**Applied Technical Systems   
JavaScript / Web Application Developer Applicant  
Code Sample Questions**

**The problems below will help us gauge both your practical and conceptual planning experience. When complete, forward to** [**matt.linkemyer@atsid.com**](mailto:matt.linkemyer@atsid.com) **for review and CC** [**heather.slusher@atsid.com**](mailto:heather.slusher@atsid.com)

**Problem #1**

What is the value of “index” when it is returned by this function? Explain your answer.

function jsTest() {

var index = 0;

var counter = 0;

var obj = {};

obj.index = index;

var func = function () {

for (index = 0; index < 10; index++) {

counter += 2;

}

obj.index++;

};

obj.func = func;

this.index++;

return index;

}

**Problem #2**

Implement an efficient algorithm to find values in a sorted list. E.g., if I have a large list of integers and want to find the value 345, the algorithm should return either the index of the value in the list, or -1 if it is not present.

**Problem #3**

Implement a Set data structure, including an “add” and “intersect” method.

**Problem #4**

Given the function below, complete the implementation to display the data in a table on an HTML page. What are the performance implications for your solution in the browser DOM?

function jsonTable() {  
 var data = {  
 headers: ["First Name", "Last Name", "Age"],  
 rows: [  
 ["John", "Doe", 30],  
 ["Jane", "Doe", 27],  
 ["Mac", "Smith", 52]  
 ]  
 };

var container = document.getElementById("tableContainer");

//add code here to build a table in the container

}