COMP - Memory Packing and Alignment (MIEIC - Compilers - 2021)

145	07:22	Active
Responses	Average time to complete	Status

1. Calvin intends to save bytes in a particular program that needs to store a large number of registers. How many bytes are needed to store each register with the type given by the following struct? struct s1 { char a; short a1; char b1; float b; int c; char e; double f; };

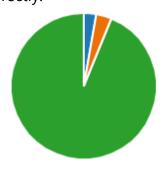   75% of respondents (109 of 145) answered this question correctly.

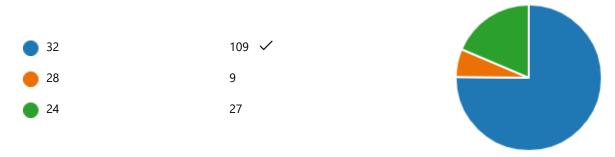 | | | |
   |---|---|---|
   | 🔵 32 | 109 ✓ | |
   | 🟠 28 | 7 | |
   | 🟢 24 | 29 | |

2. How many bytes are needed to store each register with the type given by the following struct? struct s2 { char a; char b1; char e; short a1; float b; int c; double f; };

   94% of respondents (136 of 145) answered this question correctly.

🔵 32	4	
🟠 28	5	
🟢 24	136 ✓	

3. How many bytes are needed to store each register with the type given by the following struct?
   struct s3 { double f; char a; short a1; char b1; float b; int c; char e; };

   75% of respondents (109 of 145) answered this question correctly.

   - 32   109 ✓
   - 28   9
   - 24   27

4. Report what you get by printing the sizes of the three structs, e.g., using the following C code:
   printf("size of s1: %d bytes \n", sizeof(struct s1)); printf("size of s2: %d bytes \n", sizeof(struct s2)); printf("size of s3: %d bytes\n", sizeof(struct s3));

   ■ 32 bytes   ■ 28 bytes   ■ 24 bytes

   s1

   s2

   s3

   100%   0%   100%