

ARPM: Laravel Backend Developer

Caution: AI-generated work will be identified and disqualified.

Task 1: Communication

- Generate a 10 x 52 table where each value is drawn from a standard uniform distribution.
- The 10 rows represent 10 individuals and the 52 columns represent 52 weeks (= one year)
- For each individual, compute the cumulative sums of the data across columns from inception until the given week
- Create and show in a google sheet the chart of such cumulative sums, namely 10 increasing lines. Label the axes "*Week*" and "*Cumulative sum*".
- Share the google sheet with the output for evaluation of this task.

Task 2: Eloquent

- Given the following [unoptimized Laravel code](#).
- How would you refactor it to improve its performance and efficiency, ensuring that the code is both optimized for database queries and maintains readability?
- Refactor the controller method, explain and suggest further improvements.
- Submit your code.

Task 3: Testing

- Visit this [SpreadsheetService](#) code sample
- Write a PHPUnit test class with suitable test cases for the **SpreadsheetService::processSpreadsheet** method.
- Submit your test code.

Task 4: Collections

- Visit this [data sample](#).
- Given the \$employees and \$offices arrays, write elegant code using collections to generate the \$output array.

Task 5: Q&A

- Answer the following questions

A) Explain this code:

```
Schedule::command( 'app:example-command' )  
    ->withoutOverlapping( )  
    ->hourly( )  
    ->onOneServer( )  
    ->runInBackground( );
```

B) What is the difference between the Context and Cache Facades? Provide examples to illustrate your explanation.

C) What's the difference between `$query->update()`, `$model->update()`, and `$model->updateQuietly()` in Laravel, and when would you use each?