

# CS 562 Proposal of Project

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For this project, I suppose to test codes of converting between a string of ASCII and Unicode chars maintaining readability. I prepare to test this library which get from the GitHub and check if it can be used directly. In addition, I also want to test some functions about processing strings, which is discussed in preparing job hunting. Converting between a string of ASCII and Unicode chars maintaining readability library can be found on the GitHub:

<https://github.com/box/rotunicode>

Some string function codes can be found in the discussion part of:

<https://leetcode.com/problemset/algorithms/>

The library is taking string as input and transfer to ASCII and get the Unicode chars as output, and also can do it in contrast. It contains three sub-codes. One is for input checking. As there are different input options, at the beginning of the code, input choosing is necessary. The second code is about transformation. And the third code is going for safety, which consider the problem that the string contains Unicode. By using the third code, string contains Unicode can also be transferred into Unicode correctly. In addition, I also want to test some functions. These functions includes Roman to Integer, Longest Substring without Repeating Characters and etc. These functions are coming from the 'job hunting questions library'. Finding job is an important event to those who prepare to graduate. In these websites, they all have their own code checkers for the submissions. I find some of the titles are very interesting and most of codes has solutions given by customers in discussion part. So checking these solutions is also a good and significant test. At the same time, I also want to compare two results from TSTL and website check. Most of these codes are transfer problem, like given a string to transfer to other things.

To test these codes, first thing I plan to do is checking the normal input separately. As each code has the correctness of the result. So the first thing I need to guarantee is the correctness of the result. In this part, I prepare to check the library with some simple examples empty strings. Then check other factors which may affect the results, such as the length of the input, the string misses the end signal, the string cannot be recognized, and the string contains Unicode. These factors may not affect most result, but for some special input, it may return a wrong result. To test the scattered functions, I need to consider more. For example, in the code of string to integer, I need to consider whether the result is out of range of int. So in conclusion, in this project, the correctness is decided in two parts: One is the result correctness of normal inputs or simple inputs. The other is the result correctness of special inputs which also includes the process result correctness of special inputs. Actually, I plan to test each code separately and then examine the whole library to avoid invoking errors.