



PZero: Developer Test

Conditions of the assessment

Under none of the sections will you be allowed to receive assistance from any other person.

Time limit

Assessment is to be returned no later than 2 days after receipt. Late submission will be an automatic fail.

Section 1

- Internet **may not** be used to solve the questions.
- Your computer may not be used to help you solve these questions.
- You may use no reference material or notes to solve these questions.

Section 2

- Internet **may** be used in this section.
- We will be testing ability to problem solve and learn new skills.

Section 3 (bonus points)

- Internet **may** be used.
- This will be to test ability to learn new frameworks.

Section 1

1. You are given a series 1,2,3 ... recognize the pattern and write a small piece of php code to print out this series up until *infinity (infinite loop)*.

```
<?php
while ($i > -1)
{
    echo "$i";
    $i++;
}
?>
```

1. You are given a series 1,3,6,10 ... recognize the pattern and write a small piece of php code to print out this series up until infinity (infinite loop).

```
<?php
while ($i = 1)
{
    $i * ( $i + 1 ) / 2;
    $i++;
    echo "$i";
}
?>
```

1. Explain what it means to define a class as abstract:

An abstract classes are the class where one or more methods are abstract but not necessarily all method has to be abstract.

1. Briefly explain the difference between private and protected in terms of OOP:

Protected: Protected limits access to inherited and parent classes (and to the class

that defines the item).

Private: Private limits visibility only to the class that defines the item.

1. Define the following php functions:

- explode

explode() splits a string into array by string.

- strpos

The strpos() function finds the position of the first occurrence of a string inside another string.

- rtrim

The trim() function removes white spaces or other predefined characters from right sides of a string.

- require

require() includes and evaluates a specific file.

- require_once

require_once() is recommended to use when you want to include a file where you have a lot of functions for example. This way you make sure you don't include the file more times and you will not get the "function re-declared" error.

6. What would the following code output:

```
for ($i = 0; $i < 5; $i++) {  
    echo $i;  
    continue;  
}
```

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7. What would the following code output:

```
do {  
    echo "1";  
    continue;  
    echo "2";  
    break;  
} while (false);
```

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8. You are given 2 tables in a database, a user table and a company table.

User
id
username
company_id

Company
id
name

Write a query to give the following result :

user_name	company_name
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```
SELECT User.UserID, Company.CompanyName
FROM Orders
INNER JOIN Company
ON User.CompanyID=Company.CompanyID;
```

10. Briefly describe what JSON is and what php functions you would use to make use of JSON on a day to day basis:

JSON is used to a model of data. The `json_encode()` is used for decoding data model from a object.

Section 2

In this section you will be scraping data and putting it into a usable format for further development. With php code read the following web page.

<https://www.worldometers.info/coronavirus/>

Parse and read this table of data.

All	Europe	North America	Asia	South America	Africa	Oceania						
#	Country, Other	Total Cases	New Cases	Total Deaths	New Deaths	Total Recovered	Active Cases	Serious, Critical	Tot Cases/ 1M pop	Deaths/ 1M pop	Total Tests	
	World	4,904,559	+16,435	320,326	+361	1,916,024	2,668,209	44,776	629	41.1		
1	USA	1,550,294		91,981		356,383	1,101,930	16,868	4,687	278	12	
2	Russia	299,941	+9,263	2,837	+115	76,130	220,974	2,300	2,055	19	7	
3	Spain	278,188		27,709		196,958	53,521	1,152	5,950	593	3	
4	Brazil	255,368		16,853		100,459	138,056	8,318	1,202	79		
5	UK	246,406		34,796		N/A	N/A	1,559	3,632	513	2	
6	Italy	225,886		32,007		127,326	66,553	749	3,735	529	3	
7	France	179,927		28,239		61,728	89,960	1,998	2,757	433	1	
8	Germany	177,280		2,122		155,700	13,466	1,132	2,117	67	2	

Then format that data into a json string with the following fields.

Country, total cases, new cases, total deaths, new deaths and total recovered.

You can structure your json as you like as long as it follows a logical structure and conforms to json standards as you will be needing it in the next section.

Commit your php code either to bitbucket or github and share the link of your code repository to earn credit for this question.

Section 3 (bonus points)

In this section we will be testing your ability to learn new skills and adapt to be able to take on new challenging projects with new technologies. Create a new laravel project with user authentication using the standard laravel auth feature. Create a basic admin section which reads the json data you created in section 2 and displays it in a table format in your admin section. Be sure to include all your migrations in your code base so that we can create this project by running migrations. Also please make use of a MySQL database to store your user credentials. Your data table in the admin section must read from your json file created in section 2 and not from the database.

Commit all your code to bitbucket or github and share the repository url with us.