

Fall 2020 CS 3723 Programming Languages Assignment #1

Name James Hernandez Section 001 abc123 jug 455

Given the C code shown below, what is the output? You *must* run this on the fox machines.

Aristotle is frequently misquoted as saying "The whole is greater than the sum of the parts." A better translation is "In the case of all things which have several parts and in which the totality is not, as it were, a mere heap, but the whole is something besides the parts, there is a cause; for even in bodies contact is the cause of unity in some cases, and in others viscosity or some other such quality."

Size(char) = 1

Size(int) = 4

Size(void *) = 8

Size(s1_t) = 3

Why? 3 char's so size of char = 1, 1+1+1 = 3

Size(s2_t) = 16

Why? Padding is done when a smaller data type has bigger ones ahead of it. Original size = 10, since void* is bigger than char, we pad char bytes with 6 more. so 10+6=16 2 char = 6 bytes
 \uparrow
 3 bytes each

Size(s3_t) = 24

Why? Padding as well. Because void* = 8, char x = 8, char z = 8 so this leaves us with 8+8+8 = 24

Size(s4_t) = 12

Why? Padding is performed. sizeof(s4_t) = 6, sizeof(int) = 4, size of(char) * 2 = 2 we pad 3 bytes for each char so, 6+3+3 = 12