

Project #2  
**Introduction to flex: Upside Down Mirror Writing**  
CpSc 8270: Language Translation  
Computer Science Division, Clemson University  
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September 14, 2017

## Due Date:

In order to receive credit for this assignment, your solution must meet the requirements specified in this document and be submitted, using the **handin** facility, by 8 AM, Friday, September 28<sup>th</sup>, 2017. The handin close date is set at three days after the due date. If you submit after the due date but before the handin close date there will be a ten point deduction. No submissions will be accepted after the handin close date and no submissions will be accepted by email.

## Project Specification:

The purpose of this project is to help you to become familiar with flex, a tool that recognizes regular expressions. To complete the project you must write a program that accepts text as input and writes the text upside down and backwards. To get full credit you must use flex to read all input to your program and you must be able to handle the characters illustrated in Figure 1 and on the first web page listed below.

Some helpful web sites that contain information on upside down text and mirror writing can be found at:

[https://en.wikipedia.org/wiki/Transformation\\_of\\_text#Examples](https://en.wikipedia.org/wiki/Transformation_of_text#Examples)

<http://www.upsidedowntext.com/unicode>

[https://en.wikipedia.org/wiki/Mirror\\_writing](https://en.wikipedia.org/wiki/Mirror_writing)

<http://www.twiki.org/cgi-bin/view/Blog/BlogEntry201211x1>

z	ȱ	x	ᄁ	ᄂ	n	ᄄ	s	j	b	d	o	u	w	l	ᄆ	r	ᄈ	q	ᄊ	ᄋ	ᄌ	ᄍ	ᄎ	ᄏ	ᄐ	ᄑ	e
007A	028E	0078	028D	028C	006E	0287	0073	0279	0062	0064	006F	0075	026F	006C	029E	027E	0131	0265	0253	025F	01DD	0070	0254	0071	0250		
Z	Ȳ	X	ᄃ	ᄄ	n	ᄅ	S	Ȳ	ᄆ	ᄇ	O	N	W	ᄈ	ᄉ	ᄊ	ᄋ	H	G	ᄌ	ᄍ	ᄎ	ᄏ	ᄐ	ᄑ	ᄒ	ȳ
005A	2144	0058	004D	039B	2229	22A5	0053	1D1A	038C	0500	004F	004E	0057	2142	22CA	017F	0049	0048	2141	2132	018E	15E1	0186	10412	2200		
0	6	8	ᄇ	9	5	ᄈ	ᄉ	ᄊ	ᄋ																		
0030	0036	0038	3125	0039	03DA	07C8	218B	218A	21C2																		
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214B	203E	00BF	00A1	201E	002C	02D9	0027	061B																			

Figure 1: Hex codes to translate characters from normal to upside down.