CS 240 SI Worksheet
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Session #11
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Pointers (Part 2)

```
int** ben = (int**) 0x1000
char** ash = (char**) 0x100C     //strs
```

Data is stored in **little endian** (like in the x86), and each address is **4 bytes**.
0x00 is the ASCII value for '\0' 0x00000000 is the address that stores NULL
(Both tables are parts of the heap.)

Address	**Content (in hex)** (lowest address to the right)
0x1018	A3 0F 27 DD
0x1014	00 00 00 00
0x1010	00 00 31 40
0x100C	00 00 31 50
0x1008	00 00 31 50
0x1004	2C 38 95 AB
0x1000	00 00 31 48

Address	**Content (in hex)** (lowest address to the right)
0x3158	00 00 10 00
0x3154	28 19 0C D0
0x3150	00 72 74 70
0x314C	74 9C DF 20
0x3148	BB 2C 08 92
0x3144	37 D7 00 21
0x3140	6E 61 65 4A

	Type	**Value**
`ash`	**char****	**0x 00 00 10 0C**
`*ash`	**char***	**0x 00 00 31 50**
`**ash`	**char**	**0x 70**
`(*ash)+3`	**char***	**0x 00 00 31 5C**
`*(ash+3)` **(out of bounds because ash is terminated by null, but C**	**char***	**0x A3 0F 27 DD**

	Type	**Value**
`ben`	**int****	**0x 00 00 10 00**
`ben + 4` **(scaling)**	**int****	**0x 00 00 10 10**
`*(ben+4)`	**int***	**0x 00 00 31 40**
`&(*(ben+4))`	**int****	**0x 00 00 10 10**
`&(ben)`	**int*****	**0x 00 00 31 58**
`&(ben) + 4`	**int*****	**0x 00 00 31 68 (0x 3158 + 4*4)**

allows it)					

Describe `ash`: What kind of array is it? What elements does it have? What is its length?

It is an array of 2 strings (or pointers to char arrays) (or char*s) with a null terminator. (Specifically, it is [“fun”, “Jean!”] in ASCII.)

Do the same with `ben`:

It is an array of 5 pointers to integers (or int*s) with a null terminator.