

# Open-Source Report: TCP Connections

Proof of knowing your stuff in CSE312

## Guidelines

Provided below is a template you must use to write your reports for your project.

Here are some things to note when working on your report, specifically about the **General Information & Licensing** section for each technology.

- **Code Repository:** Please link the code and not the documentation. If you'd like to refer to the documentation in the **Magic** section, you're more than welcome to, but we need to see the code you're referring to as well.
- **License Type:** Three letter acronym is fine.
- **License Description:** No need for the entire license here, just what separates it from the rest.
- **License Restrictions:** What can you *not* do as a result of using this technology in your project? Some licenses prevent you from using the project for commercial use, for example.

Also, feel free to extend the cell of any section if you feel you need more room.

If there's anything we can clarify, please don't hesitate to reach out! You can reach us using the methods outlined on the course website or see us during our office hours.

## Flask / Python

### General Information & Licensing

Code Repository	<a href="https://github.com/pallets/flask">https://github.com/pallets/flask</a>
License Type	BSD 3-Clause License
License Description	<ul style="list-style-type: none"><li>• Redistribution: The license allows for the redistribution of both source code and binary forms of the software, as long as certain conditions are met. The conditions include preserving the copyright notice, disclaimer, and other attribution notices.</li><li>• Modification: The license permits modification of the</li></ul>

	<p>software, allowing users to create derivative works. However, it requires that any modified files must include the original copyright notice and disclaimer.</p> <ul style="list-style-type: none"> <li>● Use: The license grants users the right to use the software for any purpose, including commercial use.</li> </ul>
License Restrictions	<ul style="list-style-type: none"> <li>● Redistribution: If you redistribute the software, you must include the original copyright notice, disclaimer, and other attribution notices in all copies of the software.</li> <li>● Modification: If you modify the software, you must include the original copyright notice, disclaimer, and other attribution notices in all modified files.</li> <li>● Endorsement: The license does not allow you to use the name of the original author or contributors to endorse or promote products derived from the software without their explicit permission.</li> </ul>

TCP (Transmission Control Protocol) is a protocol used for reliable data transmission over the internet. When a TCP socket is created, the first step is the establishment of a connection between the two endpoints. This is done using a three-way handshake. Once the connection is established, the two endpoints can begin exchanging data. The data is transmitted in segments, with each segment containing a sequence number that identifies the position of the data in the overall message being transmitted. The segments are sent from one endpoint to the other, with the receiving endpoint acknowledging each segment as it arrives. Overall, TCP provides a reliable, efficient way for two endpoints to exchange data over the internet.

1. The line 139 of the flask library in templating.py  
<https://github.com/pallets/flask/blob/6931b252935188744415b301ab2e3d3bd5ee5498/src/flask/templating.py#L139> It's used to render a Jinja2 template with the given context data.
2. The line 1720 of the flask library in app.py  
<https://github.com/pallets/flask/blob/6931b252935188744415b301ab2e3d3bd5ee5498/src/flask/app.py#L1720> It creates a Response object with a 302 status code and a Location header that specifies the new URL.
3. The line 1734 of the flask library in app.py  
<https://github.com/pallets/flask/blob/6931b252935188744415b301ab2e3d3bd5ee5498/src/flask/app.py#L1734> It provides a convenient way to create a Response object
4. The line 1595 of the flask library in app.py  
<https://github.com/pallets/flask/blob/6931b252935188744415b301ab2e3d3bd5ee5498/src/flask/app.py#L1595> It's used to generate a URL for a given view function.
5. The line 2225 of the flask library in app.py  
<https://github.com/pallets/flask/blob/6931b252935188744415b301ab2e3d3bd5ee5498/src/flask/app.py#L2225> It's the entry point for handling HTTP requests.
6. The line 884 of the werkzeug library in serving.py  
<https://github.com/pallets/werkzeug/blob/45c1e774eb77a91b6de2c1923c77d7c7aceaf946/src/werkzeug/serving.py#L884> It's used to create a WSGI server instance that can be used to serve a Flask application or any other WSGI-compatible application.
7. The line 241 of the werkzeug library in serving.py  
<https://github.com/pallets/werkzeug/blob/45c1e774eb77a91b6de2c1923c77d7c7aceaf946/src/werkzeug/serving.py#L241> It's used to run a Flask application as a WSGI server.

