Fall 2020

Computer Science 1001
Lab Problem #8
Due Nov 20th (11:59pm NL time)

- Your solution to this lab problem should be uploaded to the **Lab Problem 8** dropbox on the course Brightspace shell.
- Name your file `hex_to_dec.py`.
- The dropbox for this lab problem will close at 11:59pm NL time on November 20th. Late submissions will not be accepted.

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1. The hexadecimal number system is a base-16 system, that is, it makes use of 16 symbols: `0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F`. The symbols `0` to `9` are equivalent in hexadecimal and decimal, while `A` in hexadecimal is equal to `10` in decimal, `B` in hexadecimal is equal to `11` in decimal, and so on. To convert from hexadecimal to decimal we simply multiply by powers of 16. For example, `98A` in hexadecimal can be converted to decimal as follows:

$$9 \times 16^2 + 8 \times 16^1 + 10 \times 16^0 = 2442_{10}.$$

Write a recursive Python function, in a file called `hex_to_dec.py`, to convert a hexadecimal number (passed to the function as a string) to its decimal equivalent. Include a `main` function to test your function using a user-input hexadecimal value.