

**UNIVERSIDAD MAYOR REAL Y PONTIFICIA
DE SAN FRANCISCO XAVIER DE CHUQUISACA
FACULTAD DE CIENCIAS Y TECNOLOGÍA**



PRÁCTICA 7

CARRERA: INGENIERÍA DE SISTEMAS

MATERIA: MICROSERVICIOS (COM600)

DOCENTE: ING. CARLOS MONTELLANO

UNIVERSITARIOS: TORRES LOAYZA ALBERTO ANTONIO

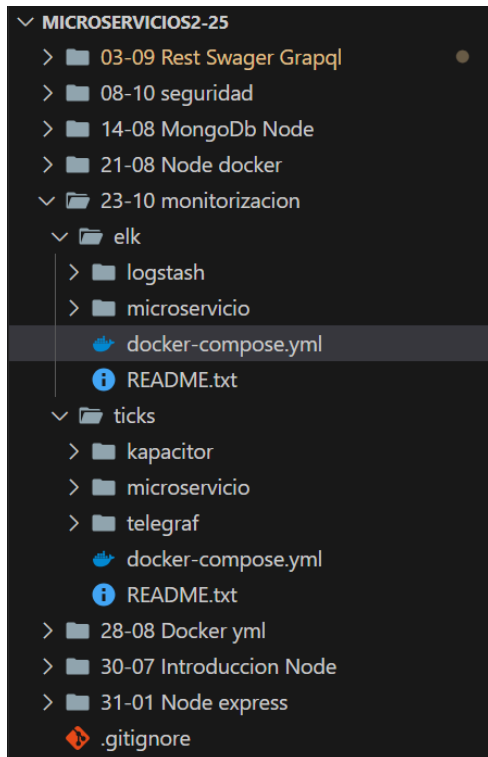
FECHA: 23/10/2025

GESTIÓN: 2/2025

SUCRE – BOLIVIA

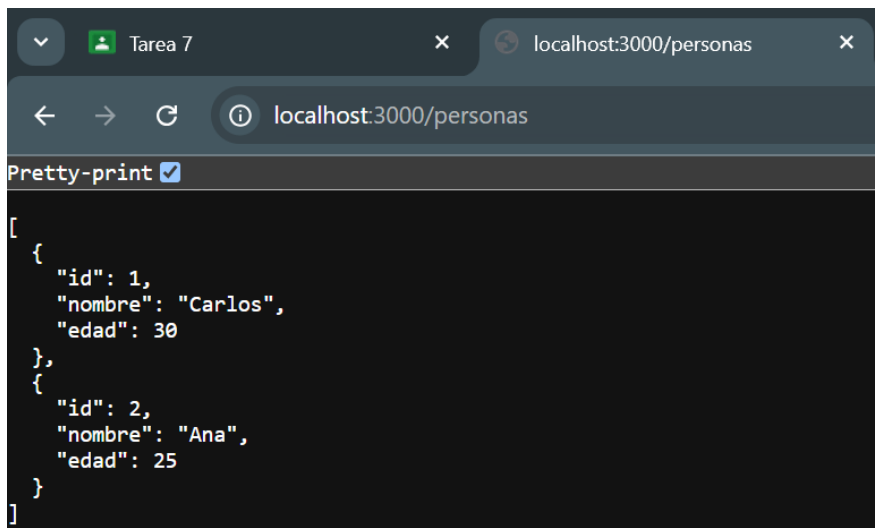
I. Monitoreo de un microservicio con Stack ELK

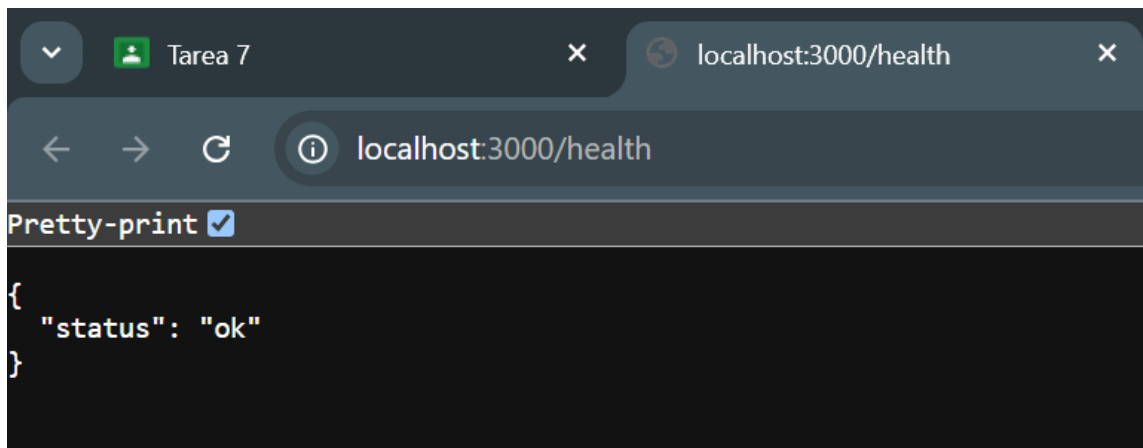
2. Preparación del entorno



<input type="checkbox"/>	<input checked="" type="checkbox"/>	elk	-	-	-	6.02%	3	⚙	🔵	⋮	🗑
<input type="checkbox"/>	<input checked="" type="checkbox"/>	logstash	23cad8faec3	logstash/lo	5044:5044	2.52%	1	⚙	🔵	⋮	🗑
<input type="checkbox"/>	<input checked="" type="checkbox"/>	kibana	c1d3584f0343	kibana/kib	5601:5601	2.26%	6	⚙	🔵	⋮	🗑
<input type="checkbox"/>	<input checked="" type="checkbox"/>	elasticsearch	6fee7db888eb	elasticsearch	9200:9200	1.24%	1	⚙	🔵	⋮	🗑
<input type="checkbox"/>	<input checked="" type="checkbox"/>	microservicio	e677a7f86ea6	elk-microse	3000:3000	0%	3	⚙	🔵	⋮	🗑

3. Verificación inicial

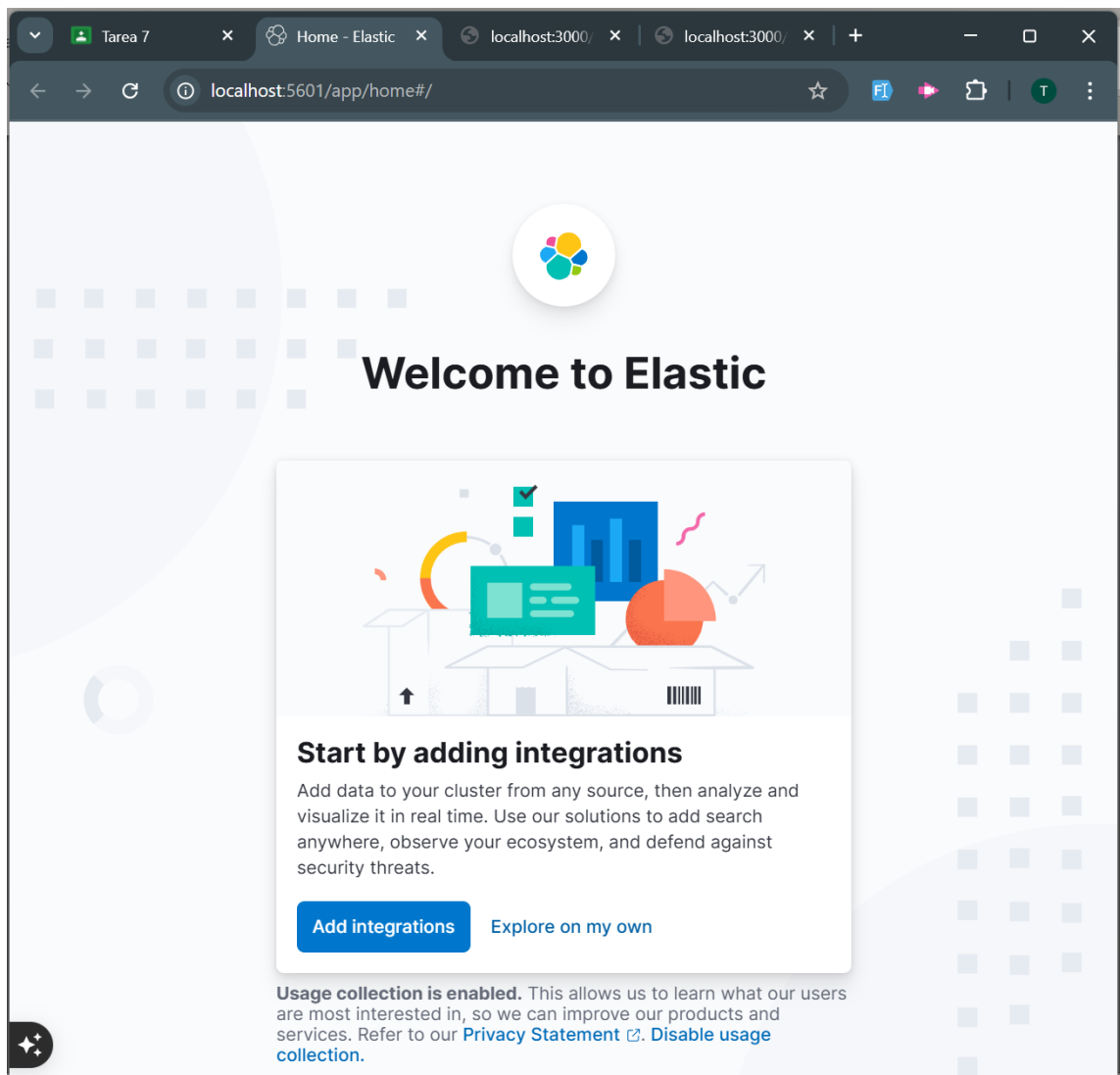




A screenshot of a web browser window. The address bar shows 'localhost:3000/health'. The page content displays a JSON response:

```
{  "status": "ok"}
```

. A 'Pretty-print' checkbox is checked.



5. Generación de logs

Generar peticiones correctas

```
Windows PowerShell
Copyright (C) Microsoft Corporation. Todos los derechos reservados.

Instale la versión más reciente de PowerShell para obtener nuevas características y mejoras. https://aka.ms/PSWindows

PS C:\Users\Alberto Torrez L> curl http://localhost:3000/personas

StatusCode      : 200
StatusDescription : OK
Content         : [{"id":1,"nombre":"Carlos","edad":30},{id":2,"nombre":"Ana","edad":25}]
RawContent      : HTTP/1.1 200 OK
                  Connection: keep-alive
                  Keep-Alive: timeout=5
                  Content-Length: 72
                  Content-Type: application/json; charset=utf-8
                  Date: Thu, 23 Oct 2025 19:19:44 GMT
                  ETag: W/"48-nTHSq+NJBWzBbZPLY3Mk..."
Forms           : {}
Headers         : {[Connection, keep-alive], [Keep-Alive, timeout=5], [Content-Length, 72], [Content-Type, application/json; charset=utf-8]...}
Images          : {}
InputFields     : {}
Links           : {}
ParsedHtml      : mshhtml.HTMLDocumentClass
RawContentLength : 72
```

Generar un error simulado

```
PS C:\Users\Alberto Torrez L> curl http://localhost:3000/error
curl : Cannot GET /error
En línea: 1 Carácter: 1
+ curl http://localhost:3000/error
+ ~~~~~
+ CategoryInfo          : InvalidOperation: (System.Net.HttpWebRequest:HttpWebRequest) [Invoke-WebRequest], WebExc
  eption
+ FullyQualifiedErrorId : WebCmdletWebResponseException,Microsoft.PowerShell.Commands.InvokeWebRequestCommand
PS C:\Users\Alberto Torrez L> |
```

6. Visualización en Kibana

Create data view

Name

Index pattern

Timestamp field

@timestamp

Select a timestamp field for use with the global time filter.

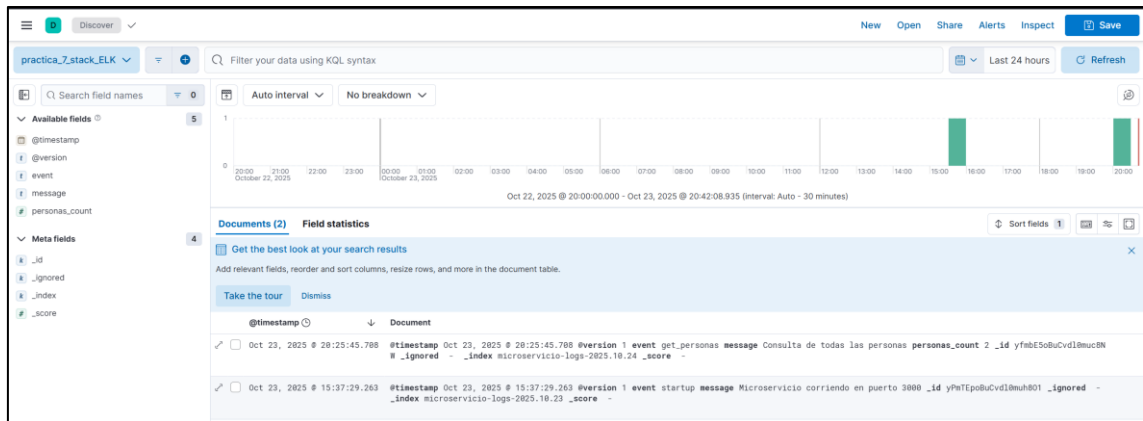
[Show advanced settings](#)

[Close](#) [Save data view to Kibana](#)

✓ Your index pattern matches 1 source.

All sources	Matching sources
microservicio-logs-2025.10.23	Index

Rows per page: 10

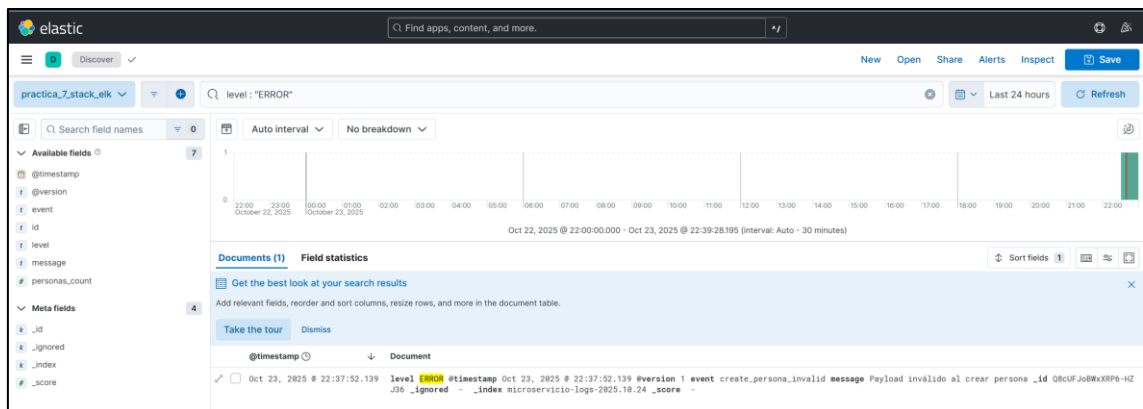


The screenshot shows the Elastic Stack interface for a data view named 'practica_7_stack_ELK'. The index pattern is 'microservicio-*' and the time field is '@timestamp'. The interface displays a table of fields.

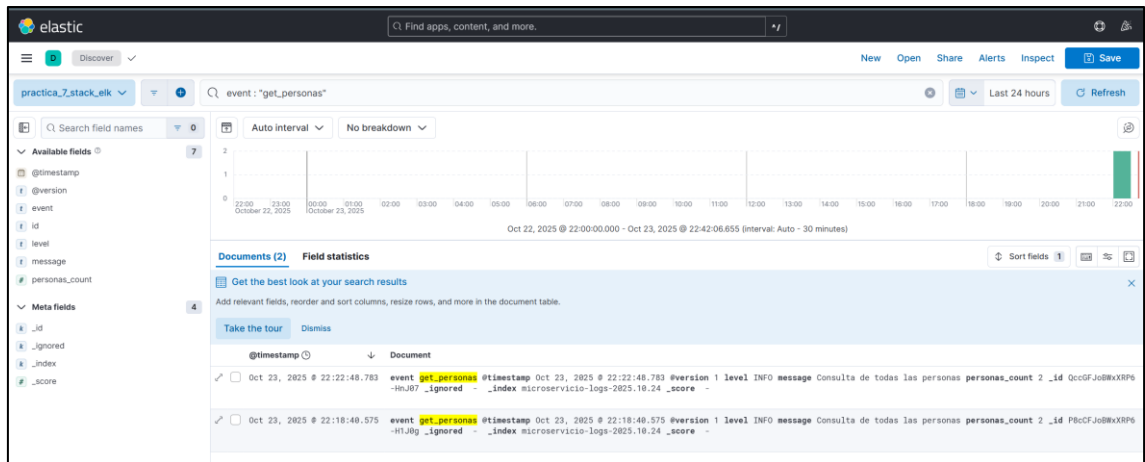
Name	Type	Format	Searchable	Aggregatable	Excluded
@timestamp	date		•	•	
@version	text		•		
@version.keyword	keyword		•	•	
_id	keyword		•		
_ignored	keyword		•	•	
_index	keyword		•	•	
_score	float				
_source	text				
event	text		•		
event.keyword	keyword		•	•	

7. Análisis y monitoreo

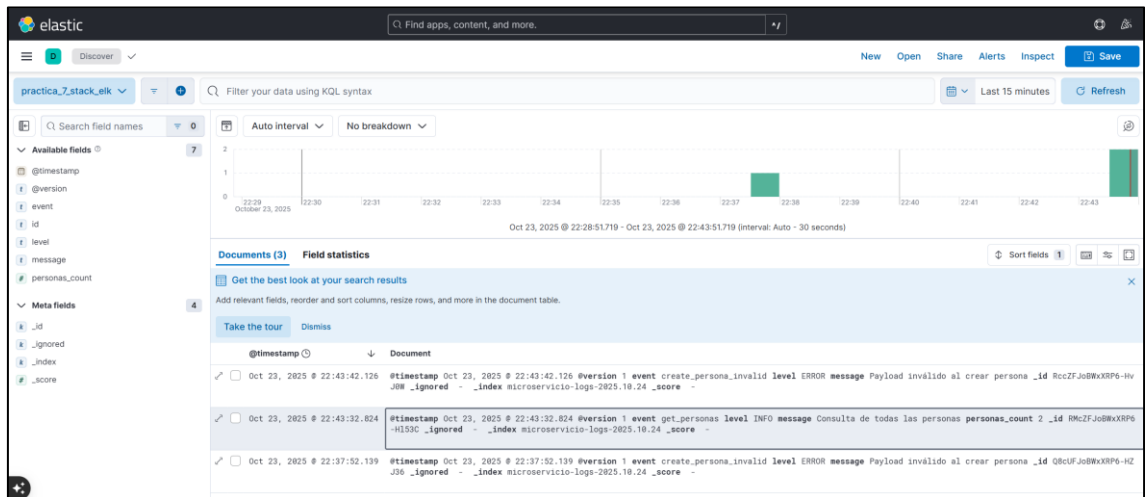
Ejercicio 1 — Filtrado de errores



Ejercicio 2 — Búsqueda por endpoint

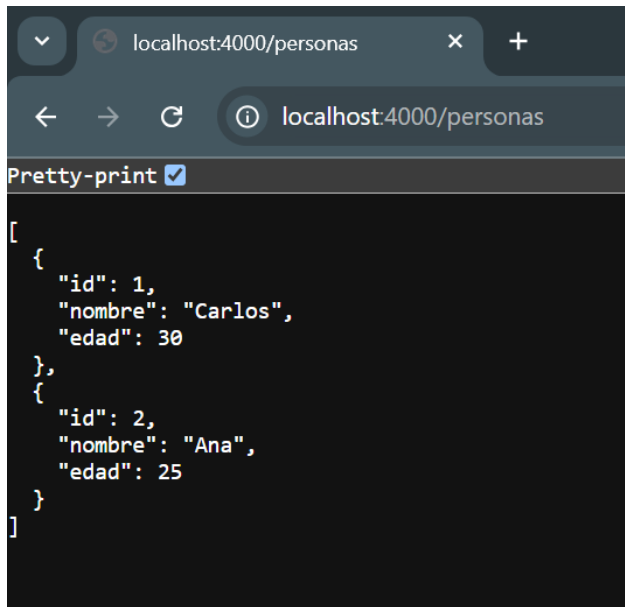


Ejercicio 3 — Análisis temporal

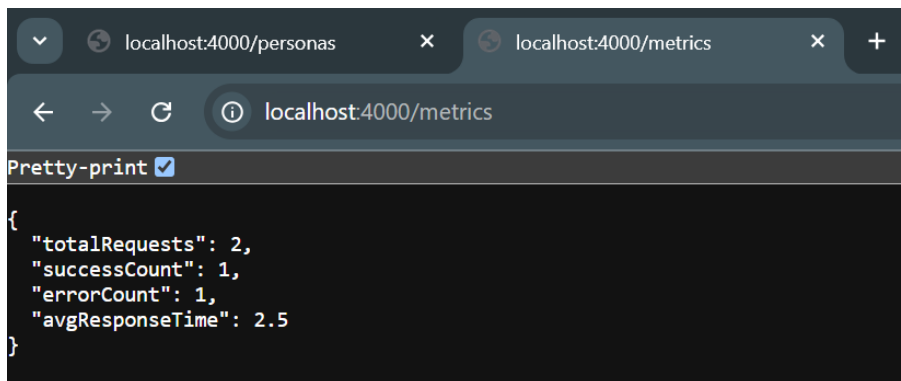


II. Monitoreo de un microservicio con Stack TICKS

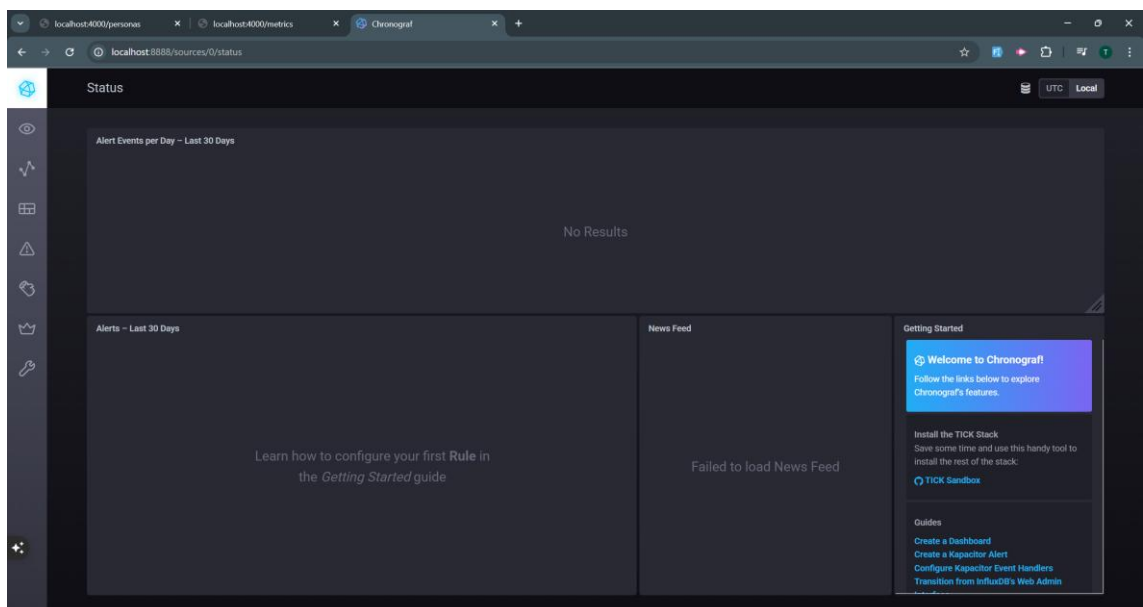
3. Verificación inicial



```
[
  {
    "id": 1,
    "nombre": "Carlos",
    "edad": 30
  },
  {
    "id": 2,
    "nombre": "Ana",
    "edad": 25
  }
]
```



```
{
  "totalRequests": 2,
  "successCount": 1,
  "errorCount": 1,
  "avgResponseTime": 2.5
}
```



6. Simulación de actividad

Solicitudes normales

curl http://localhost:4000/personas

```
AlbertoTorres@DESKTOP-PDA4NTQ MINGW64 ~
$ curl http://localhost:4000/personas
% Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
           Dload  Upload   Total     Spent    Left     Speed
100    72    100    72    0    0    4673    0 --:--:-- --:--:-- --:--:-- 4800[{"id":1,"nombre":"Carlos","edad":30},{ "id":2,"nombre":"Ana","edad":25}]
```

Generar errores (simula fallos)

curl http://localhost:4000/error

curl http://localhost:4000/error

curl http://localhost:4000/error

curl <http://localhost:4000/error>

```
MINGW64/c/Users/Alberto Torrez L
AlbertoTorres@DESKTOP-PDA4NTQ MINGW64 ~
$ curl http://localhost:4000/error
curl http://localhost:4000/error
curl http://localhost:4000/error
curl http://localhost:4000/error
% Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
           Dload  Upload   Total     Spent    Left     Speed
100    144    100    144    0    0    38772    0 --:--:-- --:--:-- --:--:-- 48000<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8">
<title>Error</title>
</head>
<body>
<pre>Cannot GET /error</pre>
</body>
</html>

% Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
           Dload  Upload   Total     Spent    Left     Speed
100    144    100    144    0    0    35520    0 --:--:-- --:--:-- --:--:-- 36000<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8">
<title>Error</title>
</head>
<body>
<pre>Cannot GET /error</pre>
</body>
</html>

% Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
           Dload  Upload   Total     Spent    Left     Speed
100    144    100    144    0    0    33676    0 --:--:-- --:--:-- --:--:-- 36000<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8">
<title>Error</title>
</head>
<body>
<pre>Cannot GET /error</pre>
</body>
</html>

% Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
           Dload  Upload   Total     Spent    Left     Speed
100    144    100    144    0    0    36548    0 --:--:~ --:~:~ --:~:~ 48000<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8">
<title>Error</title>
</head>
<body>
<pre>Cannot GET /error</pre>
</body>
</html>
```