

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 ?>
10
```

5. for5-bilbulat.php

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

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 ?>
9
```

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 $jumlahBaris = 10;
3 $jumlahKolom = 6;
4 echo "<table border='1'>";
5 $baris = 1;
6 while ($baris <= $jumlahBaris) {
7     echo "<tr>";
8     $kolom = 1;
9     while ($kolom <= $jumlahKolom) {
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      $bunga = hitungBungaBulan($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

```

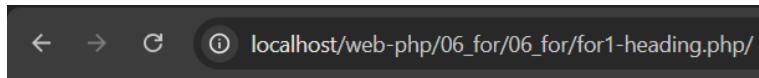
1  <?php
2
3  $total = 25;
4  $jumlah_solusi = 0;
5
6  $x = 1;
7
8  while ($x < $total) {
9
10     $y = 1;
11
12     while ($y < $total) {
13
14         // z dihitung langsung
15         $z = $total - ($x + $y);
16
17         // valid jika z bilangan asli
18         if ($z >= 1) {
19             echo "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



The screenshot shows a dark-themed web browser window. The address bar at the top contains the URL "localhost/web-php/06_for/06_for/for1-heading.php/" with a magnifying glass icon to its left. Below the address bar, the main content area displays the text "Hello World" in large, bold, black font. Underneath it, there are four smaller "Hello World" entries, each in a different font style: a bold sans-serif, a regular sans-serif, a bold serif, and a regular serif.

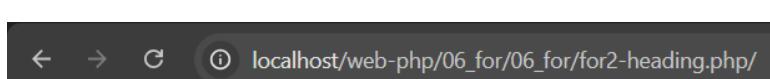
Hello World

Hello World

Hello World

Hello World

2. for2-heading.php



The screenshot shows a dark-themed web browser window. The address bar at the top contains the URL "localhost/web-php/06_for/06_for/for2-heading.php/" with a magnifying glass icon to its left. Below the address bar, the main content area displays the text "Hello World" in large, bold, black font. Underneath it, there are two smaller "Hello World" entries, each in a different font style: a bold sans-serif and a regular sans-serif.

Hello World

Hello World

Hello WorldHello World

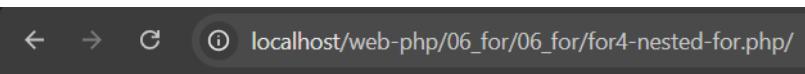
3. for3-helloworld-dec.php



The screenshot shows a dark-themed web browser window. The address bar at the top contains the URL "localhost/web-php/06_for/06_for/for3-helloworld-dec.php/" with a magnifying glass icon to its left. Below the address bar, the main content area displays the text "Hello WorldHello WorldHello WorldHello World" in a single line of black font.

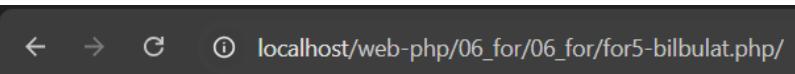
Hello World

4. for4-nested-for.php



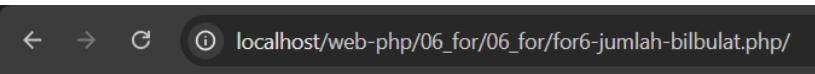
```
Nilai a = 1 Nilai b = 1  
Nilai a = 1 Nilai b = 2  
Nilai a = 2 Nilai b = 1  
Nilai a = 2 Nilai b = 2  
Nilai a = 3 Nilai b = 1  
Nilai a = 3 Nilai b = 2
```

5. for5-bilbulat.php



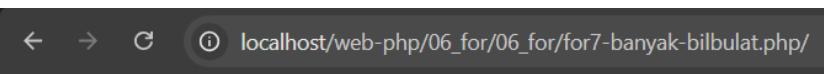
```
10  
20  
30  
40  
50  
60  
70  
80  
90  
100
```

6. for6-jumlah-bilbulat.php



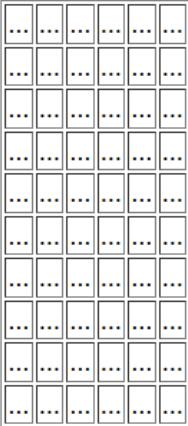
Hasilnya adalah 1274

7. for7-banyak-bilbulat.php



Banyaknya bilangan bulat adalah 21

8. for8-table.php



A screenshot of a web browser window. The address bar shows the URL: `localhost/web-php/06_for/06_for/for8-table.php/`. The main content area displays a 10x10 grid of small, empty square boxes.

9. for9-combo.php

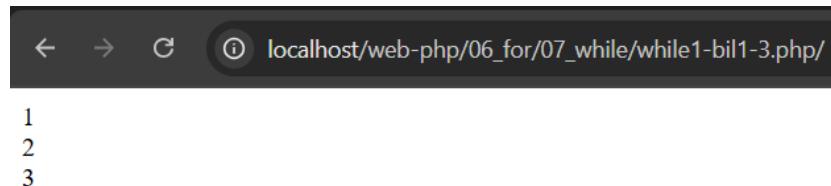


A screenshot of a web browser window. The address bar shows the URL: `localhost/web-php/06_for/06_for/for9-combo.php/`. The main content area displays a dropdown menu with a list of years from 1950 to 1969. The year 1950 is selected and highlighted in blue.

Year
1950
1951
1952
1953
1954
1955
1956
1957
1958
1959
1960
1961
1962
1963
1964
1965
1966
1967
1968
1969

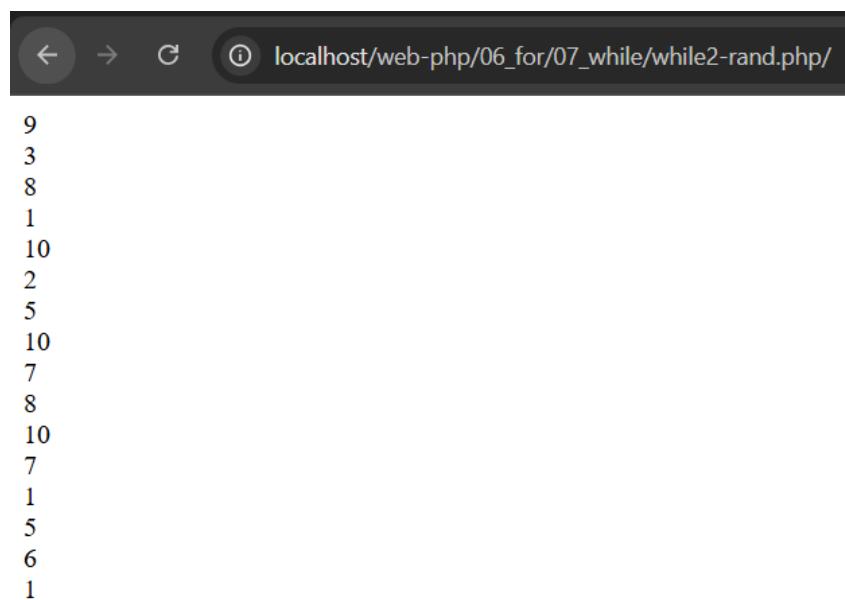
- **07_while**

1. while1-bil1-3.php



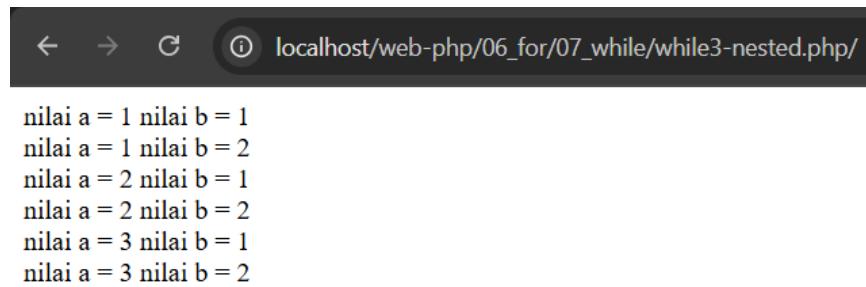
```
1  
2  
3
```

2. while2-rand.php



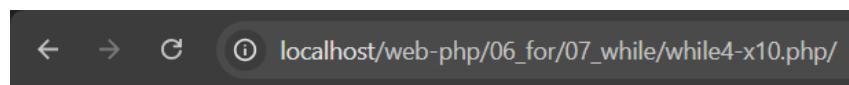
```
9  
3  
8  
1  
10  
2  
5  
10  
7  
8  
10  
7  
1  
5  
6  
1
```

3. while3-nested.php



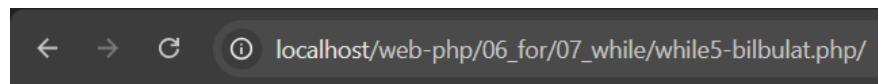
```
nilai a = 1 nilai b = 1  
nilai a = 1 nilai b = 2  
nilai a = 2 nilai b = 1  
nilai a = 2 nilai b = 2  
nilai a = 3 nilai b = 1  
nilai a = 3 nilai b = 2
```

4. while4-x10.php



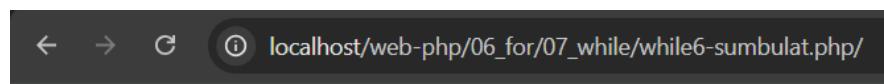
```
10  
20  
30  
40  
50  
60  
70  
80  
90  
100
```

5. while5-bilbulat.php



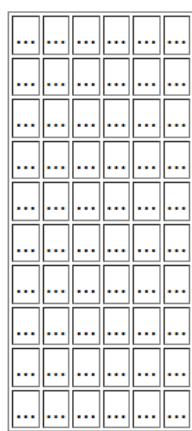
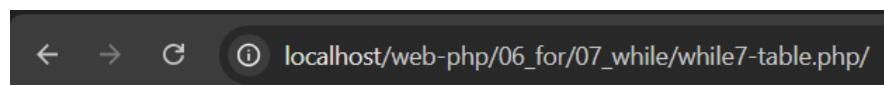
Hasilnya adalah 1274

6. while6-sumbulat.php

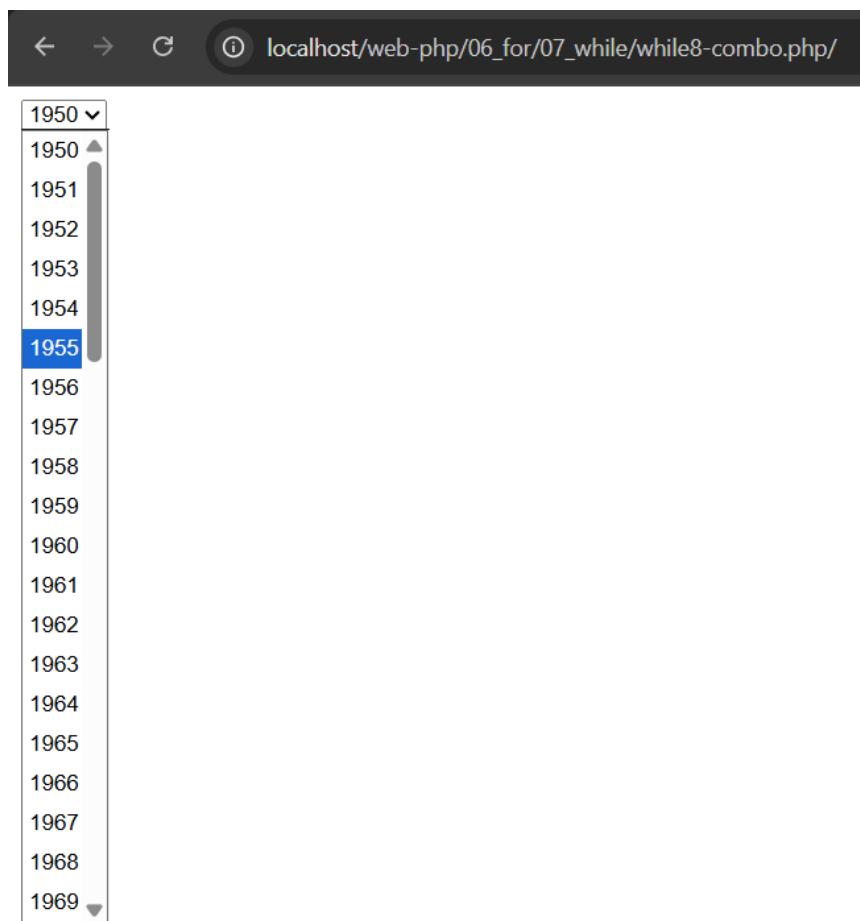


Banyaknya bilangan bulat adalah 21

7. while7-table.php



8. while8-combo.php

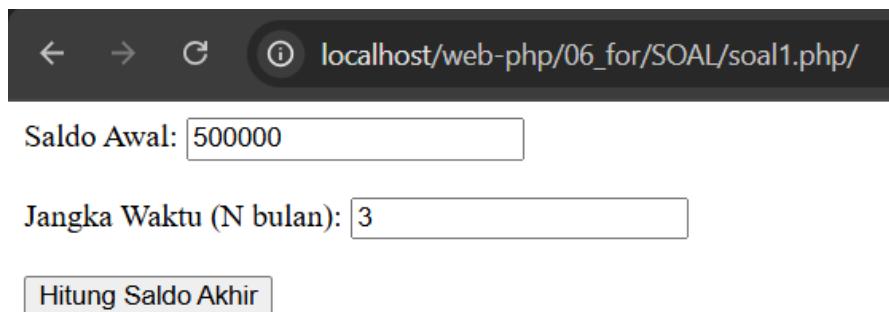


A screenshot of a dropdown menu on a web browser. The URL in the address bar is "localhost/web-php/06_for/07_while/while8-combo.php/". The dropdown menu shows a list of years from 1950 to 1969. The year 1955 is highlighted with a blue selection bar.

Year
1950
1951
1952
1953
1954
1955
1956
1957
1958
1959
1960
1961
1962
1963
1964
1965
1966
1967
1968
1969

• **SOAL**

1. soal1.php



A screenshot of a web form on a browser. The URL in the address bar is "localhost/web-php/06_for/SOAL/soal1.php/". The form contains three input fields: "Saldo Awal" with the value "500000", "Jangka Waktu (N bulan)" with the value "3", and a button labeled "Hitung Saldo Akhir".

Saldo Awal:	500000
Jangka Waktu (N bulan):	3
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.