

## Solutions

### 1. CSS

```
body {
    background-color: #DDD;
}
#info img {
    float: right;
    height: 200px;
    margin: 10px;
}
#info {
    padding-left: 2%;
    float: left;
    width: 78%;
}
#stats {
    width: 20%;
    float: left;
    background-color: #AAA;
}
li {
    list-style: none;
    margin-bottom: 10px;
    margin-right: 5px;
    font-size: 10pt;
}
ul {
    padding-left: 15px;
}
h1, h3, #gallery {
    text-align: center;
}
#gallery {
    clear: both;
}
#gallery img {
    height: 130px;
    vertical-align: top;
}
#main {
    border: 5px solid #AAA;
    overflow: hidden;
    width: 80%;
    margin-left: auto;
    margin-right: auto;
}
```

## 2. PHP

```
===== coffee.php =====
<?php
$name = "";
$order = "";
$decaf = "";
if(isset($_COOKIE["name"])) {
    $name = $_COOKIE["name"];
}
if(isset($_COOKIE["order"])) {
    $order = $_COOKIE["order"];
}
if(isset($_COOKIE["decaf"])) {
    $decaf = $_COOKIE["decaf"];
}
?>

<!DOCTYPE html>
<html>
    <head>
        <title></title>
    </head>
    <body>
        <h1>Coffee order form</h1>
        <?php
            if(isset($_GET["error"])) {
                ?><p>Please fill out all required information</p><?php
            }
        ?>
        <form action="coffee-submit.php" method="post">
            <div>name: <input type="text" name="name" value="<?=$name?>" /></div>
            <div>order: <input type="text" name="order" value="<?=$order?>" /></div>
            <div>decaf: <input type="checkbox" name="decaf" checked="<?=$decaf?>" /></div>
            <div><input type="submit" value="order it!" /></div>
        </form>
    </body>
</html>
```

```
===== coffee-submit.php =====
```

```
<?php
    if(!isset($_POST["name"]) || !isset($_POST["order"])) {
        header("Location: raven.php?error=true");
        die();
    }
    $name = $_POST["name"];
    $order = $_POST["order"];
    $decaf = $_POST["decaf"];

    setcookie("name", $name);
    setcookie("order", $order);
    setcookie("decaf", $decaf);

    file_put_contents("orders.txt", "$name $order $decaf\n", FILE_APPEND);
?>
<!DOCTYPE html>
<html>
    <head>
        <title></title>
    </head>
    <body>
        <p>Your coffee order of <?=$order ?> will be delivered soon!</p>
    </body>
</html>
```

### 3. PHP/JSON

```
<?php
if(!isset($_GET["type"])) {
    header("HTTP/1.1 400 type not found");
    die();
}

$type = $_GET["type"];
$array = array();
$array["type"] = $type;
$pokemon = array();

$lines = file("$type.txt");
foreach ($lines as $line) {
    list($name $nickname $id $stage $weakness $description) = explode(" ", $line, 6);
    $poke = array();
    $poke["name"] = $name;
    $poke["nickname"] = $nickname;
    $poke["pokedex_number"] = $id;
    $poke["stage"] = $stage;
    $poke["weakness"] = $weakness;
    $poke["description"] = $description;

    $pokemon[] = $poke;
}
$array["pokemon"] = $pokemon;

header("Content-type: application/json");
print(json_encode($array));
?>
```

#### 4. AJAX/XML

```
window.onload = function() {
    makeRequest("begin");
};

function makeRequest(nodeid) {
    var request = new XMLHttpRequest();
    request.onload = processData;
    request.open("GET", "adventure.php?nodeid=" + nodeid, true);
    request.send();
}

function processData() {
    if(this.status != 200) {
        document.getElementById("answer").innerHTML = "";
        document.getElementById("situationparagraph").innerHTML = "A " + this.status + " error has occurred";
    } else {
        var question = this.responseXML.querySelector("situation");
        if(question) {
            document.getElementById("situationparagraph").innerHTML = question.textContent;
            var answers = this.responseXML.querySelectorAll("answer");
            document.getElementById("answer").innerHTML = "";
            for(var i = 0; i < answers.length; i++) {
                var button = document.createElement("button");
                button.innerHTML = answers[i].textContent;
                button.onclick = go;
                document.getElementById("answer").appendChild(button);
            }
        } else {
            document.getElementById("situationparagraph").innerHTML =

            this.responseXML.querySelector("end").getAttribute("reason");
            document.getElementById("answer").innerHTML = "";
        }
    }
}

function go() {
    makeRequest(this.innerHTML);
}
```

## 5. Regex

a) `/^3[47][0-9]{13}$/`

b)  `/^[([0-9]+(, [0-9]+)*)?]*$/`

c)  `/^[0-9]+([+*\%][0-9]+)*=[0-9]*$/`

## 6. SQL

```
SELECT DISTINCT co.name FROM countries co
JOIN languages l1 ON co.code = l1.country_code
JOIN languages l2 ON co.code = l2.country_code
JOIN cities ci1 ON co.code = ci1.country_code
JOIN cities ci2 ON co.code = ci2.country_code
WHERE l1.language = "english" AND (gnp - gnp_old) > 100
      AND l1.language <> l2.language AND ci1.name <> ci2.name
      AND ci1.population > 1000000 AND ci2.population > 1000000
ORDER BY co.name
```