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CS 441 Software Engineering

**JavaScript Study Guide Questions**

1. *Is JavaScript similar to Java?*
   1. No. JavaScript has dynamic types, functions being passed around as values, functions defined within functions, and many other dynamic features that Java lacks. Java is an Object-Oriented language while JavaScript seems to be a mixture functional, prodedural, and object-oriented.
2. *How many bits does JavaScript use to store a single number value?*
   1. 64 bits (a Java long)
3. *Does JavaScript permit the following string assignments?*
   1. Var msg1 = ‘Is “this” a legal string in JavaScript?’;
      1. Yes. Seems to work fine.
   2. Var msg2 = “Is ‘this’ a legal string in JavaScript?”;
      1. Yes. Seems to work fine.
4. *What does the typeof operatore do?*
   1. Similar to instanceof operator in Java, it will return the type of its operand. Typeof NaN returns undefined because NaN is not defined as any one value.
5. *What is type coercion?*
   1. Type coercion occurs when a variable needs to “act” like another type for the purposes of an expression, i.e. when a floating point number and an integer are added together, the integer will be coerced into a floating point.
6. *What does the ==== operator do?*
   1. A quadruple equals operator does not exist in Java, but a triple equals does.
7. *What is the keyword to declare a variable in JavaScript*?
   1. Var
8. *What is an environment*?
   1. An environment is the collection of system and programmer defined variables and values that exist at any given time in the execution of the program for that program to use.
9. True.
10. *Can a variable hold a function definition*?
    1. Yes.
    2. Var fact = function(arg) {

If (arg == 1)

Return 1;

Else

Return arg \* fact(arg – 1);

};

1. *What is lexical scoping?*
   1. Functions can access variables that have been defined in their enclosing scopes.
2. *Does a new curly-brace block create a new scope in JavaScript?*
   1. Curly-braces by themselves do not create a new scope. They do, however, if they are part of a function definition.
3. *What keyword is used to define a function?*
   1. Function
4. *JavaScript treats functions as values. Give your own example of the impact of this.*
   1. You can pass around API’s as objects, whose properties are functions, instead of having to make calls to remote API’s (security concerns aside). OR, you can create customizable API’s that contain functions with some missing functionality that is filled in by users who pass in their own functions as arguments.
5. *What operator may be used to determine if “Buffalo” comes alphabetically before “Aqua”?*
   1. If the strings are string primitives instead of String objects, the usual ‘<’ operator can be used.
6. *Does JavaScript enforce any definition order rules for functions?*
   1. No. Functions can be defined at the top of the program, middle, bottom, etc.
7. *Are optional arguments allowed in JavaScript?*
   1. Yes. You can pass in fewer arguments to a function than its signature calls for. Use the arguments object to get the number of arguments passed in.
8. *Can one pass a function to another function in JavaScript?*
   1. Absolutely. Functions are values that can be passed in as arguments like any other.
9. *What is a closure?*
   1. A closure is a function that encloses its local variables, and the local variables are maintained when the function is passed around as a value.