SYSC 4101 Lab 2

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4. No, none of the test suites that I created exercise the path 9, 10, 13, 14, 15, 16, 17, 18, 19. TestSuite2 was the closest with input 2, but it cannot execute correctly because line 47 checks if the large_candidate is <= n. The way the program is written, large_candidate will always be 1 and any input that is lower than 2 finishes the program early, thereby printing 18 and this correct path impossible.

5. Yes, the path 9, 10, 13, 14, 15, 16, 17, 19 is possible. It can be done by using TestSuite2 and the inputs 2 and 3. 4 however, does not work. This is because on line 37 when you bit shift 2 (10) and 3 (11) to the right by 2, 10 becomes 00 and 11 becomes 00 as well, making them both 0. This makes the while loop statement false because both are 0. Whereas 4 (100) bit shifted 2 to the right is 01, making the program enter the while loop and print 11, ruining the path.