

# HTTP Server Final Project Documentation

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Course: Basics of Programming II (BMEVIAUAA01)

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## Introduction

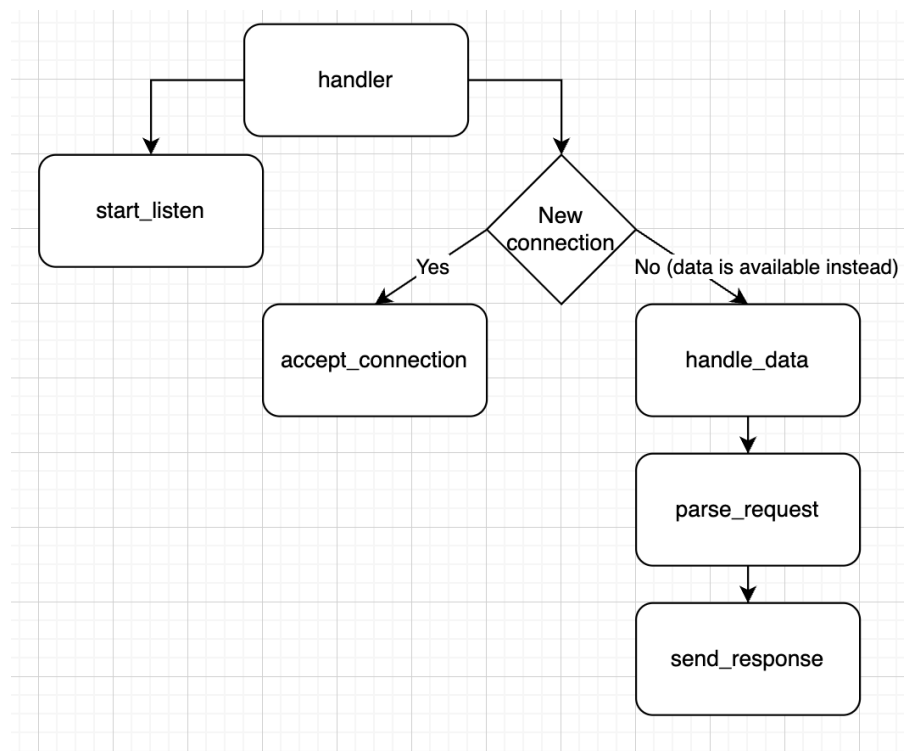
The goal of this project was to create an HTTP Server to serve static websites. I intended it to be a proof of concept, as a learning opportunity not as a production-ready software.

## Program Interface

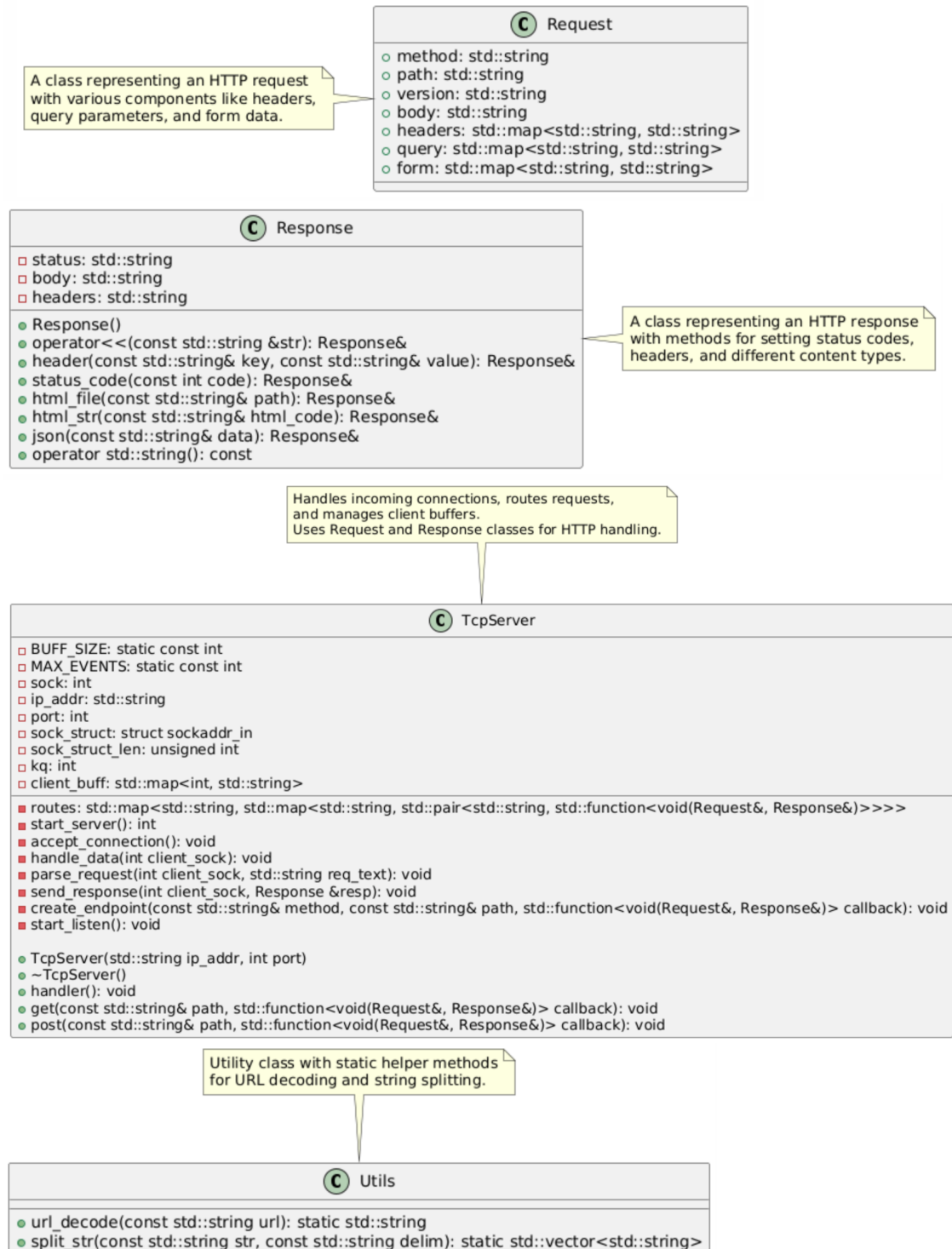
Makefile is currently written for MacOS and the current implementation only works on MacOS/FreeBSD because it uses kqueue.

```
foo@bar:~$ make
foo@bar:~$ ./bin/main
```

## Program Execution



## Program Structure



### Input and Output

The program uses the given resource files (html, css, images, etc...) as input files. Output is only for debugging purposes.

### Improvements and Extensions

Pipeline for multi-use connections, HTTPS support, cookies, caching, multithreading and proper error handling could be things that I implement next.

### Difficulties Encountered

Time crunch was the main issue for me this time. Understanding and implementing kqueue was quite complex as well.

### References

<https://itsfuad.medium.com/understanding-http-at-a-low-level-a-developers-guide-with-c-213728d6c41d>

[https://medium.com/@ryan\\_forrester\\_/understanding-is-open-in-c-a-comprehensive-guide-a8e8f6b731ef](https://medium.com/@ryan_forrester_/understanding-is-open-in-c-a-comprehensive-guide-a8e8f6b731ef)

<https://www.udacity.com/blog/2021/05/how-to-read-from-a-file-in-cpp.html>

[https://www.w3schools.com/tags/ref\\_urlencode.ASP](https://www.w3schools.com/tags/ref_urlencode.ASP)

<https://stackoverflow.com/questions/14265581/parse-split-a-string-in-c-using-string-delimiter-standard-c>