CMSC 424 01 – Fall 2025
HOMEWORK # 8
Assigned: November 6, 2025
Due: November 13, 2025, on gradescope

1 – What is the name of the JAVA package that contains interfaces and classes to interact with a database? (5 points)

java.sql

2 – What is the name of the JAVA class that we use to process the results of a SELECT query? (5 points)

ResultSet

3 – What is the name of the JAVA interface that encapsulates a connection to a database? (5 points)

Connection

4 – What is the name of the method of the Statement interface that we use to perform an insert, update or delete SQL query? (5 points)

public int executeUpdate(String sql)

5 – What is the name of the method of the Statement interface that we use to perform select SQL query? (5 points)

public ResultSet executeQuery(String sql)

6 – What is the name of a JAVA interface that we can use in conjunction with parametrized SQL queries like "delete from user where id = ?" ? Note that we did not cover that in class. (5 points)

PreparedStatement

7 – Give the name of a PHP framework other than Symfony, Laravel, or CakePHP. Note that we did not cover that in class. (5 points)

CodeIgniter

8 – What is the name of the PHP function that converts a JSON string into an object? Note that we did not cover that in class. (5 points)

json_decode()

9 – JSON stands for (5 points)

JavaScript Object Notation

10 – We have the following PHP code. Note that we did not cover that in class. (10 points)

$json1 = '{"name": "Jane", "age": 20 }';
Complete the code and output the value associated with name above not knowing what it is (Jane in this example). **You must use the function in question 8 above**.

```php
$obj = json_decode($json1);
echo $obj->name;
```

11 – We have the following PHP code. Note that we did not cover that in class. (10 points)
$json2 = '["New York", "DC", "Atlanta"]';
Complete the code and assign to the variable $city the value of the second city in the json above not knowing what it is (DC in this example). DO NOT output anything. **You must use the function in question 8 above**.

```
$obj = json_decode($json2);
$city = $obj[1];
```

13 – What is the name of the PHP function that converts an array into a string that stores the corresponding JSON? Note that we did not cover that in class. (5 points)

```
json_encode()
```

14 – We have the following PHP code. Note that we did not cover that in class. (15 points)

$sql = "select name, state, age from user"; // name and state are strings, age is an integer.
// $mysqli is a valid mysqli resource
$result = $mysqli->query($sql);
// We want to generate a JSON string ($json) with the results of the above query; complete the
// code below. **YOU MUST USE the function in question #13 above.**
$json = "[";
while ($row = $result -> fetch_assoc( )) {

```
$json .= json_encode($row);
}
```

$json .= "]";

15 – We have the following PHP code. Note that we did not cover that in class. (15 points)

$sql = "select name, age from user"; // name is a string, age is an integer.
// $mysqli is a valid mysqli resource
$result = $mysqli->query($sql);
// We want to generate a JSON string ($json) with the results of the above query; complete the
// code below. **DO NOT USE the function in question #13 above.**

```
$json = "[";
while ( $row = $result -> fetch_assoc( ) ) {

    $name = $row['name'];
    $age = $row['age'];

    $json .= '{"name":"' . $name . '","age":' . $age . '},';
    }
```

```
$json .= "]";
```