Quality Attribute Assignment

1. Calculate a software availability quality attribute percentage where
   1. The software is down 2 hours per day.

availability percentage=

* 1. The software is down 24 hours per week.

availability percentage=

1. Identify the used security techniques for a [Laravel](https://laravel.com/) or [DevExpress XAF](https://www.devexpress.com/products/net/application_framework/) for the following items:
   1. Authentication

Laravel includes a User model in your app/models directory which may be used with the default Eloquent authentication driver. When building the Schema for this Model, the password field is a minimum of 60 characters.

* 1. Authorization.

To log a user into your application, Auth::attempt is used method.

if (Auth::attempt(array('email' => $email, 'password' => $password))) {

return Redirect::intended('dashboard');

}

* 1. Encryption.

Laravel provides facilities for strong AES encryption via the mcrypt PHP extension:

1) Encrypting A Value : $encrypted = Crypt::encrypt('secret');

2) Decrypting A Value : $decrypted = Crypt::decrypt($encryptedValue);

3) Setting The Cipher & Mode :

Crypt::setMode('ctr');

Crypt::setCipher($cipher);

1. Calculate the estimated performance throughput of a software where:
   1. The average data per order in 1000 byte.
   2. The upload bandwidth of the server is 1 mbps.

throughput=

1. Calculate the estimated performance response time of a software where:
   1. The average data per screen in 500 byte.
   2. The average number of users in 200.
   3. The download bandwidth of the server is 1 mbps.

Tresponse = n/r - Tthink

= (200/ ((500x8)/1)) - 3

= -2.95

1. Regarding question number 4, how many server you need to add to your system in order to reduce response time to 1 sec.

* Justify you answers with required calculation and submit your answers at in your github host.
* We will pick up randomly 5 students next session to present their answers.