**ITWS 2110 Web Systems**

**Quiz 1 Fall 2025**

1. Describe how HTML fits into the broader ecosystem of a website. Contrast the fundamental role of HTML with the primary roles of CSS and JavaScript. (5 points)

HTML fits into the broader ecosystem of a website by providing the organization and backbone of the data on the site, whereas CSS provides the styling and presentation of the data, and JavaScript allows for dynamic animation and manipulation of the data.

1. Explain the difference between HTML structure and HTML semantics. Why is writing semantic HTML considered a best practice? Provide one example of a semantic HTML element and one example of a non-semantic element. (10 points)

The difference between HTML structure and HTML semantics is that HTML structure is like the building blocks of a website giving the arrangement and order, but HTML semantics provide meaning to those building blocks such as in the larger context of the site. This is considered the best practice because one of the major points for websites is accessibility and it helps browsers when we give more meaning to sections as then they can customize and improve the experience for people with disabilities. For instance, one example of a semantic element vs non-semantic element in HTML could be like “<footer>” vs “<div>”, where footers clearly give meaning that it possibly contains navigation and contact information for a site, where a div provides no context whatsoever.

1. What is the "three-tier model" (also known as three-tier architecture) in web systems? Briefly describe the function and responsibility of each of the three tiers. (15 points)

The three-tier model in web systems refers to how web applications get organized, and the three tiers are Presentation, Application, and Data. Essentially all three of these tiers are interrelated, where presentation represents the front-end ui/ux which runs in the browser, application is the server/side logic connected front-end to back-end, and data is the database and the data within the database.

1. Explain what is meant by a Universal Interface in a REST API. (5 points)

Universal interface in a REST API basically refers to the standard rules servers and clients send data and talk with each other. For instance, some examples of these conventions are the standard HTTP methods like GET and POST, the standard data formats like JSON/XML and the resource-based URLs and more.

1. Explain how your browser chooses which CSS rule to apply to a tag in the case where there are multiple rules that could apply. (15 points)

The browser determines which CSS rules apply in this case by origin, specificity, and importance. For instance, depending on where your styling is located, it has higher priority, as inline styles are weighed more than author stylesheets and those are weighed more than browser defaulted stylesheets. We also have specificity as certain selectors have more weight, as shown when we see inline styles > ids > classes > elements. Finally, there’s importance and this relates to how items lower on the stylesheet are prioritized and that there are also keywords like !important that will override all other styles.