

Scripting Languages G22.3033-002 Summer 2008

Example solutions for hw09

Assigned Th 7/17/2008, due Mo 7/28 at 9pm. 50 points.

<http://www.cs.nyu.edu/courses/summer08/G22.3033-002/>

Instructions for example solutions

These are example solutions. Please keep in mind that often, there is not just one correct solution to a question. If you come up with different answers, then it may be that both your answers and these answers here are correct. Of course, these answers here may also contain mistakes. If you spot a mistake, please let me know so I can correct it.

Example solutions for Homework 9

solutions-hw09-1 Scientific Method

a.

```
initial input:
2 1 3
0 1 1
4 1 2
expected output:
2 1 3
0 1 1
4 1 2
2 1 2
actual output:
2 1 3
0 1 1
4 1 2
1 1 2
```

b.

```
1 Hypothesis  compute_avg returns wrong value
               (expected value would be 2 1 2)
  Experiment  perl -wd script.pl
               b 17
               c
               p @result
  Observation 1 1 2
  Conclusion  @result is wrong, hypothesis verified
2 Hypothesis  at Line 15, numerator $sums[0] is wrong;
               (expected value would be 2+0+4 == 6)
  Experiment  perl -wd script.pl
               b 15
               c
               p $i, " ", $sums[$i]
```

```

Observation 0 2
Conclusion $i == 0 and $sums[$i] == 2 != 6
           $sums[0] is wrong, hypothesis verified
3 Hypothesis Line 10 adds the wrong numbers into $sums[0]
           (expected 3 iterations with $j==0, values 2 0 4)
Experiment perl -wd script.pl
           a 10 print "==> " . $row->[$j] . "\n" if $j==0;
           c
Observation ==> 2
           ==> 0
           Debugged program terminated.
Conclusion Line 10 adds the correct values from the first two
           rows, but is missing the value from the third row.
4 Hypothesis the outer loop iterates for the wrong number of rows
           (expected $nrows would be 3)
Experiment perl -wd script.pl
           b 7
           c
           p $nrows
Observation 2
Conclusion $nrows == 2, but should be == 3
5 Hypothesis the defect is in Line 6, since $#_ gives the index
           of the last element, but we want the size, which is
           one larger
Experiment change Line 6 to:
           my $nrows = @_;
           then rerun script
Observation expected output and actual output are identical
Conclusion done, the bug is fixed

```

solutions-hw09-3 Delta Debugging

No example solutions.