CSC 110 Fall 2024

Decomposition Problem (attendance)

Consider a file whose contents are a series of comma separated values that represent a rectangle. The value is the name of the rectangle and the remaining values are the width and height. A sample input file, `rectangles.txt`, is shown below:

```
#name,width,height
u1,3,5
rec1,80,20
rec2,7,2
z,10,2
```

Write a program that processes a file containing comma separated values as described above. The program should read the file and create a dictionary where each key is the name of a rectangle and the corresponding value is a tuple of the rectangle's `width`, `height`, and `area`. For the file above, the program should create the dictionary shown below:

```
{ 'u1': (3, 5, 15), 'rec1': (80, 20, 1600), 'rec2': (7, 2, 14), 'z': (10, 3, 30) }
```

The program should then use the dictionary of rectangles as described above and print the rectangle with the largest area. Using the dictionary above, the program would print the following:

```
rec1: (80, 20, 1600)
```

Notes:

- Assume that the file exists, has only one header line starting with #, and that the file contains all expected values.
- You may assume there are no ties.
- Your program must have a main() and at least two additional functions.