GeeksQuiz

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GATE CS Coding Practice Placements GeeksforGeeks

C | Pointer Basics | Question 17

```
#include <stdio.h>
void f(char**);
int main()
{
    char *argv[] = { "ab", "cd", "ef", "gh", "ij", "kl" };
    f(argv);
    return 0;
}
void f(char **p)
{
    char *t;
    t = (p += sizeof(int))[-1];
    printf("%s\n", t);
}
```

Run on IDE

(A) ab

(B) cd

(C) ef

(D) gh

Answer: (D)

Explanation:

Quiz of this Question

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Category: C Tags: C , C-Pointer Basics, Pointer Basics

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Mr. Lazy • a year ago

Its simple ... check this ..
We know compiler converts arr[i] to *(arr + i) .
so t = (p += sizeof(int))[-1]; is converted to
=> t = (p + 4)[-1];
=> t = *(p + 4 - 1);
=> t = *(p + 3);
which is nothing but p[3]. p[3] is the starting address of string "gh" . So output is "gh"

Note : p is a pointer to an array of character pointers where each pointer points to the starting address of the corresponding string.

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shabi victor ↪ Mr. Lazy • a year ago

how r u taking
sizeof(int) =4
it should be 2...

^ | ˅ • Reply • Share ›

pranav adarsh ↪ shabi victor • 3 months ago

you are right but it may be, not should be.it depends on which compiler your code is running!!!

1 ^ | ˅ • Reply • Share ›

SMRUTI RANJAN SAHOO ➦ shabi victor • 8 months ago

Size of int is 4 byte . Actually it depends upon compiler . So we generally take it 4 byte .

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Feliz Kumar • 2 years ago

here t contains the base address of the argv[].so t contains address of "ab" and since the array is character array after every 1 byte of storage the strings are stored.Now p=p+sizeof int stores the address of ij in p since it moves to the four places after ab since it is sizeof(int)=4 and it is storing is character of 1 byte.so p[-1] gives to reduce the pointer to 1 and results in 1 less than the address pointed to ij and address is gh.so *t gives the content at address gh ie "gh".

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Alex Burns ➦ Feliz Kumar • 2 years ago

You're right, but we shouldn't be assuming that sizeof(int)=4, as this is machine dependent. This should be explicitly stated at the beginning.

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Rishi Bhardwaj • 2 years ago

pls explain this

3 ⌃ | ⌄ • Reply • Share ›

Jon • 3 years ago

So how does this work? No explanation or discussion

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chillchirag • 2 years ago

The answer can be cd also if the size of 'int' is 2. I ran it on turbo giving me answer as cd.

1 ⌃ | ⌄ • Reply • Share ›

Alex Burns ➦ chillchirag • 2 years ago

Correct, you shouldn't assume sizeof(int) is 4. It's true on modern intel but not on every hardware.

1 ⌃ | ⌄ • Reply • Share ›

Rashid khan • 2 years ago

pl explain

⌃ | ⌄ • Reply • Share ›