

# Arrays

Multiple Value Storage

# Key – Value Pairs

Most data (even in the human world) is expressed in key – value pairs.

For example:

City Name = Paris

Country Name = France

City Name is the key, Paris is the value.

Country Name is the key, France is the value.

In arrays, data is also expressed in key – value pairs.

# Array Creation

Arrays are stored in variables

## **Use the array function**

```
$northAmerica = array('Canada','United States','Mexico');
```

## **Use an array bracket** (as of PHP 5.4)

```
$northAmerica = ['Canada','United States','Mexico'];
```

## **Use individual brackets**

```
$northAmerica[] = 'Canada';
```

```
$northAmerica[] = 'United States';
```

```
$northAmerica[] = 'Mexico';
```

\$northAmerica is the same in all cases.

# Array Types

Arrays fall with three types:

- Numeric (a.k.a. indexed)
- Associative
- Multidimensional

These types are largely indicative of the key (key-value) type used in the array.

# Indexed or Numeric

Indexed arrays use numeric values (starting at 0) as keys.

## **Values can be manually assigned**

```
$africa = array(0=>'Egypt', 1=>'Morocco', 2=>'Ghana');
```

## **Values will be automatically assigned**

```
$africa = array('Egypt', 'Morocco', 'Ghana');
```

**Both arrays are identical.**

# Associative

Associative arrays use strings as keys. String keys must be quoted.

```
$japan['capital'] = 'Tokyo';
```

```
$japan['pop'] = 1270000000;
```

```
$japan['lifespan'] = 84.4;
```

```
$japan['govt'] = 'parliamentary';
```

# Multidimensional

A multidimensional array is an array of arrays.

A multidimensional array can be mixed or all the same type (meaning indexed or associative).

```
$asia = array(  
    array('Tokyo', 127000000, 84.4, 'Parliamentary'),  
    array('capital'=>'Beijing', 'pop'=>1300000000,  
        'lifespan'=>75.15, 'govt'=>'Communist state'),  
    array('capital'=>'New Delhi', 1236300000, 67.8,  
        'govt'=>'Federal Republic'));
```

\$asia is the name of the multidimensional array, while the interior arrays are indexed, beginning with 0 (zero).

# Accessing Indexed Values

\$africa is a simple, indexed array.

```
$africa = array('Egypt', 'Morocco', 'Ghana');
```

```
echo $africa[1]; // Morocco
```

```
echo $africa[2]; // Ghana
```

```
echo $africa[0]; // Egypt
```



# Accessing Associative Values

\$japan is a simple, associative array.

```
$japan = array('capital'=>'Tokyo',  
              'pop'=>127000000,  
              'lifespan'=>84.4,  
              'govt'=>'parliamentary');
```

```
echo $japan['govt']; // parliamentary  
echo $japan['capital']; // Tokyo  
echo $japan['pop']; // 127000000  
echo $japan['lifespan']; // 84.4
```

# Accessing Multidimensional Values

Multidimensional values require using the large array name, then the keys of the values in the interior arrays.

```
$asia = array(  
    array('Tokyo', 127000000, 84.4, 'Parliamentary'),  
    array('capital'=>'Beijing', 'pop'=>1300000000,  
        'lifespan'=>75.15, 'govt'=>'Communist state'),  
    array('capital'=>'New Delhi', 1236300000, 67.8,  
        'govt'=>'Federal Republic'));
```

```
echo $asia[0][1]; // this should be the population of Japan - 127000000  
echo $asia[1]['lifespan']; // this should be lifespan in China – 75.15  
echo $asia[2]['govt']; // this should be the government of India – Federal  
Republic
```