

Lab 11 – CSE 101 (Spring 2021)

Objectives

The primary objectives of this lab assignment are:

- To get practice converting between different encodings
- To get more Python programming practice

1. Converting Strings to Hexadecimal (2 points)

In the [lab11.py](#) file, implement the `print_hex` function that will print the ASCII codes in a string using hexadecimal notation:

```
>>> print_hex("Hello")
```

```
48 65 6C 6C 6F
```

Write your own code to convert each character to hexadecimal – do not use the `hex()` function. To do this, you can follow the same algorithm we used for converting a decimal number to binary by dividing number by 2 and looking at the remainder, except you need to divide by 16 since it is going to a base 16 number, instead of base 2.

You can use the `ord()` function to get the decimal value of a character. For example, `ord("H")` returns 72.

You will also want to use the provided `decimal_to_hex_string_dict`, which will allow you to map a decimal number between 0-15 to the hexadecimal string value.

It may be helpful to review the Chapter 8 slides and check out the `data_rep.py` sample code for Chapter 8.

2. More coding practice (3 points)

When you are applying for programming jobs, sometimes companies conduct online tests to determine your programming skills as part of the candidate screening process. There are several platforms for testing programming skills online, such as Codility and HackerRank. You can get the feel of some of the problems at the following page:

<https://app.codility.com/programmers/lessons/>

During this lab session you will solve the following problem from the Codility platform:

MaxProfit problem (Save your solution as `maxprofit.py`):

https://app.codility.com/programmers/lessons/9-maximum_slice_problem/max_profit/

If you enjoy solving this style of problems, you can try out other examples on the site as additional practice learning programming over the break.

3. Submission

Submit the following programs on blackboard:

- 1) Completed `lab11.py` program
- 2) `maxprofit.py` program