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Simple Java Web Server (February 2020)

I. Introduction

A web server is a program whose primary function is to store, process and deliver web pages (most frequently html documents, which can include text, images, style sheets and scripts). This communication between client and server is achieved using the Hypertext Transfer Protocol. This document will describe the architecture, the implementation and associated tests of a simple web server capable of delivering html documents and PNG images.

II. Server Architecture

This project is comprised of four main components. A set of handlers, the annotations, the web apps and the server itself. A more detailed description of each of these components is shown below.

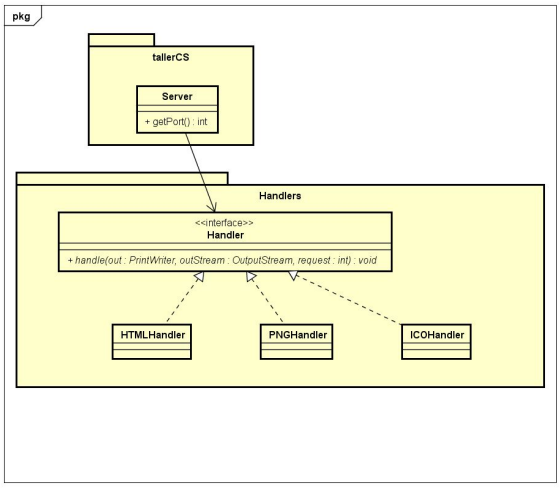

Figure 1. Diagram describing the project's architecture

Server: The server is in charge of receiving and responding to client requests (opening/closing sockets and forming http responses) and mapping every resource to its respective handler.

Handlers: This component stores the handlers for each type of resource that the framework supports. Each handler is in charge of generating the desired response according to the requested resource.

III. Deployment architecture

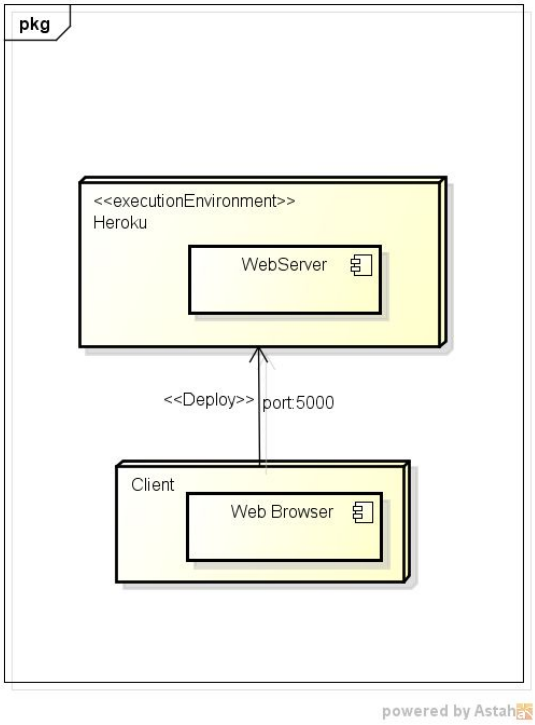

Figure 2. Diagram describing how the project is deployed

The project is deployed in Heroku and can be seen at https://cliente-servidor-dcifuentes.herokuapp.com/

IV. Tests

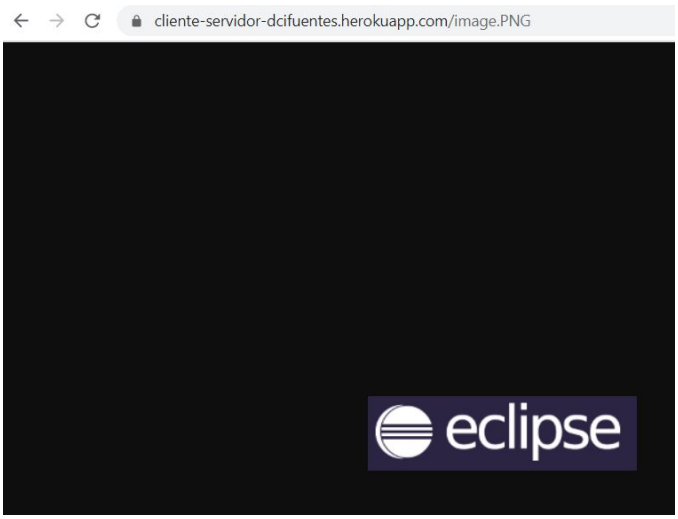

Figure 3. Requesting an image from the server

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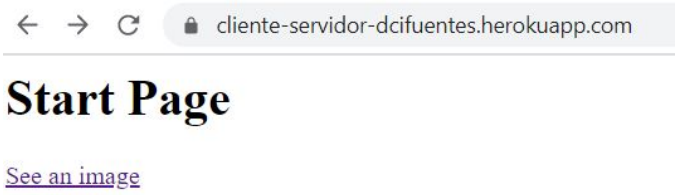

Figure 4. The index.html of the sample web application

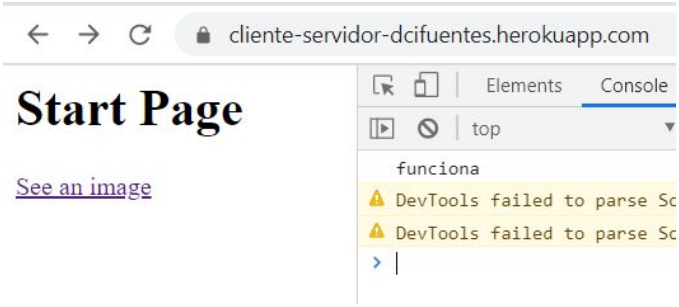

Figure 5. JavaScript running from the server