Name _____ Period _____

Unicode Translation

Your Tasks (Mark these off as you go)

- ☐ Determine the binary and hexadecimal equivalent for Unicode characters
- ☐ Write code to print out all the Unicode characters given their decimal or hexadecimal equivalent
- ☐ Write code to encode a String in Unicode
- ☐ Receive credit for this lab guide

☐ Determine the binary and hexadecimal equivalent for Unicode characters

The Unicode system has corresponding characters for the values 0 thru 65536. The ASCII system common to our language encompasses the first 255 places.

(a) Write code to determine the number of bits (places in binary) required to represent the 255 ASCII symbols.
(b) Write code to determine the number of bits (places in binary) required to represent the 65536 Unicode symbols.

Unicode values are often represented in hexadecimal to reduce the length of digits required to represent them.

(a) Write code to determine the number of places required to represent the 255 ASCII symbols in hexadecimal.
(b) Write code to determine the number of places required to represent the 65536 Unicode symbols in hexadecimal.

Below are some characters from the Unicode character set.

Char	Decimal	Binary	Hexadecimal
☥	10014		
▯	9413		
Ãƒ	7850		
ʊ	7551		

Use your program from the previous lab to convert the decimal Unicode equivalent values to binary. Hint: You will need to report the final binary number as a *long* variable type in your code otherwise you will get an overflow error.

How would each character be represented in hexadecimal? (Show your work)

☐ Write code to print out all the Unicode characters given their decimal or hexadecimal equivalent

The Unicode system has corresponding characters for the decimal values 0 thru 65536. Write a loop that could be used to print out all the corresponding characters.

Write code that could be used to encode each Unicode character in hexadecimal

☐ Write code to encode a String in Unicode

Consider a String of characters like “Code is Cool!”, or even your name. Write code that could be used to encode each character in the String to its Unicode equivalent and print the result to the consol. Your code should also count the number of lower case letters and upper case letters.

☐ Receive credit for this lab guide

Submit this portion of the lab to Pluska to receive credit for the lab guide. Once received, your completed code challenges will also be graded and will count towards your final lab grade.