

# Assignment 12

## Programming Languages

1. [30 pts, out of bounds exception]
  - (a.) Consider the programming languages C, Java and Python and describe/speculate their capabilities about array index out of bounds check.
  - (b.) In this regard, does C have an advantage over Java/Python?
  - (c.) Fill the following table regarding an array index out of bounds check:

Can generate an exception/error	C	Java	Python
Compile-time			
Run-time			

2. [50 pts, Java exceptions] Consider the following Java program:

```
class FunExceptions {
    public int fun1(String arg) {
        try {
            int num = 121/Integer.parseInt(arg);
            System.out.println(num);
//            return num; // line 6
        }
        catch(ArithmeticException e){
            System.out.println("Number should not be divided by zero");
//            return -1; // line 10
        }
        finally {
            System.out.println("Finally, clear created buffers, close file
handles, etc.");
//            return -2; // line 14
        }
        System.out.println("Completed tricky math operation.");
        return 0; // line 17
    }
    public static void main(String args[]) {
        FunExceptions fe = new FunExceptions();
        System.out.println("Result: " + fe.fun1(args[0]));
    }
}
```

Compile/run it with/without an argument. Try different arguments (e.g. "1", "1..1", etc.). Comment/out the returns on lines 6, 10, 14, 17. In detail and with all possible combinations, describe your observations, reasons, explanations for the behavior of the program.

3. [20 pts, ML exceptions]  
Compare and contrast exception-handling capabilities of ML and Java.

