The University of the South Pacific

School of Computing, Information & Mathematical Sciences

CS214 Design & Analysis of Algorithms

Lab Week 4

This tutorial computes the complexity of a given algorithm.

Question 1. (Complexity analysis)

Complete Q2 of week 3.

Question 2. (Complexity analysis)

A. Find the best, worst and average time complexity of following code:

```
int a = 0;
for (i = 0; i < N; i++) {
   for (j = N; j > i; j--) {
      a = a + i + j;
   }
}
```

B. Find the Big O order of following code.

```
int i, j, k = 0;
for (i = n / 2; i <= n; i++) {
   for (j = 2; j <= n; j = j * 2) {
      k = k + n / 2;
   }
}
```

Question 3. (complexity analysis)

Update Question 3 from the previous lab to incorporate operation counts instead of CPU time. Display the results graphically.

Question 4. (Assignment clarifications)

By now you should have read your assignment carefully. Have a discussion with your other team members and clarify any doubts with your tutor.

- A. Sharma