

Sicom PHP Developer Trainee/Junior

Test Task

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General Requirements

All code should be written using PSR-1 and PSR-2 code standards (see.

<https://www.php-fig.org/psr/psr-1/> and <https://www.php-fig.org/psr/psr-2/>)

1. Logical Part

1.1 An evil clown

The evil clown wants emoticons to have no more than one parenthesis in a row.

Write with PHP a function to help him with this.

1.2 Lucky Tickets

The ticket number consists of 6 numbers. The ticket is lucky if the sum of the first three numbers equals the sum of the next three numbers. Examples of such ticket numbers: 933591, 030300.

Write with PHP a function that returns all lucky numbers.

2. Arrays Part

2.1 Reverse string

Write with PHP a function with functionality like `strrev()`. You should NOT use standard PHP functions. You can use loops and other language constructions.

2.2 Words in text

Write with PHP a function `getWords(string $text)` that returns an associative array, where word is key, and value is how many times the word is in text. You need to normalize words (Word and word should be the same key, you can use `strtolower()` PHP function).

Text sample:

After several days of rain that nearly floods Derry, Maine, five-year-old Georgie Denbrough goes outside to play. He brings with him a paper boat his older brother, Bill, made for him while sick in bed. Georgie helps with the boat by retrieving a box of

paraffin from the shelves by the cellar stairs, even though the power is out and Georgie imagines a monster lives in the cellar. Bill melts the paraffin in a bowl, and the boys laugh and joke together while they smear the paraffin over the folded newspaper boat to waterproof it. Before Georgie goes out to play, he kisses Bill's cheek, and Bill tells Georgie to be careful.

Even though the rains have slackened, the gutters run with water. In his yellow hat and slicker, Georgie follows his boat as it sails along Witcham Street, wishing Bill could be with him to see it go because Georgie is not as good as Bill at telling stories about what he sees. A current takes the boat into a storm drain, and Georgie peeks inside to look for it.

In the drain Georgie sees a pair of yellow eyes. Scared, he begins to back away, but a voice speaks to him. Georgie looks back and sees a clown; the clown introduces himself as "Mr. Bob Gray, also known as Pennywise the Dancing Clown." Georgie at first thought the drain smelled like his scary cellar at home, but now he can smell a carnival. Pennywise has Georgie's boat in one hand and a balloon in the other; he offers Georgie both. When Georgie reaches forward, Pennywise grabs Georgie's arm and rips it off. Georgie dies immediately. Dave Gardner, arriving "only 45 seconds after the first scream," finds Georgie's body.

The sheriff tells reporters Georgie must have got his arm stuck in a fast current in the storm drain. Mrs. Denbrough is sedated in the local emergency room; Bill remains sick in bed, listening to his father weep in another room. The paper boat continues through the sewers to the Penobscot River and out to sea as the rain clouds break overhead.

2.3 Array Sum

Write with PHP a function that will return the sum of all array elements, the array can be a nested array (nesting can be 2 or more), You should NOT use standard PHP functions.

2.4 Mirror Letters

The Wizard decided to make a funny joke. He replaced all letters in words to their mirror letter (A will be replaced on Z, B on Y, etc.). Write with PHP a function to help the wizard

to make this joke real.

2.5 Unique words

Write with PHP a function `getUniqueWords(string $text)` that returns an array, with words which are used in text only one time. You need to normalize word (Word and word should be the same for function, you can use `strtolower()` PHP function).

3. OOP Part

3.1 Collection

Write a PHP class, which represents a Collection of data, where the object is key (See <https://www.php.net/manual/ru/class.splobjectstorage.php> for example). Class should contain these methods:

Method	Parameters	Return	Description
add	<i>object \$key</i> <i>mixed \$data = NULL</i>	-	Adds an object inside the storage, and optionally associate it to some data.
remove	<i>object \$key</i>	-	Removes the object from the storage.
getHash	<i>object \$object</i>	<i>string</i>	This method calculates an identifier for the objects. You should use any hash function
current		<i>object</i>	Return last added object
getObjectList		<i>array</i>	Return list of all added objects
check	<i>object \$object</i>	<i>boolean</i>	Function should return true if object exists in the collection, false - if not.
removeAll	<i>ObjectCollection \$collection</i>		Static method. Should remove all objects from collection \$collection

3.2 Zoo

Write PHP classes for Zoo entities (using Abstract Classes, Classes, Objects, Interfaces and Inheritance):

Animal, Fish, Insect, Cougar, Cat, Lion, Antilopa, Elephant, Shark, Dog, Wolf, Trout (It Can be Abstract Class, Class or Interface). Entities should be different between each other. You shouldn't copy-paste and use the DRY principle.