Pemrograman Berbasis Objek_Praktikum 6

1. **Program No.1**

   - **Source code no1.php:**

```php
<?php

require_once 'abstract.php';

class Truck extends Vehicle {
    public function __construct($maxLoad, $name)
    {
        $this->maxLoad = $maxLoad;
        $this->name = $name;
    }

    public function calcFuelNeeds()
    {
        $fuel = $this->calcFuelEfficiency();
        $trip = $this->calcTripDistance();

        return ceil($fuel /= $trip);
    }
}

class RiverBarge extends Vehicle {
    public function __construct($maxLoad, $name)
    {
        $this->maxLoad = $maxLoad;
        $this->name = $name;
    }

    public function calcFuelNeeds()
    {
        $fuel = $this->calcFuelEfficiency();
        $trip = $this->calcTripDistance();

        return ceil($fuel /= $trip);
    }
}
$truck = new Truck(10000, 'Truk');
$riverBarge = new RiverBarge(15000, 'Perahu');
```

   - **Source code abstract.php:**

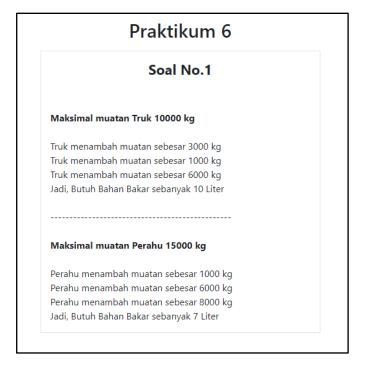```php
<?php

abstract class Vehicle {
    private $load = 0;
    protected $maxLoad = 0, $name;

    protected function __construct($maxLoad, $name) {
        $this->$maxLoad = $maxLoad;
        $this->$name = $name;
    }

    public function getLoad() {
        return $this->load;
    }

    public function getMaxLoad() {
        echo 'Maksimal muatan ' . $this->name . ' ' ;
        return $this->maxLoad;
    }

    public function addBox($weight) {
```

```php
22          if ($this->load >= $this->maxLoad) {
23              echo "$this->name menambah muatan sebesar $weight <br>";
24              echo 'Muatan telah penuh tidak bisa menambah lagi';
25          }else {
26              $this->load += $weight;
27              echo "$this->name menambah muatan sebesar $weight";
28          }
29      }
30
31      abstract public function calcFuelNeeds();
32
33      protected function calcFuelEfficiency() {
34          $range = 50000000;
35          $range /= $this->load;
36          return $range;
37      }
38
39      protected function calcTripDistance() {
40          return 500;
41      }
42  }
```

- **Source code indeks.php:**

```php
1   <?php
2       require_once 'no1.php';
3   ?>
4
5   <!DOCTYPE html>
6   <html lang="id">
7
8   <head>
9       <!-- Bootstrap CSS -->
10      <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/css/bootstrap.min.css" rel="stylesheet"
11      integrity="sha384-1BmE4kWBq78iYhFldvKuhfTAU6auU8tT94WrHftjDbrCEXSU1oBoqyl2QvZ6jIW3" crossorigin="anonymous">
12
13      <title>Praktikum 6.1</title>
14  </head>
15
16  <body>
17      <div class="container">
18          <br>
19          <h2 class="text-center">Praktikum 6</h2>
20          <div class="row">
21              <div class="col-5 mx-auto border p-3 mt-2">
22                  <h4 class="text-center"><strong>Soal No.1</strong></h4>
23                  <br><br>
24                  <b><?= $truck->getMaxLoad() . ' kg'; ?> <br></b>
25                  <br>
26                  <?= $truck->addBox(3000) . ' kg'; ?> <br>
27                  <?= $truck->addBox(1000) . ' kg'; ?> <br>
28                  <?= $truck->addBox(6000) . ' kg'; ?> <br>
29
30                      <?php
31                          echo "Jadi, Butuh Bahan Bakar sebanyak " . $truck->calcFuelNeeds() . ' Liter'. '<br>';
32                      ?>
33                  <br>
34                  ---------------------------------------------
35                  <br>
36                  <br>
37                  <b><?= $riverBarge->getMaxLoad() . ' kg'; ?> <br></b>
38                  <br>
39                  <?= $riverBarge->addBox(1000) . ' kg'; ?> <br>
40                  <?= $riverBarge->addBox(6000) . ' kg'; ?> <br>
41                  <?= $riverBarge->addBox(8000) . ' kg'; ?> <br>
42
43                      <?php
44                          echo "Jadi, Butuh Bahan Bakar sebanyak " . $riverBarge->calcFuelNeeds() . ' Liter';
45                      ?>
46              </div>
47          </div>
48      </div>
49  </body>
50
51  </html>
```

- **Output :**

Praktikum 6

Soal No.1

Maksimal muatan Truk 10000 kg

Truk menambah muatan sebesar 3000 kg
Truk menambah muatan sebesar 1000 kg
Truk menambah muatan sebesar 6000 kg
Jadi, Butuh Bahan Bakar sebanyak 10 Liter

Maksimal muatan Perahu 15000 kg

Perahu menambah muatan sebesar 1000 kg
Perahu menambah muatan sebesar 6000 kg
Perahu menambah muatan sebesar 8000 kg
Jadi, Butuh Bahan Bakar sebanyak 7 Liter

2. Program No.2
- **Source code no2.php:**

```php
<?php

require_once 'interface.php';

class Airplane implements Flyer {
    public function takeOff() {
        return 'Pesawat lepas landas..';
    }

    public function land() {
        return 'Pesawat mendarat';
    }

    public function fly() {
        return 'Pesawat dalam perjalanan';
    }
}

class Bird implements Flyer {
    public function takeOff() {
        return 'Burung mencari makan';
    }

    public function land() {
        return 'Burung kembali pulang';
    }

    public function fly() {
        return 'Burung terbang';
    }

    public function buildNest() {
```

```php
33              return 'Burung membuat sarang';
34          }
35
36      public function layEggs() {
37              return 'Burung bertelur';
38          }
39  }
40
41  class Superman implements Flyer {
42      public function takeOff() {
43              return 'Superman mengejar Batman';
44          }
45
46      public function land() {
47              return 'Superman melawan Batman';
48          }
49
50      public function fly() {
51              return 'Superman melancarkan pukulan';
52          }
53
54      public function leapBuilding() {
55              return 'Batman terpental menabrak bangunan pencakar langit';
56          }
57
58      public function stopBullet() {
59              return 'Polisi menembaki superman namun ditangkis';
60          }
61  }
62
63  $airplane = new Airplane;
64  $bird = new Bird;
65  $superman = new Superman;
```

- **Source code interface.php**

```php
1   <?php
2
3   interface Flyer {
4       public function takeOff();
5       public function land();
6       public function fly();
7   }
8
9   interface Sailer {
10      public function dock();
11      public function cruise();
12  }
```

- **Source code index.php**

```php
1   <?php
2       require_once 'no2.php';
3   ?>
4
5   <!DOCTYPE html>
6   <html lang="en">
7
8   <head>
9       <!-- Bootstrap CSS -->
10      <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/css/bootstrap.min.css" rel="stylesheet"
11      integrity="sha384-1BmE4kWBq78iYhFldvKuhfTAU6auU8tT94WrHftjDbrCEXSU1oBoqyl2QvZ6jIW3" crossorigin="anonymous">
12
13      <title>Praktikum 6.2</title>
14  </head>
15
16  <body>
17      <div class="container">
18          <br>
19          <h2 class="text-center">Praktikum 6</h2>
20          <div class="row">
21              <div class="col-5 mx-auto border p-3 mt-2">
22                  <h4 class="text-center"><strong>Soal No.2</strong></h4>
```

```
22          <h4 class="text-center"><strong>Soal No.2</strong></h4>
23          <br><br>
24          <b><?php
25              echo "Superman";
26          ?></b> <br>
27          <?= $superman->land(); ?> <br>
28          <?= $superman->takeOff(); ?> <br>
29          <?= $superman->fly(); ?> <br>
30          <?= $superman->leapBuilding(); ?> <br>
31          <?= $superman->stopBullet(); ?> <br>
32          <br>
33          <b><?php
34              echo "Bird";
35          ?></b> <br>
36          <?= $bird->buildNest(); ?> <br>
37          <?= $bird->takeOff(); ?> <br>
38          <?= $bird->fly(); ?> <br>
39          <?= $bird->land(); ?> <br>
40          <?= $bird->layEggs(); ?> <br>
41          <br>
42          <b><?php
43              echo "Airplane";
44          ?></b> <br>
45          <?= $airplane->takeOff(); ?> <br>
46          <?= $airplane->fly(); ?> <br>
47          <?= $airplane->land(); ?> <br>
48      </div>
49    </div>
50  </div>
51  </body>
52
53  </html>
```

- **Output :**

Praktikum 6

Soal No.2

Superman
Superman melawan Batman
Superman mengejar Batman
Superman melancarkan pukulan
Batman terpental menabrak bangunan pencakar langit
Polisi menembaki superman namun ditangkis

Bird
Burung membuat sarang
Burung mencari makan
Burung terbang
Burung kembali pulang
Burung bertelur

Airplane
Pesawat lepas landas..
Pesawat dalam perjalanan
Pesawat mendarat

3. Program No.3

- **Source code no3.php:**

```php
<?php

require_once 'abstract.php';
require_once 'interface.php';

class Animal
{
    protected $name;

    public function __construct($name)
    {
        $this->name = $name;
    }

    public function eat()
    {
        return $this->name . ' sedang makan';
    }
}

class Homosapiens extends Animal {}

class Airplane2 extends Vehicle implements Flyer
{
    public function __construct($maxLoad, $name)
    {
        $this->maxLoad = $maxLoad;
        $this->name = $name;
    }

    public function takeOff()
    {
        return "$this->name lepas landas";
    }

    public function land()
    {
        return "$this->name mendarat";
    }

    public function fly()
    {
        return "$this->name dalam perjalanan";
    }

    public function calcFuelNeeds()
    {
        $fuel = $this->calcFuelEfficiency();
        $trip = $this->calcTripDistance();



        return ceil($fuel /= $trip);
    }
}

class Superman2 extends Homosapiens implements Flyer
{
    public function takeOff()
    {
        return "$this->name mengejar Batman";
    }

    public function land()
    {
        return "$this->name melawan Batman";
    }
```

```php
68
69    public function fly()
70    {
71        return "$this->name melancarkan pukulan";
72    }
73
74    public function leapBuilding()
75    {
76        return "Batman terpental menabrak bangunan pencakar langit";
77    }
78
79    public function stopBullet()
80    {
81        return "Polisi menembaki $this->name namun ditangkis";
82    }
83 }
84
85 $puma = new Animal('Puma');
86 $manusia = new Homosapiens('Bob');
87 $airplane2 = new Airplane2(20000, 'Qatar Airways');
88 $superman2 = new Superman2('Superman');
```

- **Source code abstract.php:**

```php
1    <?php
2
3    abstract class Vehicle {
4        private $load = 0;
5        protected $maxLoad = 0, $name;
6
7        protected function __construct($maxLoad, $name) {
8            $this->$maxLoad = $maxLoad;
9            $this->$name = $name;
10       }
11
12       public function getLoad() {
13           return $this->load;
14       }
15
16       public function getMaxLoad() {
17           echo 'Maksimal muatan ' . $this->name . ' ' ;
18           return $this->maxLoad;
19       }
20
21       public function addBox($weight) {
22           if ($this->load >= $this->maxLoad) {
23               echo "$this->name menambah muatan sebesar $weight <br>";
24               echo 'Muatan telah penuh tidak bisa menambah lagi';
25           }else {
26               $this->load += $weight;
27               echo "$this->name menambah muatan sebesar $weight";
28           }
29       }
30
31       abstract public function calcFuelNeeds();
32
33       protected function calcFuelEfficiency() {
34           $range = 50000000;
35           $range /= $this->load;
36           return $range;
37       }
38
39       protected function calcTripDistance() {
40           return 500;
41       }
42 }
```

- **Source code interface.php:**

```php
1   <?php
2
3   interface Flyer {
4       public function takeOff();
5       public function land();
6       public function fly();
7   }
8
9   interface Sailer {
10      public function dock();
11      public function cruise();
12  }
```

- **Source code index.php:**

```php
1   <?php
2       require_once 'no3.php';
3   ?>
4
5   <!DOCTYPE html>
6   <html lang="id">
7
8   <head>
9       <!-- Bootstrap CSS -->
10      <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/css/bootstrap.min.css" rel="stylesheet"
11      integrity="sha384-1BmE4kWBq78iYhFldvKuhfTAU6auU8tT94WrHftjDbrCEXSU1oBoqyl2QvZ6jIW3" crossorigin="anonymous">
12
13      <title>Praktikum 6.3</title>
14  </head>
15  <body>
16      <div class="container">
17          <h2 class="text-center">Praktikum 6</h2>
18          <div class="row">
19              <div class="col-5 mx-auto border p-3 mt-2">
20                  <h4 class="text-center"><strong>Soal No.3</strong></h4>
21                  <br><br>
22                  <?= $puma->eat(); ?> <br>
23                  <?= $manusia->eat(); ?> <br>
24                  <br>
25
26                  <b><?= $airplane2->getMaxLoad() . ' kg'; ?> <br></b>
27                  <?= $airplane2->addBox(5000) . ' kg'; ?> <br>
28                  <?= $airplane2->addBox(7000) . ' kg'; ?> <br>
29                  <?= $airplane2->addBox(3000) . ' kg'; ?> <br>
30                  <?= $airplane2->addBox(4000) . ' kg'; ?> <br>
31                  <?= $airplane2->takeOff(); ?> <br>
32                  <?= $airplane2->fly(); ?> <br>
33                  <?= $airplane2->land(); ?> <br>
34
35                  <?php
36                      echo "Jadi, Butuh Bahan Bakar sebanyak " . $airplane2->calcFuelNeeds() . ' Liter'. '<br>';
37                  ?>
38                  <br>
39                  <?= $superman2->eat(); ?> <br>
40                  <?= $superman2->land(); ?> <br>
41                  <?= $superman2->takeOff(); ?> <br>
42                  <?= $superman2->fly(); ?> <br>
43                  <?= $superman2->leapBuilding(); ?> <br>
44                  <?= $superman2->stopBullet(); ?> <br>
45              </div>
46          </div>
47      </div>
48  </body>
49
50  </html>
51
```

- **Output :**

Praktikum 6

Soal No.3

Puma sedang makan
Bob sedang makan

Maksimal muatan Qatar Airways 20000 kg
Qatar Airways menambah muatan sebesar 5000 kg
Qatar Airways menambah muatan sebesar 7000 kg
Qatar Airways menambah muatan sebesar 3000 kg
Qatar Airways menambah muatan sebesar 4000 kg
Qatar Airways lepas landas
Qatar Airways dalam perjalanan
Qatar Airways mendarat
Jadi, Butuh Bahan Bakar sebanyak 6 Liter

Superman sedang makan
Superman melawan Batman
Superman mengejar Batman
Superman melancarkan pukulan
Batman terpental menabrak bangunan pencakar langit
Polisi menembaki Superman namun ditangkis

4. Program No.4

- **Source code no4.php:**

```php
<?php

require_once 'abstract.php';
require_once 'interface.php';

class RiverBarge2 extends Vehicle implements Sailer {
    public function __construct($maxLoad, $name) {
        $this->maxLoad = $maxLoad;
        $this->name = $name;
    }

    public function calcFuelNeeds() {
        $fuel = $this->calcFuelEfficiency();
        $trip = $this->calcTripDistance();

        return ceil($fuel /= $trip);
    }

    public function dock() {
        return $this->name . ' berada di dermaga';
    }

    public function cruise() {
        return $this->name . ' sedang berlayar';
    }
}

class Airplane2 implements Flyer {
    public function takeOff() {
        return 'Pesawat lepas landas';
    }
    public function land() {
```

```php
            return 'Pesawat mendarat';
        }
    public function fly() {
        return 'Pesawat dalam perjalanan';
    }
}

class SeaPlane extends Vehicle implements Sailer {
    public function __construct($maxLoad, $name) {
        $this->maxLoad = $maxLoad;
        $this->name = $name;
    }

    public function calcFuelNeeds() {
        $fuel = $this->calcFuelEfficiency();
        $trip = $this->calcTripDistance();

        return ceil($fuel /= $trip);
    }

    public function dock() {
        return $this->name . ' berada di dermaga';
    }

    public function cruise() {
        return $this->name . ' sedang berlayar';
    }

    public function takeOff() {
        return $this->name . ' lepas landas';
    }

    public function land() {
        return $this->name . ' mendarat';
    }

    public function fly() {
        return $this->name . ' dalam perjalanan';
    }
}

class Helicopter extends Vehicle {
    public function __construct($maxLoad, $name) {
        $this->maxLoad = $maxLoad;
        $this->name = $name;
    }

    public function calcFuelNeeds() {
        $fuel = $this->calcFuelEfficiency();
        $trip = $this->calcTripDistance();

        return ceil($fuel /= $trip);
    }
    public function takeOff() {
        return $this->name . ' lepas landas';
    }

    public function land() {
        return $this->name . ' mendarat';
    }

    public function fly() {
        return $this->name . ' dalam perjalanan';
    }
}

$riverBarge2 = new RiverBarge2(30000, 'Apollo duck');
$seaPlane = new SeaPlane(20000, 'Torpedo');
$helicopter = new Helicopter(10000, 'Air wolf');
```

- **Source code abstract.php**

```php
<?php

abstract class Vehicle {
    private $load = 0;
    protected $maxLoad = 0, $name;

    protected function __construct($maxLoad, $name) {
        $this->$maxLoad = $maxLoad;
        $this->$name = $name;
    }

    public function getLoad() {
        return $this->load;
    }

    public function getMaxLoad() {
        echo 'Maksimal muatan ' . $this->name . ' ' ;
        return $this->maxLoad;
    }

    public function addBox($weight) {
        if ($this->load >= $this->maxLoad) {
            echo "$this->name menambah muatan sebesar $weight <br>";
            echo 'Muatan telah penuh tidak bisa menambah lagi';
        }else {
            $this->load += $weight;
            echo "$this->name menambah muatan sebesar $weight";
        }
    }

    abstract public function calcFuelNeeds();

    protected function calcFuelEfficiency() {
        $range = 50000000;
        $range /= $this->load;
        return $range;
    }

    protected function calcTripDistance() {
        return 500;
    }
}
```

- **Source code interface.php**

```php
<?php

interface Flyer {
    public function takeOff();
    public function land();
    public function fly();
}

interface Sailer {
    public function dock();
    public function cruise();
}
```

- **Source code inde.php**

```php
1  <?php
2      require_once 'no4.php';
3  ?>
4
5  <!DOCTYPE html>
6  <html lang="en">
7
8  <head>
9      <!-- Bootstrap CSS -->
10     <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/css/bootstrap.min.css" rel="stylesheet"
11     integrity="sha384-1BmE4kWBq78iYhFldvKuhfTAU6auU8tT94WrHftjDbrCEXSU1oBoqyl2QvZ6jIW3" crossorigin="anonymous">
12
13     <title>Praktikum 6.4</title>
14  </head>
15  <body>
16         <h2 class="text-center">Praktikum 6</h2>
17         <div class="container">
18     <div class="row">
19     <h4 class="text-center"><strong>Soal No.4</strong></h4>
20     <br><br>
21       <div class="col-4 mx-auto border p-2 mt-2">
22               <b><?= $riverBarge2->getMaxLoad() . ' kg'; ?> <br></b>
23               <?= $riverBarge2->addBox(12000) . ' kg'; ?> <br>
24               <?= $riverBarge2->addBox(14000) . ' kg'; ?> <br>
25               <?= $riverBarge2->addBox(1000) . ' kg'; ?> <br>
26               <?= $riverBarge2->addBox(3000) . ' kg'; ?> <br>
27               <?= $riverBarge2->dock(); ?> <br>
28               <?= $riverBarge2->cruise(); ?> <br>
29               <?php
30                   echo "Jadi, Butuh Bahan Bakar sebanyak " . $riverBarge2->calcFuelNeeds() . ' Liter'. '<br>';
31               ?>
32       </div>
33       <div class="col-4 mx-auto border p-2 mt-2">
34               <b><?= $seaPlane->getMaxLoad() . ' kg'; ?> <br></b>
35               <?= $seaPlane->addBox(12000) . ' kg'; ?> <br>
36               <?= $seaPlane->addBox(8000) . ' kg'; ?> <br>
37               <?= $seaPlane->dock(); ?> <br>
38               <?= $seaPlane->cruise(); ?> <br>
39               <?= $seaPlane->takeOff(); ?> <br>
40               <?= $seaPlane->fly(); ?> <br>
41               <?= $seaPlane->land(); ?> <br>
42               <?php
43                   echo "Jadi, Butuh Bahan Bakar sebanyak " . $seaPlane->calcFuelNeeds() . ' Liter'. '<br>';
44               ?>
45       </div>
46       <div class="col mx-auto border p-2 mt-2">
47               <b><?= $helicopter->getMaxLoad() . ' kg'; ?> <br></b>
48               <?= $helicopter->addBox(8000) . ' kg'; ?> <br>
49               <?= $helicopter->addBox(2000) . ' kg'; ?> <br>
50               <?= $helicopter->takeOff(); ?> <br>
51               <?= $helicopter->fly(); ?> <br>
52               <?= $helicopter->land(); ?> <br>
53               <?php
54                   echo "Jadi, Butuh Bahan Bakar sebanyak " . $helicopter->calcFuelNeeds() . ' Liter'. '<br>';
55               ?>
56       </div>
57     </div>
58  </div>
59  </body>
60
61  </html>
```

- **Output :**

Praktikum 6
Soal No.4

Maksimal muatan Apollo duck 30000 kg	Maksimal muatan Torpedo 20000 kg	Maksimal muatan Air wolf 10000 kg
Apollo duck menambah muatan sebesar 12000 kg	Torpedo menambah muatan sebesar 12000 kg	Air wolf menambah muatan sebesar 8000 kg
Apollo duck menambah muatan sebesar 14000 kg	Torpedo menambah muatan sebesar 8000 kg	Air wolf menambah muatan sebesar 2000 kg
Apollo duck menambah muatan sebesar 1000 kg	Torpedo berada di dermaga	Air wolf lepas landas
Apollo duck menambah muatan sebesar 3000 kg	Torpedo sedang berlayar	Air wolf dalam perjalanan
Apollo duck berada di dermaga	Torpedo lepas landas	Air wolf mendarat
Apollo duck sedang berlayar	Torpedo dalam perjalanan	Jadi, Butuh Bahan Bakar sebanyak 10 Liter
Jadi, Butuh Bahan Bakar sebanyak 4 Liter	Torpedo mendarat	
	Jadi, Butuh Bahan Bakar sebanyak 5 Liter	