CPE 187L Embedded Systems Design

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Section #2

Lab 5 Report

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Introduction

The purpose of this lab is to write software that involves functions, parameters, and if-then conditions. I will use C coding to write these conditions.

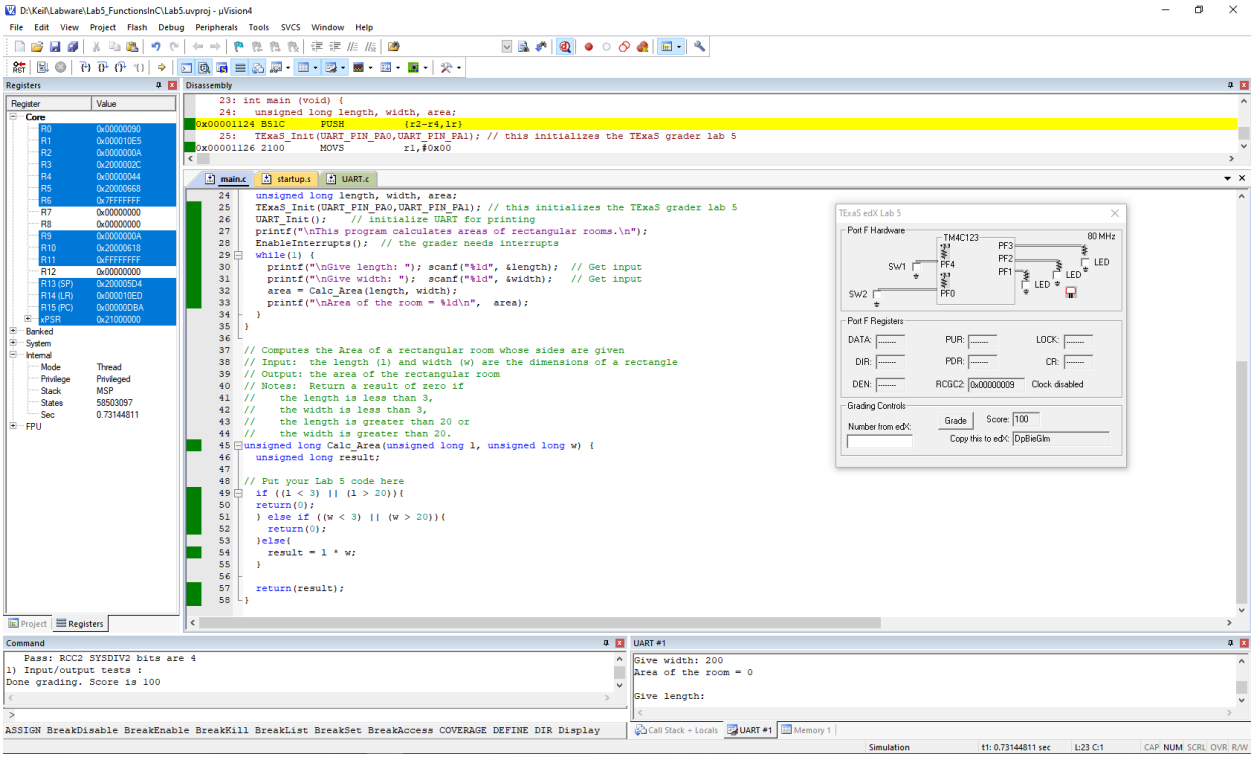
The first step is to write a function called Calc_Area. This function will calculate the area of a rectangle by taking two scanf inputs and multiplying them together. It will then output tot the display using printf. The function has a parameter though. We will calculate the area only if both the length and width are between 3 and 20 inclusively. Otherwise a result of zero will be displayed.

The second step will be to run it on the real board. The board doesn't actually take inputs so we will use TExaSdisplay application to show our print statements and input our scan parameters.

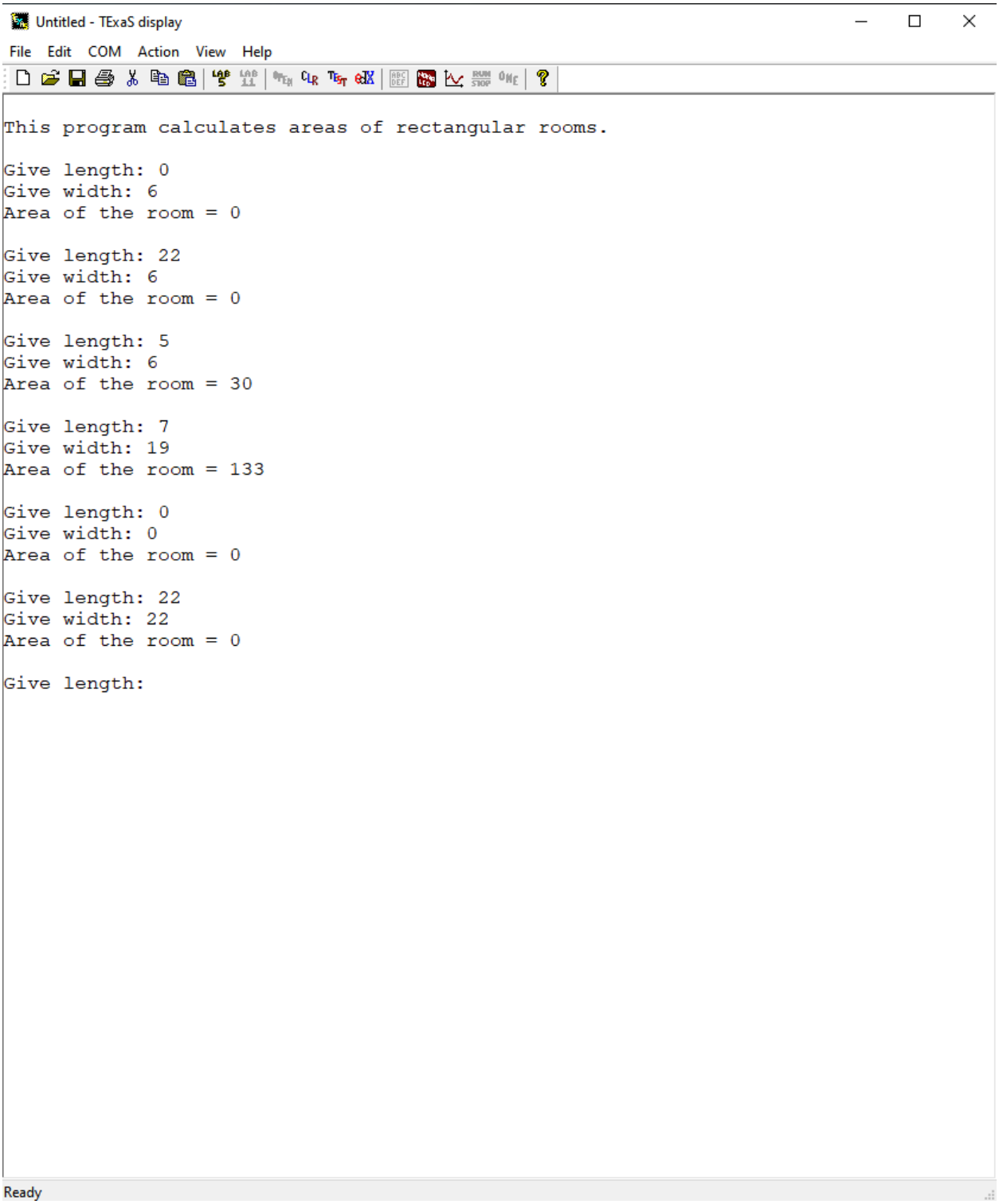
```
unsigned long Calc_Area(unsigned long l, unsigned long w) {
  unsigned long result;
// Put your Lab 5 code here
  if ((l < 3) || (l > 20)){
  return(0);
        } else if ((w < 3) || (w > 20)){
                return(0);
        }else{
                result = l * w;
        }

        return(result);
}
```

Debug In Simulation



Debug On The Real Board



Questions

1. How is the function Calc_Area being called? (Call by value or call by reference)

The function Calc_Area is called by value.

2. What are the actual and formal arguments in the function Calc_Area?

Formal argument is w and actual arguments are length and width