

## List of most important & commonly asked c programs in interviews...

1. C program to find **factorial of a number**.
- ✓ 2. Program to **swap two bits**.
- ✓ 3. Program to **swap two words/nibbles** of a byte.
- ✓ 4. C program to **swap two numbers** without using third variable.
5. Program to check whether number is **Palindrome** or not
6. Program to check whether number is **Perfect square** or not
7. Program to print **"Hello World" without using semicolon**.
8. Program to check whether number is **Prime** or not.
9. Program to check whether number is **palindrome** or not.
10. C program to check whether a number is **Armstrong** or not.
11. C program to check whether a number is **Even or Odd**.
12. C program to print all **leap years** from 1 to N.
13. C program to **convert temperature** from **Celsius to Fahrenheit** and vice versa.
14. C program to **convert** number from **Decimal to Binary**.
15. C program to **convert** number from **Binary to Decimal**.
16. Program to **compare two strings** without using strcmp().
17. Program to **copy string** without using strcpy().
18. Program to **find an element** from one dimensional array.
19. Program to **delete an element** from one dimensional array.
20. Program to **swap adjacent elements** of one dimension array.
21. Program to **transpose a matrix**.
22. Program to **multiply two matrices**.
23. Program to **print source code** as program output.

## List of other C programming advanced programs

1. Stringizing Operator in C - Program to print variable name in C.
2. Function Pointer example program in C programming.
3. C program to get current System Date and Time in Linux.
4. C program to implement gotoxy(), clrscr(), getch(), getche() for GCC, Linux.
5. C program to find the size of a file in Linux.
6. C program to get Process Id and Parent Process Id in Linux.
7. fork() function explanation and examples in Linux C.
8. C program to Get Computer System IP Address in Linux.
9. C program to Set Computer System IP Address in Linux.
10. C program to design flying characters Screen Saver.
11. C program to design a TIC TAC TOE game.
12. Age Calculator (C program to calculate age).
13. C program to design love calculator.

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14. C program to guess a random number.
15. C program to check given string is a valid IPv4 address or not.
16. C program to convert String into Hexadecimal.
17. C program to demonstrate example of Variable Arguments.
18. C program to store time in an integer variable.
19. C program to store date in an integer variable.
20. C program to remove consecutive repeated characters from string.
21. C program to create your own header file.
22. EMI Calculator (C program to calculate EMI).
23. C program to validate date (Check date is valid or not).
24. C program to format/extract ip address octets.
25. C program to implement substring function.
26. C program to design a digital clock.
27. C program to convert hexadecimal Byte to integer.
28. C program to extract bytes from an integer (Hexadecimal) value.
29. C program to print character without using format specifiers.
30. C program to find Binary Addition and Binary Subtraction.
31. C program to print weekday of given date.
32. C program to calculate compound interest.

### TOP Interview Coding Problems/Challenges

1. Run-length encoding (find/print frequency of letters in a string)
2. Sort an array of 0's, 1's and 2's in linear time complexity
3. Checking Anagrams (check whether two string is anagrams or not)
4. Relative sorting algorithm
5. Finding subarray with given sum
6. Find the level in a binary tree with given sum K
7. Check whether a Binary Tree is BST (Binary Search Tree) or not
8. 1[0]1 Pattern Count
9. Capitalize first and last letter of each word in a line
10. Print vertical sum of a binary tree
11. Print Boundary Sum of a Binary Tree
12. Reverse a single linked list
13. Greedy Strategy to solve major algorithm problems
14. Job sequencing problem
15. Root to leaf Path Sum
16. Exit Point in a Matrix
17. Find length of loop in a linked list
18. Toppers of Class
19. Print All Nodes that don't have Sibling
20. Transform to Sum Tree
21. Shortest Source to Destination Path

## Some theoretical question . . .

- What is a pointer on pointer?
- Distinguish between malloc() & calloc() memory allocation.
- What is keyword auto for?
- What are the valid places for the keyword break to appear.
- Explain the syntax for for loop.
- What is difference between including the header file with-in angular braces < > and double quotes " "How a negative integer is stored.
- What is a static variable?
- What is a NULL pointer?
- What is the purpose of extern storage specifier?
- Explain the purpose of the function sprintf().
- What is the meaning of base address of the array?
- When should we use the register storage specifier?
- S++ or S = S+1, which can be recommended to increment the value by 1 and why?
- What is a dangling pointer?
- What is the purpose of the keyword typedef?
- What is lvalue and rvalue?What is the difference between actual and formal parameters?
- Can a program be compiled without main() function?
- What is the advantage of declaring void pointers?
- Where an automatic variable is stored?
- What is a nested structure?
- What is the difference between variable declaration and variable definition?
- What is a self-referential structure?
- Does a built-in header file contains built-in function definition?
- Explain modular programming.What is a token?
- What is a preprocessor?
- Explain the use of %i format specifier w.r.t scanf().
- How can you print a \ (backslash) using any of the printf() family of functions Does a break is required by default case in switch statement?
- When to user -> (arrow) operator.What are bit fields?
- What are command line arguments?
- What are the different ways of passing parameters to the functions? Which to use when?
- What is the purpose of built-in strcmp() function.Describe the file opening mode "w+".Where the address of operator (&) cannot be used?
- Is FILE a built-in data type?What is reminder for 5.0 % 2?
- How many operators are there under the category of ternary operators?
- Which key word is used to perform unconditional branching?
- What is a pointer to a function? Give the general syntax for the same.Explain the use of comma operator (.).What is a NULL statement?
- What is a static function?



- Which compiler switch to be used for compiling the programs using math library with gcc compiler?
- Which operator is used to continue the definition of macro in the next line?
- Which operator is used to receive the variable number of arguments for a function?
- What is the problem with the following coding snippet?
- Which built-in library function can be used to re-size the allocated dynamic memory?
- Define an array.
- What are enumerations?
- Which built-in function can be used to move the file pointer internally?
- What is a variable?
- Who designed C programming language?
- C is successor of which programming language?
- What is the full form of ANSI?
- Which operator can be used to determine the size of a data type or variable?
- Can we assign a float variable to a long integer variable?
- Is 068 a valid octal number?
- What is the return value of a relational operator if it returns any?
- How does bitwise operator XOR works.
- What is an infinite loop?
- Can variables belonging to different scope have same name? If so show an example.
- What is the default value of local and global variables?
- Can a pointer access the array?
- What are valid operations on pointers?
- What is a string length?
- What is the built-in function to append one string to another?
- Which operator can be used to access union elements if union variable is a pointer variable?
- Explain about 'stdin'.
- Name a function which can be used to close the file stream.
- What is the purpose of #undef preprocessor?
- Define a structure.
- Name the predefined macro which be used to determine whether your compiler is ANSI standard or not?
- What is typecasting?
- What is recursion?
- Which function can be used to release the dynamic allocated memory?
- What is the first string in the argument vector w.r.t command line arguments?
- How can we determine whether a file is successfully opened or not using fopen() function?
- What is the output file generated by the linker.
- What is the maximum length of an identifier?
- What is the default function call method?
- Functions must and should be declared.
- Comment on this. When the macros gets expanded?
- Can a function return multiple values to the caller using return reserved word?
- What is a constant pointer?

- To make pointer generic for which data type it need to be declared?
- Can the structure variable be initialized as soon as it is declared?
- Is there a way to compare two structure variables?
- Which built-in library function can be used to match a pattern from the string?
- What is difference between far and near pointers?
- Can we nest comments in a C code?
- Which control loop is recommended if you have to execute set of statements for fixed number of times?
- What is a constant?
- Can we use just the tag name of structures to declare the variables for the same?
- Can the main() function left empty?
- Can one function call another?
- Apart from Dennis Ritchie who the other person who contributed in design of C language.