C Programming Interview Questions

Core C Concepts

1. Storage classes in C (scope and life)

2. Memory layout of C program

3. When are register variables stored, what happens if there is large numbers of register variables

4. Difference between malloc and calloc with syntax and example

5. size of data types, size of pointer

6. pointer arithmetic

7. what is memory leak

8. Describe endianness, write a code to find endianness

9. what is dangling pointer

10. what is volatile type specifier

11. Explain build steps in C

12) what is implicit type casting and explicit type casting

13) what is structure padding? e.g.?

14) what are process and threads, what are the memory shared for threads and not shared?

15) What is task synchronization in process

16) what are different IPCs?

17) what are different states of a process?

18) what is context switching?

19) what is process control block

20) what is role in OS or C?

21) what is memory fragmentation

22) Explain different sorting algorithms

23) Explain different search algorithms

24) what is a linked list

25) Distinguish between stack and queue

26) Explain time complexity and space complexity in data structures.

27) What are inline functions

28) What are reentered functions

29) Distinguish between structure and union

C Programming Interview Questions

30) Structure padding and structure packing

31) Write a code to pack sparse matrix

32) Write a code to find no. of '0' and '1' from a user input data

33) Can we use volatile and const together?

34) Is it good to use static keyword in header files

35) You have a user provided alphanumerical string, convert every alphabet at even position to upper case.

36) Write a C code to set 5th bit of a register to 1.

37) Write a C code to check whether the nth bit is 1 or 0

38) Write a C code to copy the value of a register to another.

39) Write a C code to swap two variables without using a 3rd variable.

40) What is the difference between pass by value and pass by reference give e.g.

41) What is concatenation operator in embedded C

42) What is segmentation fault.

43) What is the difference between inline and macro functions.

44) Explain pre decrement and post decrement.

45) Which is better: count up from zero or count down to zero?

46) What is a null pointer?

47) What is a wild pointer.

48) Explain:

49) Why is ++i faster than i++?

50) Is it recommended to use printf() inside ISR?

51) Is it possible to pass parameters to ISR or return a value from it.

52) How to implement ISR

53) What is virtual memory in embedded C, how can it be implemented.

54) How to protect a char pointer from accidently pointing it to other address.

53) Distinguish between wild pointer and dangling pointer.

54) Difference between #include " " and #include < >.

55) Write a C code to multiply a number by 9 in fastest manner.

56) Write a program to check a number is a power of 2 or not

57) Can we use static in structure.

C Programming Interview Questions

58) Memory allocation of 2D array.

59) Passing 2D array as function argument.

60) What is fixed point and floating point.

61) How is floating point stored in C

62) Write a macro/function to toggle a bit of variable.

63) Write an algorithm to find the intersection of structure of arrays.

64) Bubble sort

65) Explain device tree

66) How to do multiple returns from a C function

67) Insert a node after a position in doubly linked list

68) Insert before a value in doubly linked list

69) Reverse a doubly linked list

70) Find the intersection of 2 linked list.

71) Bubble sort linked list.

72) Write a C code to convert little to big endian

73) Is there any compilation error in this code

74) write a code get the output

75) Find the size of a structure without using sizeof function.

76) Explain context switching

77) Explain different type of IPC

78) What is PS command in linux

79) Explain find, ps, grep commands in Linux

80) Difference between process and threads

81) Explain the memory layout of multiprocess system

82) Bit field inside a structure.

83) Enum in c

84) Define/Explain TCP and UDP

85) Toggle MSB of a port periodically at every 10ms

86) Pointer to array

87) Array of pointers

88) A 32 bit I2C controller's register is memory mapped at address 0x40025400.

C Programming Interview Questions

89) Write a code to reverse a string

90) Rewrite the code using recursive function.

91) Write a code which includes some basic functions like insertion, deletion, and traversal of a singly linked list.

92) Implement bubble sort, insertion sort, merge sort, and quick sort.

93) Implement the operation of binary search tree including insertion, deletion, and searching for a given value.

94) Write a function that checks 2 strings are anagrams of each other.

95) Implement a function to find the first non-repeated character in a string.

96) Write a program to read data from a file perform some operation and write some data back.

97) Implement for a recursive function to find the factorial of a given number.

98) Write a program to dynamically allocate memory for an array and sort the array.

99) Write functions to set, clear, toggle and check the value of individual bits in an integer.

Memory and Storage

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Data Structures & Algorithms

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Bitwise and Pointer Operations

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Embedded C & Low-Level Programming

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Code Snippets and Practical Exercises

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