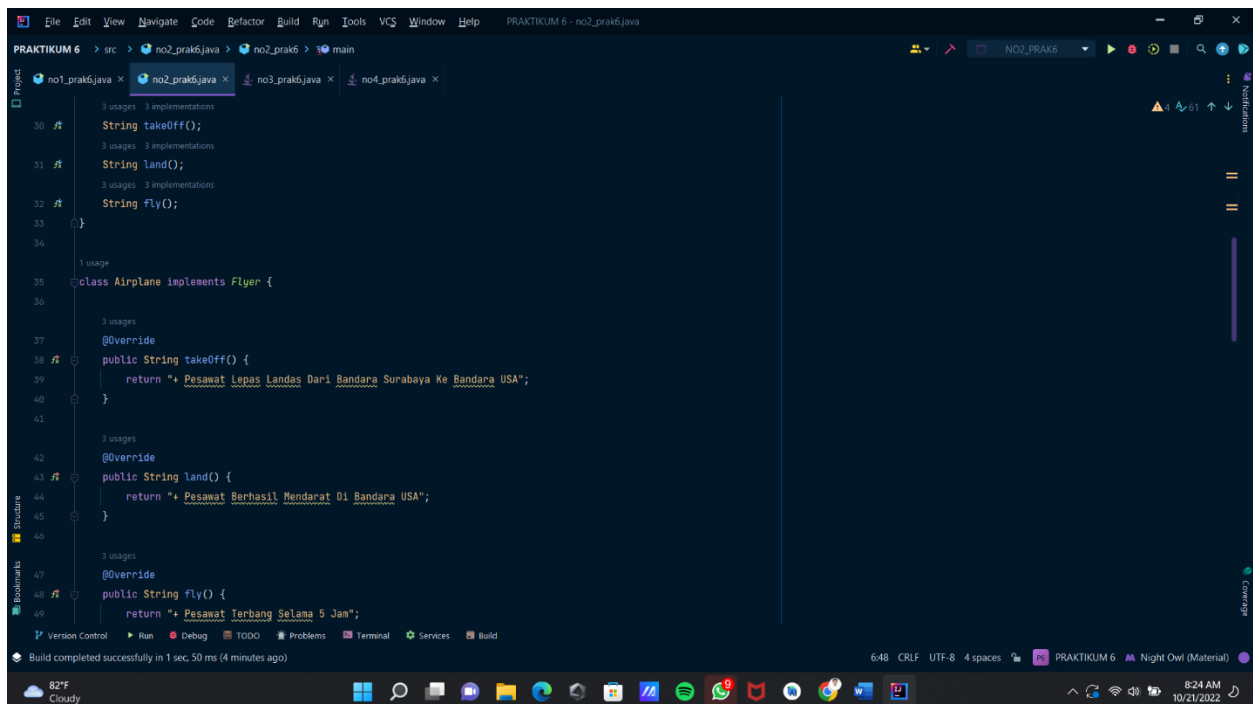
ANALISI:

Dari diatas abstract dan methode diletakkan pada class vehicle parent class sehingga bisa diakses dari pembagian 2 method

>>>codigan no2



```
1 public class no2_prak6 {
2     public static void main(String[] args) {
3
4         System.out.println("=== Pesawat ===");
5         Flyer airplane = new Airplane();
6         System.out.println(airplane.takeOff());
7         System.out.println(airplane.land());
8         System.out.println(airplane.fly());
9
10        System.out.println("\n=== Burung ===");
11        Flyer bird = new Bird();
12        System.out.println(bird.takeOff());
13        System.out.println(bird.land());
14        System.out.println(bird.fly());
15        System.out.println(((Bird) bird).buildNest());
16        System.out.println(((Bird) bird).layEggs());
17
18        System.out.println("\n=== Superman ===");
19        Flyer superman = new Superman();
20        System.out.println(superman.takeOff());
21        System.out.println(superman.land());
22        System.out.println(superman.fly());
23        System.out.println(((Superman) superman).leapBuilding());
24        System.out.println(((Superman) superman).stopBullet());
25
26    }
27 }
```



```
30 # String takeOff();
31 # String land();
32 # String fly();
33 }
34
35 class Airplane implements Flyer {
36
37     @Override
38     public String takeOff() {
39         return "+ Pesawat lepas landas Dari Bandara Surabaya Ke Bandara USA";
40     }
41
42     @Override
43     public String land() {
44         return "+ Pesawat Berhasil Mendarat Di Bandara USA";
45     }
46
47     @Override
48     public String fly() {
49         return "+ Pesawat Terbang Selama 5 Jam";
50     }
51 }
```

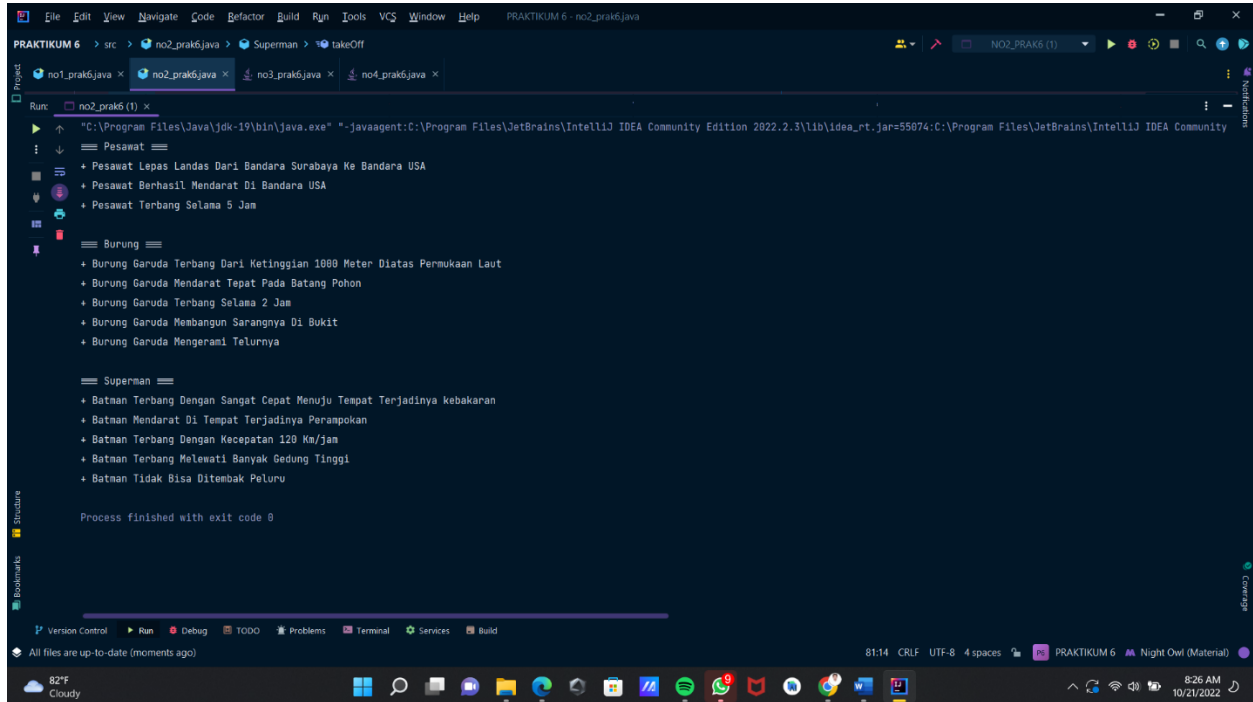
This screenshot shows an IDE window titled "PRAKTIKUM 6 - no2_prak6.java". The editor displays the implementation of the `Bird` class, which implements the `Flyer` interface. The code includes methods for `takeOff()`, `land()`, `fly()`, and `buildNest()`, each returning a specific string. The IDE interface includes a menu bar, a toolbar, a project explorer on the left, and a status bar at the bottom indicating a successful build.

```
53 class Bird implements Flyer {
54
55     @Override
56     public String takeOff() {
57         return "Burung Garuda Terbang Dari Ketinggian 1000 Meter Diatas Peneukaan Laut";
58     }
59
60     @Override
61     public String land() {
62         return "Burung Garuda Mendarat Tepat Pada Batang Pohon";
63     }
64
65     @Override
66     public String fly() {
67         return "Burung Garuda Terbang Selama 2 Jam";
68     }
69
70     public String buildNest() {
71         return "Burung Garuda Membangun Sarangnya Di Bukit";
72     }
73 }
```

This screenshot shows the same IDE window, now displaying the implementation of the `Superman` class, which also implements the `Flyer` interface. The code includes methods for `layEggs()`, `takeOff()`, `land()`, and `fly()`, each returning a specific string. The IDE interface is consistent with the previous screenshot, showing a successful build and the same project structure.

```
74 public String layEggs() {
75     return "Burung Garuda Mengalami Telurnya";
76 }
77 }
78
79 class Superman implements Flyer {
80
81     @Override
82     public String takeOff() {
83         return "Batman Terbang Dengan Sangat Cepat Menuju Tempat Terjadinya kebakaran";
84     }
85
86     @Override
87     public String land() {
88         return "Batman Mendarat Di Tempat Terjadinya Perampokan";
89     }
90
91     @Override
92     public String fly() {
93         return "Batman Terbang Dengan Kecepatan 120 Km/jam";
94     }
95 }
```

Hasil;



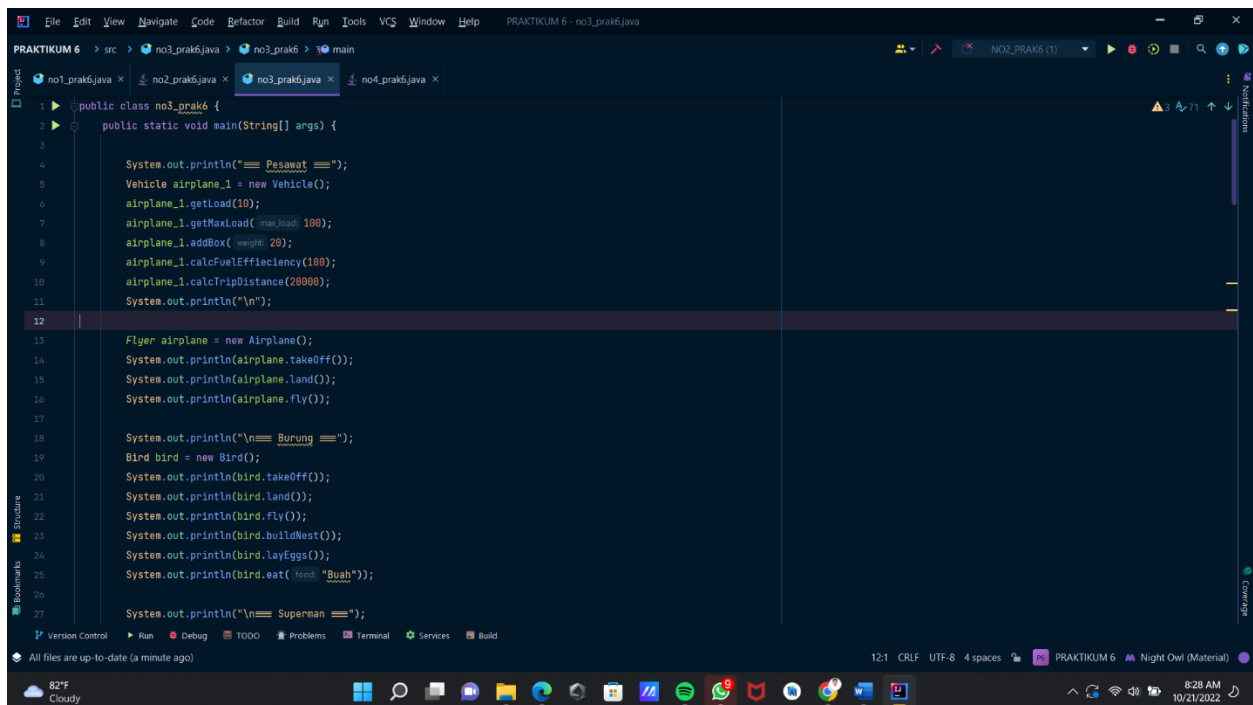
```
Run: no2_prak6 (1) x
"C:\Program Files\Java\jdk-19\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2022.2.3\lib\idea_rt.jar=55074:C:\Program Files\JetBrains\IntelliJ IDEA Community
PRAKTIKUM 6 > src > no2_prak6.java > Superman > takeOff
no1_prak6.java x no2_prak6.java x no3_prak6.java x no4_prak6.java x
no2_prak6 (1) x
+ Pesawat Lepas Landas Dari Bandara Surabaya Ke Bandara USA
+ Pesawat Berhasil Mendarat Di Bandara USA
+ Pesawat Terbang Selama 5 Jam

== Burung ==
+ Burung Garuda Terbang Dari Ketinggian 1888 Meter Diatas Permukaan Laut
+ Burung Garuda Mendarat Tepat Pada Batang Pohon
+ Burung Garuda Terbang Selama 2 Jam
+ Burung Garuda Membangun Sarangnya Di Bukit
+ Burung Garuda Mengerami Telurnya

== Superman ==
+ Batman Terbang Dengan Sangat Cepat Menuju Tempat Terjadinya kebakaran
+ Batman Mendarat Di Tempat Terjadinya Perampokan
+ Batman Terbang Dengan Kecepatan 120 Km/jam
+ Batman Terbang Melewati Banyak Gedung Tinggi
+ Batman Tidak Bisa Ditembak Peluru

Process finished with exit code 0
```

>>>codigan no.3



```
PRAKTIKUM 6 > src > no3_prak6.java > main
no1_prak6.java x no2_prak6.java x no3_prak6.java x no4_prak6.java x
no3_prak6 (1) x
public class no3_prak6 {
    public static void main(String[] args) {

        System.out.println("== Pesawat ==");
        Vehicle airplane_1 = new Vehicle();
        airplane_1.getLoad();
        airplane_1.getMaxLoad( maxLoad: 100);
        airplane_1.addBox( weight: 20);
        airplane_1.calcFuelEfficiency(100);
        airplane_1.calcTripDistance(28998);
        System.out.println("\n");

        Flyer airplane = new Airplane();
        System.out.println(airplane.takeOff());
        System.out.println(airplane.land());
        System.out.println(airplane.fly());

        System.out.println("\n== Burung ==");
        Bird bird = new Bird();
        System.out.println(bird.takeOff());
        System.out.println(bird.land());
        System.out.println(bird.fly());
        System.out.println(bird.buildNest());
        System.out.println(bird.layEggs());
        System.out.println(bird.eat( food: "Buah"));

        System.out.println("\n== Superman ==");
    }
}
```

```
File Edit View Navigate Code Refactor Build Run Tools VCS Window Help PRAKTIKUM 6 - no3_prak6.java

PRAKTIKUM 6 > src > no3_prak6.java > no3_prak6 > main
no1_prak6.java x no2_prak6.java x no3_prak6.java x no4_prak6.java x

25 System.out.println(bird.eat( food: "Buah"));
26
27 System.out.println("\n== Superman ==");
28 Superman superman = new Superman();
29 System.out.println(superman.takeOff());
30 System.out.println(superman.land());
31 System.out.println(superman.fly());
32 System.out.println(superman.leapBuilding());
33 System.out.println(superman.stopBullet());
34 System.out.println(superman.tampil( name: "Alvin", age: 20));
35 }
36 }
37
4 usages 3 implementations
38 # interface Flyer{
39 # String takeOff();
40 # String land();
41 # String fly();
42 }
43
1 usage 1 inheritor
44 # class Animal {
45 String eat(String food) {
46
Version Control Run Debug TODO Problems Terminal Services Build
All files are up-to-date (2 minutes ago)
12:1 CRLF UTF-8 4 spaces PRAKTIKUM 6 Night Owl (Material)
82°F Cloudy 8:28 AM 10/21/2022
```

```
File Edit View Navigate Code Refactor Build Run Tools VCS Window Help PRAKTIKUM 6 - no3_prak6.java

PRAKTIKUM 6 > src > no3_prak6.java > no3_prak6 > main
no1_prak6.java x no2_prak6.java x no3_prak6.java x no4_prak6.java x

49
1 usage 1 inheritor
50 # class Human {
51 String tampil(String name, int age) {
52 return "Nama : " + name + "\nUmur : " + age;
53 }
54 }
55
1 usage
56 # class Airplane extends Vehicle implements Flyer {
57
3 usages
58 @Override
59 # public String takeOff() {
60 return "Pesawat lepas landas dari Bandara Surabaya ke Bandara Singapore";
61 }
62
3 usages
63 @Override
64 # public String land() {
65 return "Pesawat Berhasil Mendarat Di Bandara Singapore";
66 }
67
3 usages
68 @Override
69 # public String fly() {

Version Control Run Debug TODO Problems Terminal Services Build
All files are up-to-date (3 minutes ago)
12:1 CRLF UTF-8 4 spaces PRAKTIKUM 6 Night Owl (Material)
82°F Cloudy 8:29 AM 10/21/2022
```

```
File Edit View Navigate Code Refactor Build Run Tools VCS Window Help PRAKTIKUM 6 - no3_prak6.java

PRAKTIKUM 6 > src > no3_prak6.java > no3_prak6 > main
no1_prak6.java x no2_prak6.java x no3_prak6.java x no4_prak6.java x

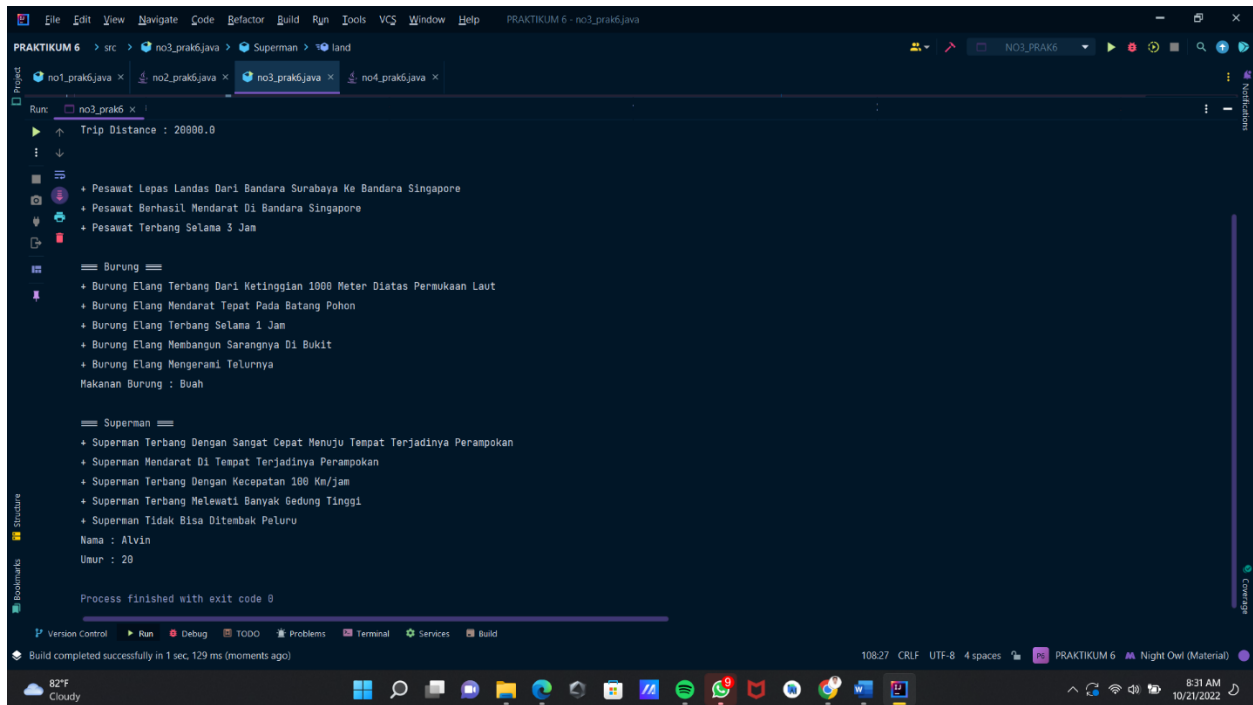
73 2 usages
74 class Bird extends Animal implements Flyer{
75
76 3 usages
77 @Override
78 public String takeOff() {
79     return "Burung Elang Terbang Dari Ketinggian 1000 Meter Diatas Permukaan Laut";
80 }
81
82 3 usages
83 @Override
84 public String land() {
85     return "Burung Elang Mendarat Tepat Pada Batang Pohon";
86 }
87
88 3 usages
89 @Override
90 public String fly() {
91     return "Burung Elang Terbang Selama 1 Jam";
92 }
93
94 1 usage
95 public String buildNest() {
96     return "Burung Elang Membangun Sarangnya Di Bukit";
97 }
98
99
100 Version Control Run Debug TODO Problems Terminal Services Build
All files are up-to-date (3 minutes ago)
12:1 CRLF UTF-8 4 spaces PRAKTIKUM 6 Night Owl (Material)
82°F Cloudy 8:29 AM 10/21/2022
```

```
File Edit View Navigate Code Refactor Build Run Tools VCS Window Help PRAKTIKUM 6 - no3_prak6.java

PRAKTIKUM 6 > src > no3_prak6.java > no3_prak6 > main
no1_prak6.java x no2_prak6.java x no3_prak6.java x no4_prak6.java x

95 1 usage
96 public String layEggs() {
97     return "Burung Elang Mengerami Telurnya";
98 }
99
100 2 usages
101 class Superman extends Human implements Flyer {
102
103 3 usages
104 @Override
105 public String takeOff() {
106     return "Superman Terbang Dengan Sangat Cepat Menuju Tempat Terjadinya Perampokan";
107 }
108
109 3 usages
110 @Override
111 public String land() {
112     return "Superman Mendarat Di Tempat Terjadinya Perampokan";
113 }
114
115 3 usages
116 @Override
117 public String fly() {
118     return "Superman Terbang Dengan Kecepatan 100 Km/jam";
119 }
120
121
122 Version Control Run Debug TODO Problems Terminal Services Build
All files are up-to-date (4 minutes ago)
12:1 CRLF UTF-8 4 spaces PRAKTIKUM 6 Night Owl (Material)
82°F Cloudy 8:30 AM 10/21/2022
```


Hasil:



```
PRAKTIKUM 6 > src > no3_prak6.java > Superman > land
Run: no3_prak6
Trip Distance : 28000.0

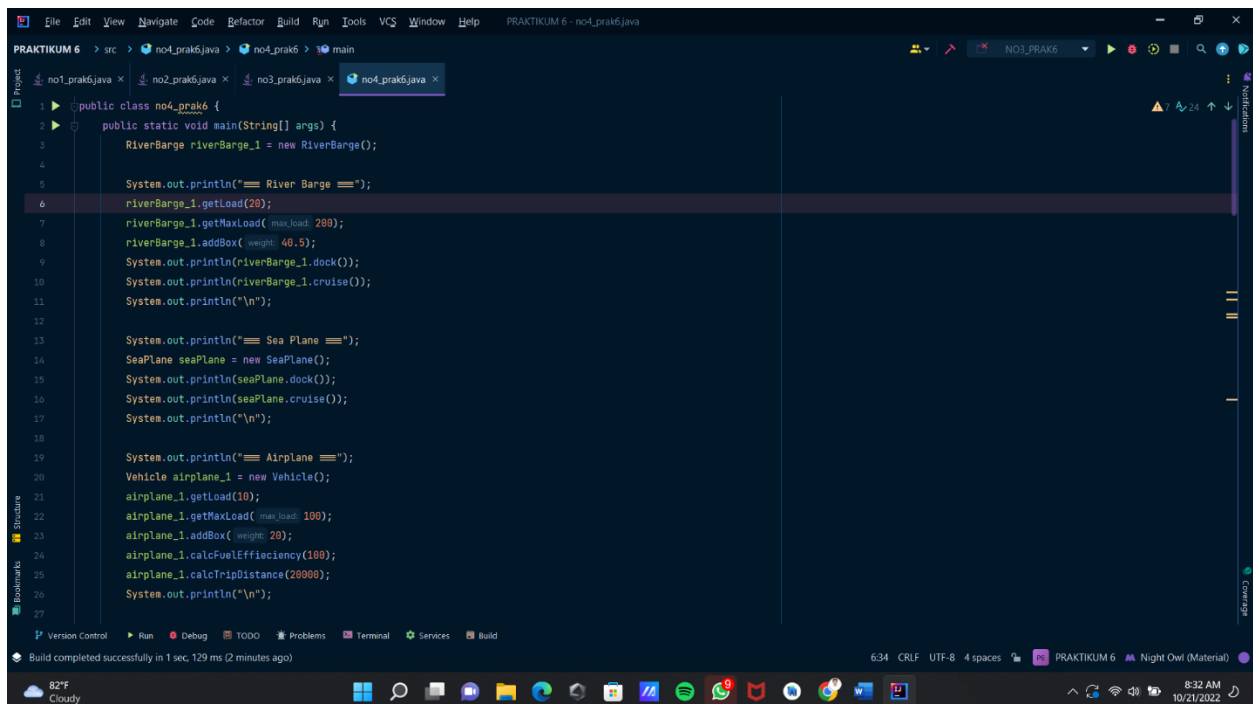
+ Pesawat Lepas Landas Dari Bandara Surabaya Ke Bandara Singapore
+ Pesawat Berhasil Mendarat Di Bandara Singapore
+ Pesawat Terbang Selama 3 Jam

== Burung ==
+ Burung Elang Terbang Dari Ketinggian 1000 Meter Diatas Permukaan Laut
+ Burung Elang Mendarat Tepat Pada Batang Pohon
+ Burung Elang Terbang Selama 1 Jam
+ Burung Elang Membangun Sarangnya Di Bukit
+ Burung Elang Mengerami Telurnya
Makanan Burung : Buah

== Superman ==
+ Superman Terbang Dengan Sangat Cepat Menuju Tempat Terjadinya Perampokan
+ Superman Mendarat Di Tempat Terjadinya Perampokan
+ Superman Terbang Dengan Kecepatan 100 Km/jam
+ Superman Terbang Melewati Banyak Gedung Tinggi
+ Superman Tidak Bisa Ditembak Peluru
Nama : Alvin
Umur : 20

Process finished with exit code 0
```

>>>codigan no4



```
PRAKTIKUM 6 > src > no4_prak6.java > no4_prak6 > main
no4_prak6.java
1 public class no4_prak6 {
2     public static void main(String[] args) {
3         RiverBarge riverBarge_1 = new RiverBarge();
4
5         System.out.println("== River Barge ==");
6         riverBarge_1.getLoad(20);
7         riverBarge_1.getMaxLoad( maxLoad: 200);
8         riverBarge_1.addBox( weight: 40.5);
9         System.out.println(riverBarge_1.dock());
10        System.out.println(riverBarge_1.cruise());
11        System.out.println("\n");
12
13        System.out.println("== Sea Plane ==");
14        SeaPlane seaPlane = new SeaPlane();
15        System.out.println(seaPlane.dock());
16        System.out.println(seaPlane.cruise());
17        System.out.println("\n");
18
19        System.out.println("== Airplane ==");
20        Vehicle airplane_1 = new Vehicle();
21        airplane_1.getLoad(10);
22        airplane_1.getMaxLoad( maxLoad: 100);
23        airplane_1.addBox( weight: 20);
24        airplane_1.calcFuelEfficiency(100);
25        airplane_1.calcTripDistance(28000);
26        System.out.println("\n");
27    }
28 }
```

```
File Edit View Navigate Code Refactor Build Run Tools VCS Window Help PRAKTIKUM 6 - no4_prak6.java

PRAKTIKUM 6 > src > no4_prak6.java > no4_prak6 > main NO3_PRAK6

no1_prak6.java x no2_prak6.java x no3_prak6.java x no4_prak6.java x

28     Flyer airplane = new Airplane();
29     System.out.println(airplane.takeOff());
30     System.out.println(airplane.land());
31     System.out.println(airplane.fly());
32 }
33
34
35 2 usages 2 implementations
36 # interface Flyer{
37     1 usage 1 implementation
38     String takeOff();
39     1 usage 1 implementation
40     String land();
41     1 usage 1 implementation
42     String fly();
43 }
44
45 2 usages 2 implementations
46 # interface Sailor {
47     2 usages 2 implementations
48     String dock();
49     2 usages 2 implementations
50     String cruise();
51 }
52
53 4 usages 3 inheritors
54 # class Vehicle{
55     double load = 0;
56
57 Version Control Run Debug TODO Problems Terminal Services Build
Build completed successfully in 1 sec, 129 ms (2 minutes ago)

6:34 CRLF UTF-8 4 spaces PRAKTIKUM 6 Night Owl (Material)
82°F Cloudy 8:32 AM 10/21/2022
```

```
File Edit View Navigate Code Refactor Build Run Tools VCS Window Help PRAKTIKUM 6 - no4_prak6.java

PRAKTIKUM 6 > src > no4_prak6.java > no4_prak6 > main NO3_PRAK6

no1_prak6.java x no2_prak6.java x no3_prak6.java x no4_prak6.java x

45 # class Vehicle{
46     double load = 0;
47     double max_load = 0;
48
49     2 usages
50     void getLoad(double load) {
51         System.out.println("Load : " + load);
52     }
53
54     2 usages
55     void getMaxLoad(double max_load) {
56         System.out.println("Max Load : " + max_load);
57     };
58
59     2 usages
60     void addBox(double weight) {
61         System.out.println("Add Box : " + weight);
62     };
63
64     1 usage
65     public void calcFuelEfficiency(double fuel) {
66         System.out.println("Fuel Efficiency : " + fuel);
67     }
68
69     1 usage
70     void calcTripDistance(double trip) {
71         System.out.println("Trip Distance : " + trip);
72     }
73
74 Version Control Run Debug TODO Problems Terminal Services Build
Build completed successfully in 1 sec, 129 ms (3 minutes ago)

6:34 CRLF UTF-8 4 spaces PRAKTIKUM 6 Night Owl (Material)
82°F Cloudy 8:33 AM 10/21/2022
```

```
File Edit View Navigate Code Refactor Build Run Tools VCS Window Help PRAKTIKUM 6 - no4_prak6.java

PRAKTIKUM 6 > src > no4_prak6.java > no4_prak6 > main NO3_PRAK6

no1_prak6.java x no2_prak6.java x no3_prak6.java x no4_prak6.java x

69 class Airplane extends Vehicle implements Flyer {
70
71     1 usage
72     @Override
73     public String takeOff() {
74         return "Pesawat lepas landas dari Bandara Surabaya ke Bandara Singapore";
75     }
76
77     1 usage
78     @Override
79     public String land() {
80         return "Pesawat berhasil mendarat di Bandara Singapore";
81     }
82
83     1 usage
84     @Override
85     public String fly() {
86         return "Pesawat terbang selama 3 jam";
87     }
88 }
89
90 2 usages
91 class Seaplane extends Airplane implements Sailer {
92
93     2 usages
94     @Override
95     public String dock() {
96         return "Jumlah pelayaran seaplane, 2";
97     }
98 }
99
100 2 usages
101 class RiverBarge extends Vehicle implements Sailer {
102
103     2 usages
104     @Override
105     public String dock() {
106         return "Jumlah Dermaga River Barge, 6";
107     }
108 }
109
110 2 usages
111 @Override
112 public String cruise() {
113     return "Jumlah pelayaran River Barge, 3";
114 }
115 }
```

Build completed successfully in 1 sec, 129 ms (3 minutes ago)

6:34 CRLF UTF-8 4 spaces PRAKTIKUM 6 Night Owl (Material)

82°F Cloudy 8:33 AM 10/21/2022

```
File Edit View Navigate Code Refactor Build Run Tools VCS Window Help PRAKTIKUM 6 - no4_prak6.java

PRAKTIKUM 6 > src > no4_prak6.java > no4_prak6 > main NO3_PRAK6

no1_prak6.java x no2_prak6.java x no3_prak6.java x no4_prak6.java x

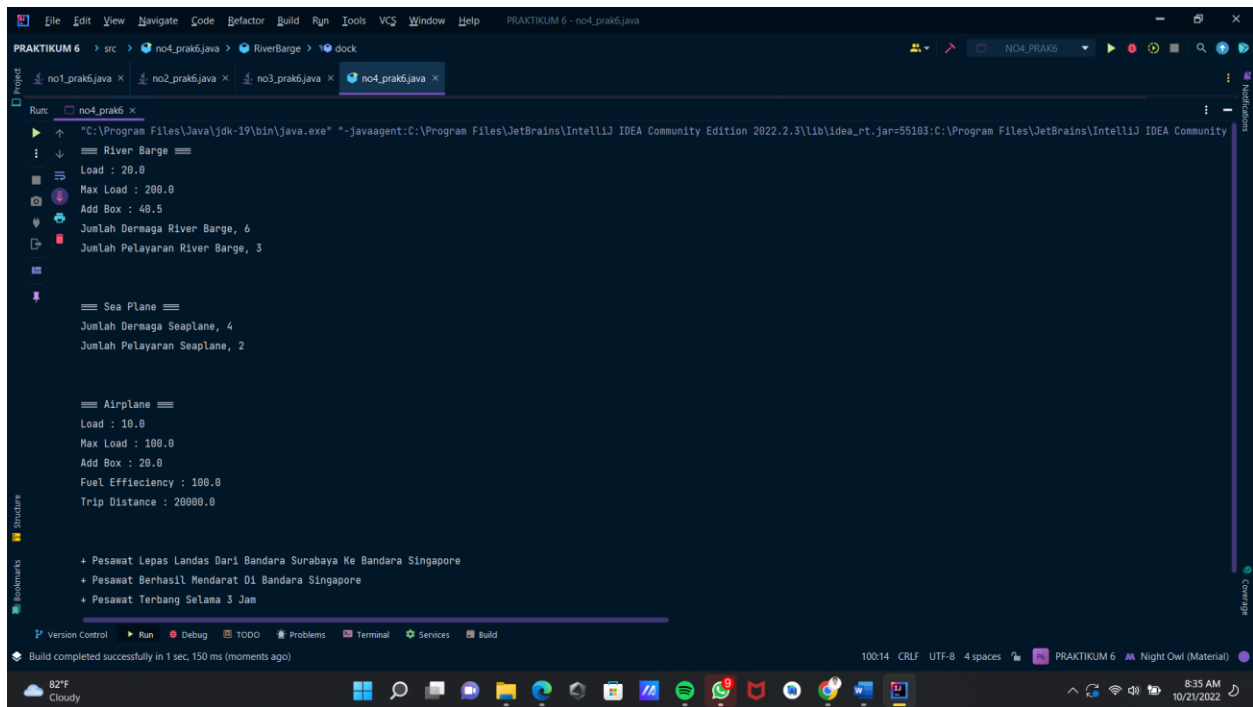
92
93
94 2 usages
95 @Override
96 public String cruise() {
97     return "Jumlah pelayaran seaplane, 2";
98 }
99
100 2 usages
101 class RiverBarge extends Vehicle implements Sailer {
102
103     2 usages
104     @Override
105     public String dock() {
106         return "Jumlah Dermaga River Barge, 6";
107     }
108 }
109
110 2 usages
111 @Override
112 public String cruise() {
113     return "Jumlah pelayaran River Barge, 3";
114 }
115 }
```

Build completed successfully in 1 sec, 129 ms (4 minutes ago)

6:34 CRLF UTF-8 4 spaces PRAKTIKUM 6 Night Owl (Material)

82°F Cloudy 8:34 AM 10/21/2022

Hasil:



```
Run: "C:\Program Files\Java\jdk-19\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2022.2.3\lib\idea_rt.jar=55185:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2022.2.3\bin" -Dfile.encoding=UTF-8
River Barge
Load : 20.0
Max Load : 200.0
Add Box : 40.5
Jumlah Dermaga River Barge, 6
Jumlah Pelayaran River Barge, 3

Sea Plane
Jumlah Dermaga Seaplane, 4
Jumlah Pelayaran Seaplane, 2

Airplane
Load : 10.0
Max Load : 100.0
Add Box : 20.0
Fuel Efficiency : 100.0
Trip Distance : 20000.0

+ Pesawat Lepas Landas Dari Bandara Surabaya Ke Bandara Singapore
+ Pesawat Berhasil Mendarat Di Bandara Singapore
+ Pesawat Terbang Selama 3 Jam
```

Build completed successfully in 1 sec, 150 ms (moments ago)