

Statement Kontrol - Perulangan

Mata Kuliah: Pemrograman Web

Materi Perkuliahan: 11



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**FAKULTAS SAINS DAN TEKNOLOGI
PROGRAM STUDI S1 TEKNIK INFORMATIKA
UNIVERSITAS MUHAMMADIYAH KALIMANTAN TIMUR**

Prosedur Kerja: Code dan Output

A. Code

- 06_for

1. for1-heading.php

```
1  <?php
2  $teks = "Hello world";
3  for ($a = 1; $a <= 5; $a++)
4  {
5      echo "<h".$a.">".$teks."</h".$a.">";
6  }
7  ?>
8
```

2. for2-heading.php

```
1  <?php
2  $teks = "Hello world";
3  for ($a = 1; $a <= 10; $a += 2)
4  {
5      echo "<h".$a.">".$teks."</h".$a.">";
6  }
7  ?>
8
```

3. for3-helloworld-dec.php

```
1  <?php
2  $teks = "Hello world";
3  for ($a = 10; $a > 5; $a--)
4  {
5      echo "<h".$a.">".$teks."</h".$a.">";
6  }
7  ?>
8
```

4. for4-nested-for.php

```
1  <?php
2  for ($a = 1; $a <= 3; $a++)
3  {
4      for ($b = 1; $b <= 2; $b++)
5      {
6          echo "Nilai a = ".$a. " Nilai b = ".$b. "<br />";
7      }
8  }
9  ?>
```

5. for5-bilbulat.php

```
1  <?php
2  for ($bil = 5; $bil <= 100; $bil++)
3  {
4      if ($bil % 10 == 0) echo $bil. "<br />";
5  }
6  ?>
```

6. for6-jumlah-bilbulat.php

```
1  <?php
2  $jumlah = 0;
3  for ($bil = 2; $bil <= 50; $bil++)
4  {
5      $jumlah = $jumlah + $bil;
6  }
7  echo "Hasilnya adalah ".$jumlah;
8  ?>
```

7. for7-banyak-bilbulat.php

```

1  <?php
2  $hitung = 0;
3  for ($bil = 3; $bil <= 127; $bil++)
4  {
5      if ($bil % 6 == 0) $hitung = $hitung + 1;
6  }
7  echo "Banyaknya bilangan bulat adalah ".$hitung;
8  ?>
9

```

8. for8-table.php

```

1  <?php
2  $jumBaris = 10;
3  $jumKolom = 6;
4  echo "<table border='1'>";
5  for ($baris = 1; $baris <= $jumBaris; $baris++)
6  {
7      echo "<tr>";
8      for ($kolom = 1; $kolom <= $jumKolom; $kolom++)
9      {
10         echo "<td>...</td>";
11     }
12     echo "</tr>";
13 }
14 echo "</table>";
15 ?>
16

```

9. for9-combo.php

```

1  <?php
2  echo "<select name='tahun'>";
3  for ($tahun = 1950; $tahun <= 2022; $tahun++)
4  {
5      echo "<option value='".$tahun."'>".$tahun."</option>";
6  }
7  echo "</select>";
8  ?>
9

```

- 07_while

1. while1-bil1-3.php

```
1  <?php
2  $bil = 1;
3  while ($bil <= 3) {
4      echo $bil. "<br />";
5      $bil++;
6  }
7  ?>
8
```

2. while2-rand.php

```
1  <?php
2  $bil = rand(0, 10);
3  while ($bil != 0) {
4      echo $bil."<br />";
5      $bil = rand(0, 10);
6  }
7  ?>
8
```

3. while3-nested.php

```
1  <?php
2  $a = 1;
3  while ($a <= 3) {
4      $b = 1;
5      while ($b <= 2)
6      {
7          echo "nilai a = ".$a. " nilai b = ".$b. "<br />";
8          $b++;
9      }
10     $a++;
11 }
12 ?>
```

4. while4-x10.php

```
1  <?php
2  $bil = 5;
3  while ($bil <= 100) {
4      if ($bil % 10 == 0) echo $bil. "<br />";
5      $bil++;
6  }
7  ?>
8
```

5. while5-bilbulat.php

```
1  <?php
2  $jumlah = 0;
3  $bil = 2;
4  while ($bil <= 50) {
5      $jumlah = $jumlah + $bil;
6      $bil++;
7  }
8  echo "Hasilnya adalah ".$jumlah;
9  ?>
10
```

6. while6-sumbulat.php

```
1  <?php
2  $hitung = 0;
3  $bil = 3;
4  while ($bil <= 127) {
5      if ($bil % 6 == 0) $hitung = $hitung + 1;
6      $bil++;
7  }
8  echo "Banyaknya bilangan bulat adalah ".$hitung;
9  ?>
10
```

7. while7-table.php

```
1  <?php
2  $jumBaris = 10;
3  $jumKolom = 6;
4  echo "<table border='1'>";
5  $baris = 1;
6  while ($baris <= $jumBaris) {
7      echo "<tr>";
8      $kolom = 1;
9      while ($kolom <= $jumKolom) {
10         echo "<td>...</td>";
11         $kolom++;
12     }
13     echo "</tr>";
14     $baris++;
15 }
16 echo "</table>";
17 ?>
18
```

8. while8-combo.php

```
1  <?php
2  echo "<select name='tahun'>";
3  $tahun = 1950;
4  while ($tahun <= 2022) {
5      echo "<option value='". $tahun ."'>". $tahun . "</option>";
6      $tahun++;
7  }
8  echo "</select>";
9  ?>
10
```

- SOAL 2

1. soal1.php

```

1  <form method="post">
2      Saldo Awal:
3      <input type="number" name="saldo_awal" required><br><br>
4
5      Jangka Waktu (N bulan):
6      <input type="number" name="jangka_waktu" required><br><br>
7
8      <input type="submit" value="Hitung Saldo Akhir">
9  </form>
10
11  <?php
12
13  function hitungBungaBulanan($saldo) {
14      // rate tahunan sesuai ketentuan PDF
15      $rate_tahunan = ($saldo < 1100000) ? 0.03 : 0.04;
16      return ($rate_tahunan / 12) * $saldo;
17  }
18
19  if ($_SERVER['REQUEST_METHOD'] === 'POST') {
20
21      $saldo_awal      = (float) $_POST['saldo_awal'];
22      $jangka_waktu    = (int) $_POST['jangka_waktu'];
23      $biaya_admin     = 9000;
24
25      // saldo yang akan dihitung
26      $saldo = $saldo_awal;
27
28      echo "<h3>Rincian Perhitungan</h3>";
29      echo "<table border='1' cellpadding='6' cellspacing='0'>
30          <tr>
31              <th>Bulan</th>
32              <th>Bunga</th>
33              <th>Biaya Admin</th>
34              <th>Saldo Akhir Bulan</th>
35          </tr>";
36

```

```

37     for ($bulan = 1; $bulan <= $jangka_waktu; $bulan++) {
38
39         // Hitung bunga bulanan berdasarkan aturan PDF
40         $bunga = hitungBungaBulanan($saldo);
41
42         // Tambah bunga lalu kurangi admin
43         $saldo = $saldo + $bunga - $biaya_admin;
44
45         echo "<tr>
46             <td align='center'>$bulan</td>
47             <td>Rp " . number_format($bunga, 0, ',', '.') . "</td>
48             <td>Rp " . number_format($biaya_admin, 0, ',', '.') . "</td>
49             <td>Rp " . number_format($saldo, 0, ',', '.') . "</td>
50         </tr>";
51     }
52
53     echo "</table><br>";
54
55     echo "<h3>Saldo akhir setelah $jangka_waktu bulan adalah:</h3>";
56     echo "<b>Rp " . number_format($saldo, 0, ',', '.') . "</b>";
57 }
58 ?>
59

```

2. soal2.php

```

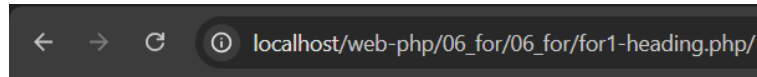
1  <?php
2
3  $total = 25;
4  $jumlah_solusi = 0;
5
6  $x = 1;
7
8  while ($x < $total) {
9
10     $y = 1;
11
12     while ($y < $total) {
13
14         // z dihitung langsung
15         $z = $total - ($x + $y);
16
17         // valid jika z bilangan asli
18         if ($z >= 1) {
19             echo "x = $x, y = $y, z = $z <br>";
20             $jumlah_solusi++;
21         }
22
23         $y++;
24     }
25
26     $x++;
27 }
28
29 echo "<br><b>Total penyelesaian: $jumlah_solusi</b>";
30 ?>
31

```

B. Output

- 06_for

1. for1-heading.php



Hello World

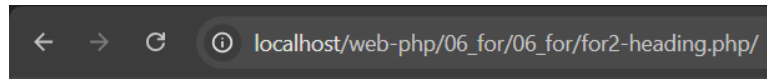
Hello World

Hello World

Hello World

Hello World

2. for2-heading.php



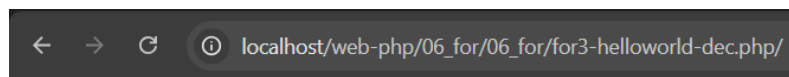
Hello World

Hello World

Hello World

Hello WorldHello World

3. for3-helloworld-dec.php



Hello WorldHello WorldHello WorldHello World

Hello World

4. for4-nested-for.php

```
localhost/web-php/06_for/06_for/for4-nested-for.php/

Nilai a = 1 Nilai b = 1
Nilai a = 1 Nilai b = 2
Nilai a = 2 Nilai b = 1
Nilai a = 2 Nilai b = 2
Nilai a = 3 Nilai b = 1
Nilai a = 3 Nilai b = 2
```

5. for5-bilbulat.php

```
localhost/web-php/06_for/06_for/for5-bilbulat.php/

10
20
30
40
50
60
70
80
90
100
```

6. for6-jumlah-bilbulat.php

```
localhost/web-php/06_for/06_for/for6-jumlah-bilbulat.php/

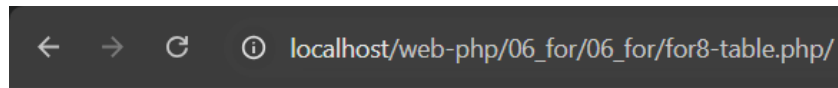
Hasilnya adalah 1274
```

7. for7-banyak-bilbulat.php

```
localhost/web-php/06_for/06_for/for7-banyak-bilbulat.php/

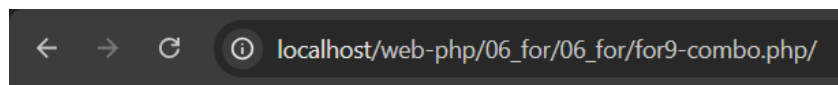
Banyaknya bilangan bulat adalah 21
```

8. for8-table.php



...
...
...
...
...
...
...
...
...
...
...
...

9. for9-combo.php



1950 ▾

1950 ▲

1951

1952

1953

1954

1955

1956

1957

1958

1959

1960

1961

1962

1963

1964

1965

1966

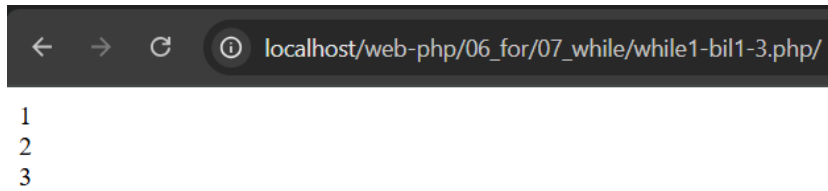
1967

1968

1969 ▾

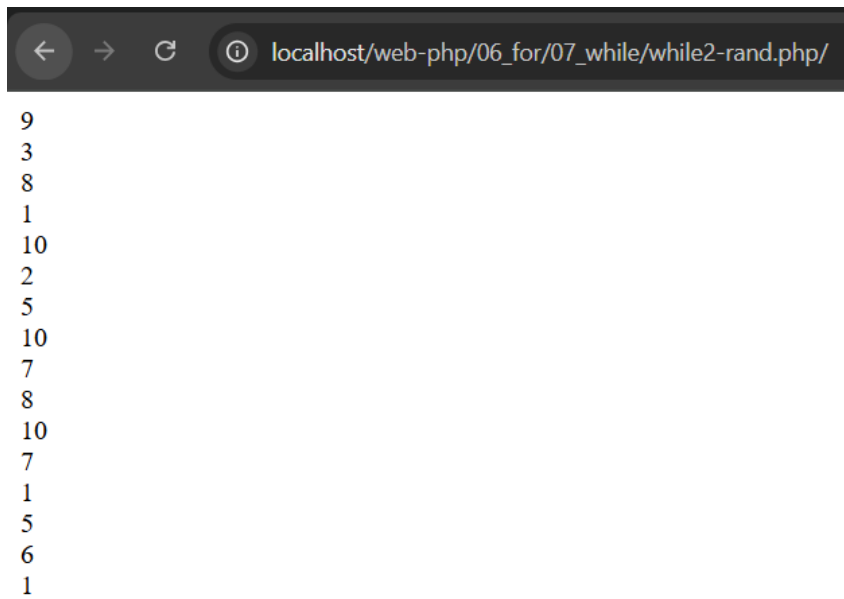
- 07_while

1. while1-bil1-3.php



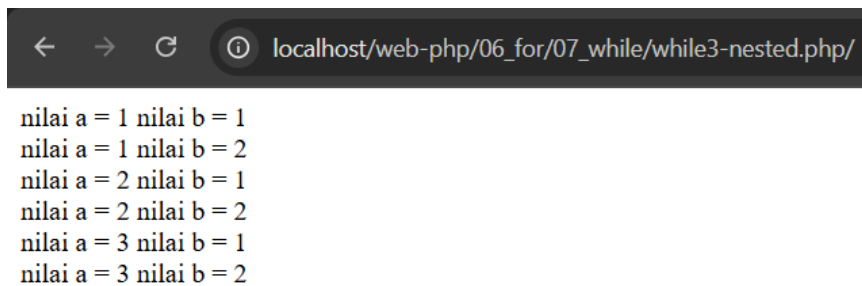
A screenshot of a web browser window. The address bar shows the URL `localhost/web-php/06_for/07_while/while1-bil1-3.php/`. The page content displays the numbers 1, 2, and 3 on separate lines.

2. while2-rand.php



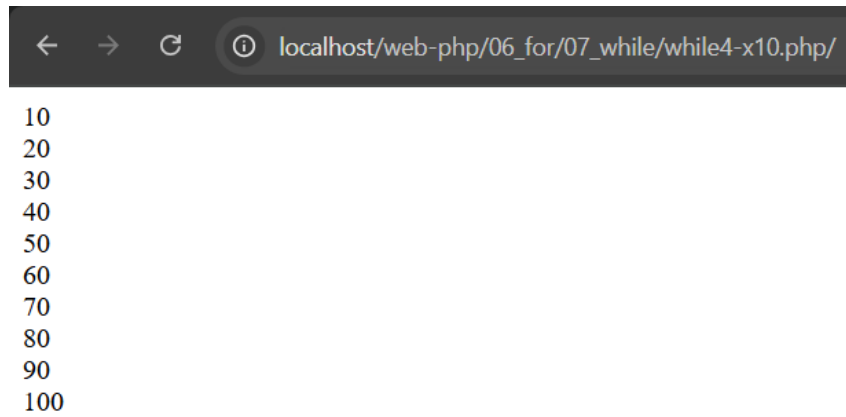
A screenshot of a web browser window. The address bar shows the URL `localhost/web-php/06_for/07_while/while2-rand.php/`. The page content displays a sequence of random numbers: 9, 3, 8, 1, 10, 2, 5, 10, 7, 8, 10, 7, 1, 5, 6, and 1, each on a new line.

3. while3-nested.php

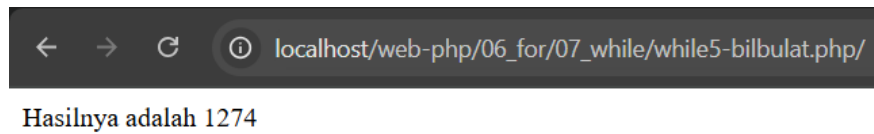


A screenshot of a web browser window. The address bar shows the URL `localhost/web-php/06_for/07_while/while3-nested.php/`. The page content displays the following output:
nilai a = 1 nilai b = 1
nilai a = 1 nilai b = 2
nilai a = 2 nilai b = 1
nilai a = 2 nilai b = 2
nilai a = 3 nilai b = 1
nilai a = 3 nilai b = 2

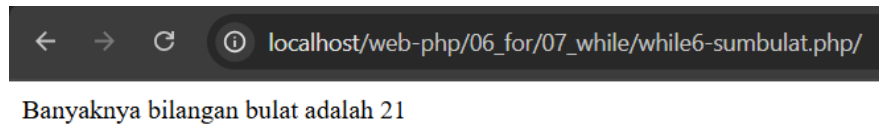
4. while4-x10.php



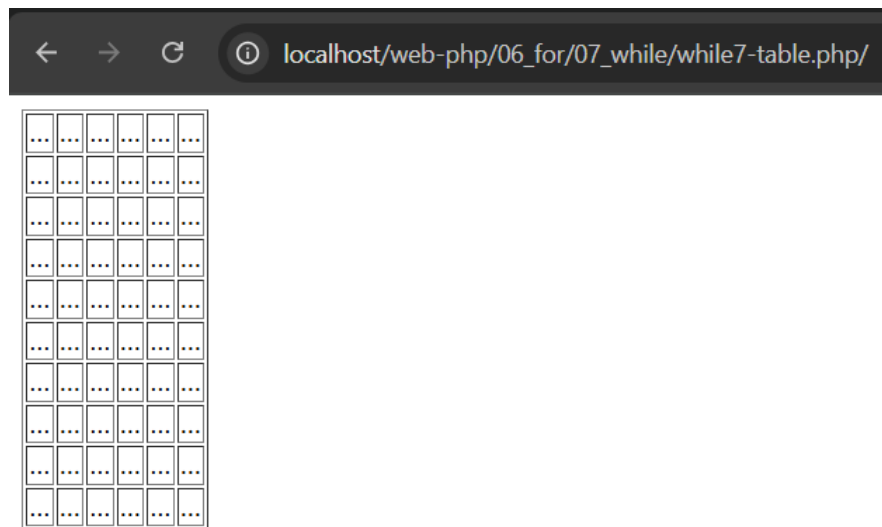
5. while5-bilbulat.php



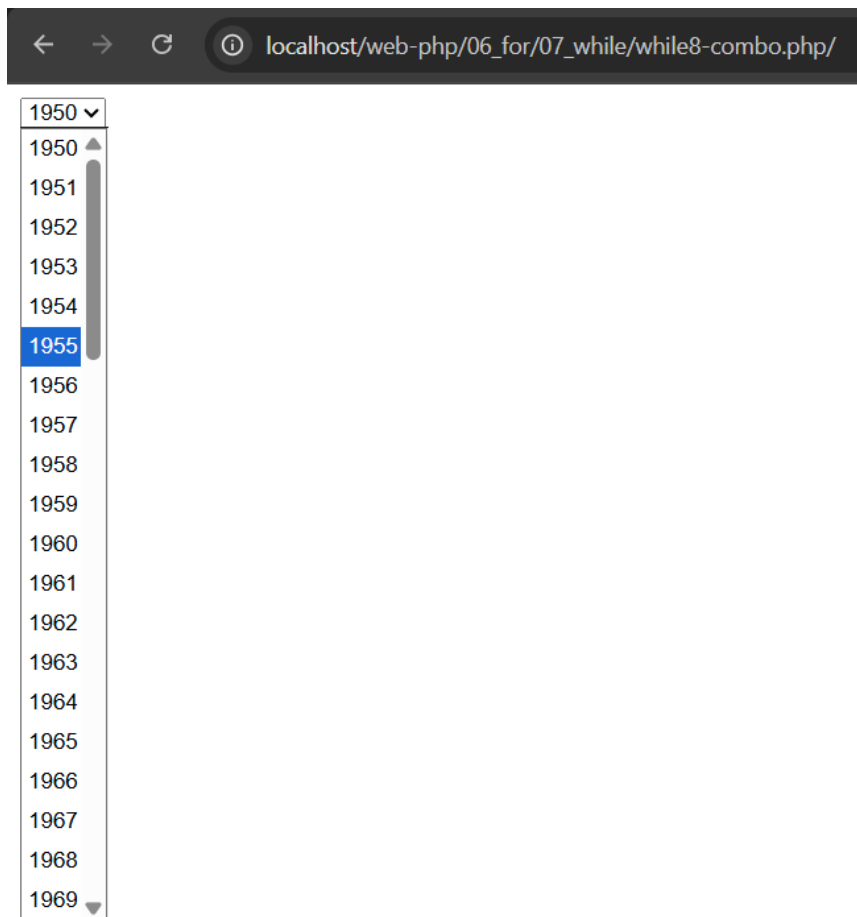
6. while6-sumbulat.php



7. while7-table.php



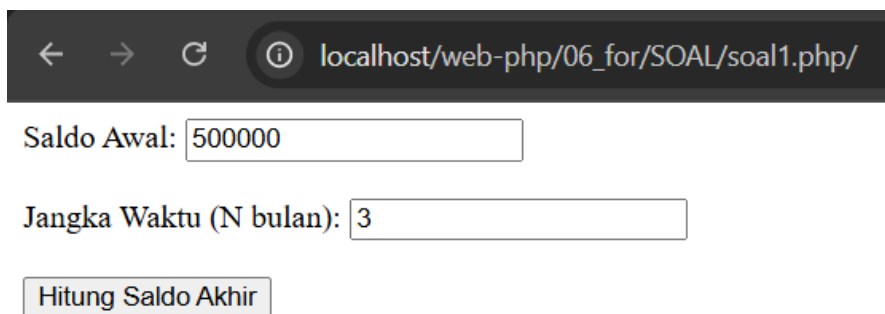
8. while8-combo.php



The screenshot shows a web browser window with the address bar displaying "localhost/web-php/06_for/07_while/while8-combo.php/". Below the address bar is a dropdown menu containing a list of years from 1950 to 1969. The year 1955 is currently selected and highlighted in blue. The dropdown menu has a small upward arrow at the top and a downward arrow at the bottom.

- **SOAL**

1. soal1.php



The screenshot shows a web browser window with the address bar displaying "localhost/web-php/06_for/SOAL/soal1.php/". Below the address bar is a form with two input fields. The first field is labeled "Saldo Awal:" and contains the value "500000". The second field is labeled "Jangka Waktu (N bulan):" and contains the value "3". Below these fields is a button labeled "Hitung Saldo Akhir".

Rincian Perhitungan

Bulan	Bunga	Biaya Admin	Saldo Akhir Bulan
1	Rp 1.250	Rp 9.000	Rp 492.250
2	Rp 1.231	Rp 9.000	Rp 484.481
3	Rp 1.211	Rp 9.000	Rp 476.692

Saldo akhir setelah 3 bulan adalah:

Rp 476.692

2. soal2.php

Total penyelesaian: 276

Kesimpulan:

Praktikum ini memberikan pemahaman mengenai cara kerja struktur perulangan dalam PHP, seperti *for*, *while*, dan *nested loop*. Melalui berbagai contoh program, terlihat bagaimana proses yang membutuhkan pengulangan dapat disederhanakan sehingga kode menjadi lebih ringkas dan mudah dipahami. Pemahaman dasar ini menjadi fondasi penting untuk membangun logika pemrograman yang efektif.

Beragam latihan yang diberikan menunjukkan bahwa perulangan dapat digunakan untuk menghasilkan banyak bentuk output, mulai dari menampilkan teks secara berulang, menghitung nilai numerik, hingga membuat tabel HTML secara otomatis. Hal ini memperlihatkan betapa fleksibelnya struktur perulangan dalam membantu menyusun alur program yang lebih teratur dan efisien.

Pada bagian soal, konsep perulangan diterapkan dalam kasus nyata seperti menghitung saldo dengan bunga bulanan serta mencari kombinasi bilangan yang memenuhi persamaan tertentu. Penerapan ini memperkuat pemahaman bahwa perulangan tidak hanya digunakan untuk mengulang nilai, tetapi juga sebagai alat penting untuk menyelesaikan permasalahan logika yang lebih kompleks. Secara keseluruhan, praktikum ini memperjelas peran perulangan dalam pemrograman web dan meningkatkan kemampuan dalam mengelola proses yang bersifat repetitif.