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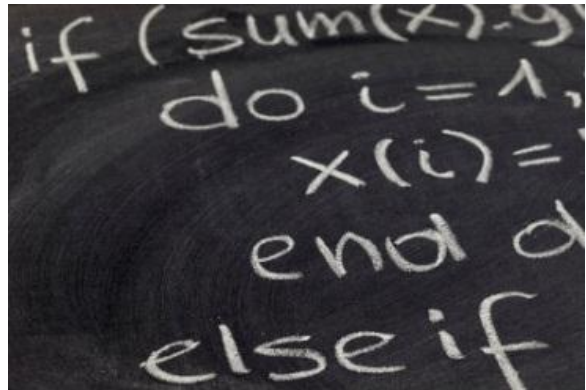
BEST QUESTIONS & ANSWERS FROM C



Interview Question and Answers

Best Questions and Answers from C

GeekInterview.com is an Open Database where you can share interview questions, comment / answer any questions. Each question is like discussion thread that helps you to learn and understand each question and answer in detail instead of just reading them.



Preparing for a job interview can be a stressful experience, especially for fresher's. Considering that you are an aspiring candidate seeking out to begin your career in programming related domain, it is imperative that you thoroughly be prepared, in order to stand a good chance of getting hired.

Among the things that you need to plan and prepare for would be the questions that will most likely be asked during your interview. Preparation is the key to making a good first impression, particularly for first-time applicants. Consequently, lack of preparation could lead to nervousness and inability to answer questions satisfactorily. I will help you do well during your accounting job interview, which is why this PDF has been created to specifically guide you on how best to answer common C programming language interview questions.

Target Audience

This guide is designed to help anybody who is planning to attend programming job interview in any company, big or small. With the C question and answers provided in this PDF, you can better prepare for the interview and feel more confident during the question and answer session with your interviewer.



Disclaimer

This C Questions and Answers PDF contains 39 question and answers. All explanation and answers are based on user submitted comments and opinion. Exforsys Inc is not responsible for correctness of the same.



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1. What is the output of the following code?

```
1. #include <stdio.h>
2. void main() {
3.     int s = 0;
4.     while (s++ < 10) {
5.         if (s < 4 && s < 9)
6.             continue;
7.         printf(" %d ", s);
8.     }
9. }
```

Options

- 1) 1 2 3 4 5 6 7 8 9
- 2) 1 2 3 10
- 3) 4 5 6 7 8 9 10
- 4) 4 5 6 7 8 9

Answer contributed by jbode

Answer:

3) 4 5 6 7 8 9 10

Reason:

The result of the expression `s++` is the value of `s` *before* the increment, so the expression `(s++ < 10)` operates on the values 0 through 9.

In the body of the loop, `s` has been incremented, so the expression `(s < 4 && s < 9)` operates on the values 1 through 10. When `s` is between 1 and 3, the 'continue' statement is executed and the loop repeats from the beginning, skipping the `printf`. So only the values 4 through 10 are written to standard output.

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2. How to reverse a sentence with a program

Answer contributed by Joshi

Answer:

```

1. #include <stdio.h>
2. #include <conio.h>
3. #include <string.h>
4. void main()
5. {
6.     char *s = "Life is beautiful", ch;
7.     int len = strlen(s), start, end = -1, t = 0, length = 0, i;
8.     clrscr();
9.     printf("Original sentence=%s\n", s);
10.    *(s + len + 1) = '\0';
11.    *(s + len) = ' ';
12.    while (*(s + length) != NULL) {
13.        if (*(s + length) == ' ') {
14.            start = end + 1;
15.            end = length;
16.            //printf("%d %d\n", start, end);
17.            t = 0;
18.            for (i = start; i < start + (end - start) / 2 + 1; i++) {
19.                ch = *(s + i);
20.                *(s + i) = *(s + end - t);
21.                *(s + end - t) = ch;
22.                t++;
23.            }
24.        }
25.        length++;
26.    }
27.    strrev(s);
28.    printf("After processing=%s", s);
29.    getch();
30. }

```

This is a very simple program having the following logic.

If the main string is say: 'Life is beautiful'.

then after reversing words at their respective places, the string will read as 'efiL si lufituaeB', reversing this string we get – 'beautiful is Life'

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3. Write a function 'reverse' which takes a string s as a parameter and prints out it reverse.

Answer contributed by Lokesh.M

```
1. void reverse(int idx, char *str) {
2.     if (--idx < 0) {
3.         return;
4.     } else {
5.         putchar(*(str + idx));
6.         reverse(idx, str);
7.     }
8. }
```

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4. What is the type of the variable b in the following declaration?

```
1. #define FLOATPTR float*
2. FLOATPTR a, b;
```

Options:

- a) float
- b) float pointer
- c) int
- d) int pointer

Answer contributed by nirupama and others

Answer:

- a) float

The statement `FLOATPTR a,b;` becomes `float* a,b;` Here "a" is a float pointer, but "b" is just an float variable, so the correct type for "b" is "float", and not "float-pointer". The above problem demonstrate the drawback of using #define constant. To avoid this situation use typedef's in place of #define . Then code works as expected

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5. What is the difference between character array and string in C?

Answer contributed by udaykiran

Answer:

The major difference between the char array and the string is that the array will not end with the null, whereas string ends with the null.

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6. Is it possible to print colors with printf statements?

Answer contributed by Arvind Kala

Answer:

Yes, there are already readymade functions in header file conio.h

textcolor(5) will change the color to the pink. Similarly by changing the value we get different colors.

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7. Write a program to reverse a linked list

Answer contributed by Pranjali pandit

Answer:

```
1. #include<stdio.h>
2. #include<stdlib.h>
3. struct list {
4.     int month;
5.     struct list *next;
6. };
7. typedef struct list node;
8.
9. void init(node * record)
10. {
11.     record->next = NULL;
12. }
13.
14. void addnode(node * record, int d)
15. {
```




```
16. node *fresh;
17. fresh = (node *) malloc(sizeof(node));
18. fresh->month = d;
19. fresh->next = record->next;
20. record->next = fresh;
21. }
22.
23. void print(node * record)
24. {
25. node *temp;
26. temp = (node *) malloc(sizeof(node));
27. for (temp = record->next; temp; temp = temp->next)
28. printf(" %d", temp->month);
29. }
30. void reverse(node * record)
31. {
32. node *temp;
33. node *temp1;
34. node *temp2;
35. temp = (node *) malloc(sizeof(node));
36. temp1 = (node *) malloc(sizeof(node));
37. temp2 = (node *) malloc(sizeof(node));
38. temp = record;
39. temp1 = temp->next;
40. temp2 = temp1->next;
41. temp->next->next = NULL;
42. while (temp2 != NULL) {
43. temp = temp1;
44. temp1 = temp2;
45. temp2 = temp1->next;
46. temp1->next = temp;
47. }
48. record->next = temp1;
49. }
50. int main(void)
51. {
52. node *start;
53. node *start1;
54. start = (node *) malloc(sizeof(node));
55. init(start);
56. int i = 0;
57. for (i = 10; i >= 0; i--)
58. addnode(start, i);
59. print(start);
60. reverse(start);
61. printf("n");
62. print(start);
63. return 0;
64. }
```

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8. What is the purpose of main() function?

Answer contributed by Supriya ahire

main() is the user-defined function. main() is the first function in the program, which gets called when the program executes. The startup code contains runmain() function, which calls main() function, we can't change the name of the main() function.

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9. What will be the code in c to get the following output?

```
ABCDEF GFEDCBA
ABCDEFFEDCBA
ABCDEEDCBA
ABCD DCBA
ABCCBA
ABBA
AA
```

Answer contributed by Ravi_529

```
1. #include<conio.h>
2. #include<stdio.h>
3. #include<string.h>
4. void main()
5. {
6.     char arr[] = "ABCDEFGF";
7.     int i, j, length = strlen(arr);
8.     clrscr();
9.     while (length > 0) {
10.        for (i = 0; i < length; i++)
11.            printf(" %c", arr[i]);
12.        for (j = length - 2; j >= 0; j--)
13.            printf(" %c", arr[j]);
14.        printf("\n");
15.        length--;
16.    }
17.    getch();
18. }
```

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10. What is an argument? Differentiate between formal arguments and actual arguments?

Answer contributed by Venkatesh

The actual arguments are the arguments with which the function can be called. The formal arguments are the arguments with which the function can be defined. In simple words, function call contains actual arguments and function definition contains formal arguments.

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11. How can you determine the maximum value that a numeric variable can hold?

Answer contributed by kbjarnason

The correct way is to include `<limits.h>` and use the defined macros such as `INT_MIN` and `INT_MAX`, which define the minimum and maximum values, which the type can hold.

In terms of designing your code, it helps to know that C imposes "minimum maximums" - e.g. a signed char must be able to hold at least the values -127 to 127; a signed int must be able to hold at least the values -32767 to 32767 and so forth.

Be wary of assuming that because a type is N bits wide, it can store 2^{N-1} possible values; there is absolutely no guarantee this is true.

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12. Why C is not platform dependent?

Answer contributed by Ranu Pratap Singh

Let us take example of Linux and Windows to explain this.

We say that C is platform dependent because

1. If you compile and build a C program code in windows, copy that .exe file to a Linux machine, that .exe file will not run there.



2. In the same way if you compile the same program code on Linux, you'll get a .out file which will not run on windows if directly copied there.

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13. Maximum length of command line arguments

What is the maximum length of command line arguments including space between adjacent arguments?

Answer contributed by Jbode

The C language standard does not impose any maximum on command line length / number of command-line arguments (not that I could find after a cursory search, anyway); the command-line shell is usually the limiting factor in this sort of thing.

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14. Which one is correct answer?

- C is a low level language
- C is a middle level language
- C is a high level language

Answer contributed by Radha

C is a middle level language. As C language contains both the features of high-level language and low-level languages. C can also be called as structured programming language.

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15. Is it possible to write a C program without semicolons?

Answer contributed by Jinto Jose

```
1. // Program For Finding Squar Of A NUmber
2. #define Squar(x) (x*x)
3. void main()
4. {
5.     while (!printf("Squar Of 2 Is %d", Squar(2))) {
6.     }
7. }
```

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16. What is the output of the following code

```
1. printf("%d", printf("Tim"));
```

- a. Results in a syntax error
- b. Outputs Tim3
- c. Outputs garbage
- d. Prints Tim and terminates abruptly

Answer contributed by Vishwas.p

Well yes it gives out a syntax error for the above code.

But if it was like this: `printf("%d", printf("Tim"));`

Then the result will be 'Tim3', because `printf` function always returns the number of characters printed...

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17. What would be the output of the following program?

```
1. main()  
2. {  
3.     int y = 128;  
4.     const int x = y;  
5.     printf("%d", x);  
6. }  
7.
```

- a) 128
- b) Garbage value
- c) Error
- d) 0

Answer contributed by Pallavi, Sudheshna.p and Anik

The answer is: 128

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18. Constant Variable Value

How will you change the value of a constant variable in C?

Answer contributed by Praneeth

Constant can be changed by using the pointer. Initialize a pointer to point to the value of a and then change the value using the pointer. Try this code

```
1. #include<stdio.h>
2. int main()
3. {
4.     const int = 5;
5.     printf("%d", a);
6.     int *k = (int *) &a;
7.     *k = 10;
8.     printf("%d", *k);
9.     printf("%d", a);
10.    return 0;
11. }
```

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19. What are the differences between Arrays and Linked List

Answer contributed by Manoj

- Arrays and Linked list both are list data structures used for maintaining a list of values. Arrays use sequential allocation while Linked list uses linked allocation.
- Linked list uses some extra memory i.e. link pointer.
- Indexing an element, e.g. accessing k^{th} element is cheaper in arrays and costly in Linked list.
- Insertion and Deletion of elements is a cheaper operation in Linked lists.
- Since nodes in Linked list are dynamically allocated, it has no limitations on growth (apart from memory constraints).
- Merging Lists is easier in case of Linked lists.
- Breaking a List into two or more lists is easier in case of Linked lists. So Linked list is a better data structure in most cases. Arrays are good mostly for static data structures.

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20. Write a program to implement the Fibonacci series

Answer contributed by baseersd

```
1. #include<stdio.h>
2. int main()
3. {
4.     unsigned int i = 0, j = 0, sum = 1, num;
5.     printf("\nEnter the limit for the series ");
6.     scanf("%d", &num);
7.     while (sum < num) {
8.         printf("%d ", sum);
9.         i = j;
10.        j = sum;
11.        sum = i + j;
12.    }
13.    }
14.    getch();
15. }
```

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21. What is the output of the following program?

```
1. #define SQR(x) (x*x)
2. main()
3. {
4.     int a, b = 3;
5.     a = SQR(b + 2);
6.     printf("%d", a);
7. }
8. 
```

- a) 25
- b) 11
- c) Error
- d) Garbage Value

Answer contributed by Vinayaka

The answer is b) 11.

Since it passes like (3+2) to #define, where it calculates as (3+2 * 3+2), as 1st preference is multiply & then addition, it evaluates as (3+ 2 * 3 +2) = (3+6+2)=11.

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22. What is the output of the following code?

```
1. main()
2. {
3.     if ((1 || 0) && (0 || 1)) {
4.         printf("OK I am done.");
5.     } else {
6.         printf("OK I am gone.");
7.     }
8. }
9.
```

- a) none of the above
- b) compile error
- c) OK I am gone
- d) OK I am done

Answer contributed by kgupta11oct

Answer is d.

((1 || 0) && (0 || 1)) will be:

((1) && (1))

(1 && 1) =>1: so will print: OK I am done.

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23. What is the difference between structure & union?

Answer contributed by rashmi.mohanty

1. Union allocates the memory equal to the maximum memory required by the member of the union but structure allocates the memory equal to the total memory required by the members.
2. In union, one block is used by all the member of the union but in case of structure, each member has its own memory space.
3. Union is best in the environment where memory is less as it shares the memory allocated. But structure cannot be implemented in shared memory.
4. As memory is shared, ambiguity is more in union, but less in structure.
5. Self-referential union cannot be implemented in any data structure, but self-referential structure can be implemented.

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24. What is a wild pointer?

Answer contributed by wild pointer

Wild pointer is a pointer that doesn't point to either a valid object (of the indicated type, if applicable), or to a distinguished null value, if applicable.

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25. Declare an array of N pointers

How do I declare an array of N pointers to functions returning pointers to functions returning pointers to characters?

Answer contributed by jhode

Consider the following code in which 'arr' is an N-element array of pointers to functions returning pointers to functions returning pointers to char.

Code

```
1. char *(*(*arr[N])())()
```

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26. How to reverse a string using array?

Answer contributed by santhosh kumar r

```
1. void main()
2. {
3.     char name[25], rev[25];
4.     int i, l;
5.     printf("enter the name");
6.     gets(name);
7.     l = strlen(name);
8.     for (i = 0; i < l; i++) {
9.         name[i] = rev[l - 1 - i];
10.        i++;
11.    }
12.    getch();
13. }
```

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27. What is the return type of the printf & scanf functions?

- a) void
- b) float
- c) int
- d) any

Answer contributed by baseersd

The return type of printf() and scanf() is int
In the declaration, observe the return type is int.
`int printf (const char *format, ...);`

`int scanf (const char *format, ...);`
printf() returns the number of characters printed on the console
scanf() returns the number of variables to which you are providing the input.

The following example will give you the clear idea.

```
1. int main()
2. {
3.     int i, j;
4.     printf("\nPrinted %d charecters on stdoutn ", printf("Enter values
   of i & j"));
5.     printf("\nYou entered input for %d variables", scanf("%d %d", &i,
   &j));
6.     getch();
7. }
```

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28. What is a BSS Data Segment?

Answer contributed by alokag

BSS, a part of Data Segment store all variables initialized to 0. Static variable(initialized with value other than 0) are not stored in BSS.

BSS is an "Uninitialized RAM" which is initialized to 0 before executing main().

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29. When is a switch statement better than multiple if statements?

Answer contributed by BHARATESH

In multiple if statements the conditions are to be checked as many times the if statements are written whereas in switch condition the condition is checked only once and jumps to required block.

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30. How many types of sorting are there in C?

Answer contributed by techoverdose

Basically sorting are of two types only:

A. Position Based

1. Selection sort
2. Radix sort
3. Bucket sort, etc.

B. Comparison Based

1. Bubble sort
2. Quick sort
3. Merge sort
4. Binary sort, etc.

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31. What is size of FILE data type? FILE *fp;

Answer contributed by ardashev

1. `FILE *p = NULL;`
2. `printf("size of pointer = %d\n", sizeof(p));`

Output:

size of pointer = 8

Pointer has size depending on the machine's architecture.

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32. What is the output of the following code?

```
1. {  
2.     printf("%d, %d", sizeof('c'), sizeof(100));  
3. }
```

- a) 4, 100
- b) 2, 100
- c) 2, 2
- d) 4, 4

Answer contributed by Chandra Shekhar Chaubey

It depends on the compiler. If compiler is treating your integer as a 2 byte then answer will be 2,2 and if compiler is treating your integer as 4 byte then answer will be 4,4

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33. Swap the content of two variables

How to swap the content of two variables without a temporary variable?

Answer contributed by unknown13

```
1. x = x * y;  
2. y = x / y;  
3. x = x / y;
```

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34. How to print "n" in C?

Answer contributed by deepakcs2001

```
1. printf("\n\\n\\");
```

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35. What is the output of the following code?

```
1. #define square(a) (a*a)
2. main()
3. {
4.     printf("%d", square(4 + 5));
5. }
```

Answer contributed by ashish khandelwal

Answer is 29

$4+5*4+5=4+20+5=29$

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36. A switch statement cannot include

- a) constant as arguments
- b) constant expression as arguments
- c) string as an argument
- d) None of the above

Choose the correct option

Answer contributed by Ashutosh awasthi, spatil, paulson paul chambakottukudyil

Answer:

- c) string as an argument

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37. Find entered number is EVEN or ODD

How to find entered number is EVEN or ODD without using conditional statement (not using if.. else, if.. , else if.., while, do... while..., for...)

Answer contributed by Nagaraju

Using Conditional Operator, the simplest solution is:

```
1. (i % 2 == 0) ? printf("Given Number is Even: %d", i) : printf("Odd:%d", i);
```

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38. Fix Function Behavior

Write the implementation of Fix function? $\text{fix}(2.5) = 2$ and $\text{fix}(-2.25) = -3$, this is the expected result. Write the code to implement this behavior?

Answer contributed by elephantpaw

```
1. #include <stdio.h>
2. #include <math.h>
3. using namespace std;
4. int main()
5. {
6.     cout << "test ::" << floor(2.5) << " :: " << floor(-2.25);
7.     return 0;
8. }
```

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39. What is the size of int in C or C++?

Options:

- a) 2 byte
- b) System dependent
- c) Compiler dependent

Answer contributed by rajat goel

It is compiler dependent, in GCC we have size of 4 bytes while in Turbo-C we have it as 2 bytes.

Correct Answer:

- c) Compiler dependent

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