CS140 Homework 1 [10 pts]

Due 11.10am Tuesday January 22, 2019

Problem 1a [3]

Write a C++ program called hw_1a.cpp that prints the value of argc followed by the addresses of each argv argument as well the corresponding (C-style) strings. The program must contain everything needed to compile. The following is an example output:

```
unix> ./hw_1a This is great
Num args = 4
argv[0] = 0x7fffeb3fb1f8 ./hw_1a
argv[1] = 0x7fffeb3fb200 This
argv[2] = 0x7fffeb3fb208 is
argv[3] = 0x7fffeb3fb210 great
```

Problem 1b [7]

Copy hw_1a.cpp into a new program called hw_1b.cpp that computes and prints the length of each command line argument. See an output example below. Do not use functions from <string> or <cstring>. Instead write your own function "int strlen(char *)" which is given a pointer to a C-style string, namely, argv[i], and returns the length thereof (number of characters). Use a pointer to advance through the string. Use pointer dereferencing to determine when to stop. Hint: C-style strings are NULL-terminated meaning the last character equals '\0'; the condition *s=='\0' is thus met when the end of the string has been reached. Hint: See the pointer_handout for a related function that compares two C-style strings.

```
unix> ./hw_1b I learn so much!
Num args = 5
argv[0] = 0x7fff8b27e098 ./hw_b (strlen=6)
argv[1] = 0x7fff8b27e0a0 I (strlen=1)
argv[2] = 0x7fff8b27e0a8 learn (strlen=5)
argv[3] = 0x7fff8b27e0b0 so (strlen=2)
argv[4] = 0x7fff8b27e0b8 much! (strlen=5)
```

Submission

Submit your answer via Canvas. If you only complete Problem 1a, submit hw_1a.cpp. If you also complete Problem 1b, submit only hw_1b.cpp as it supersedes hw_1a.cpp.

Submission will close automatically when the deadline rolls around to allow discussion of the answer in class. If you worry that you might miss the deadline, submit your answer early. This will be standard procedure going forward and will not be mentioned again.