

Preview Lab: Integer Square Root

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Please answer the following questions BEFORE watching the lecture. Submit your answers on the course discussion forum. Don't spend more than 3/4 of an hour on this.

After you submit your answer, please post comments on at least one other answer.

You are testing a program that includes an Integer Square Root function. The function reads a 32-bit word that is stored in memory, interprets the contents as an unsigned integer and then computes the square root of the integer, as a floating point number.

1. What values can you input to this function?
2. Can you imagine any invalid inputs to this function, inputs that should cause the function to return an error message?
3. If you were to test ALL of the inputs to this function, how many tests would there be?
4. How long do you think it would take you to run all these tests?
5. How would you test this function? Describe your thinking about your possible test strategies.
6. Would you add more tests if this function was in a life-critical program and you wanted to be sure it had no bugs? How many more tests? Which ones? Why these?
7. If the program computed the square root of 4 and reported 1.9999999999999999, would that be a passing result or a failure? How close would the answer have to be to 2.0 for the result to be a pass? Why?
8. Have you ever done this type of testing? If so, when? Please describe your experience.
9. Have you ever used tools that would do this type of testing? If so, what tools? How would you use them for this task?