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Compiler Design Interview Questions

Practice Compiler Design Interview Questions and Answers

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Q1. What is compiler design?

Compiler design covers the basic translation mechanism. It also covers error detection & recovery. As the front end, It includes lexical, syntax, and semantic analysis. It also includes code generation and optimization as back-end.

Q2. List various types of compiler?

A compiler is a computer program that helps to transform a high-level language written source code into low-level machine language.

Various types of compilers are listed below:

- Single-Pass Compilers
- Two-Pass Compilers
- Multipass Compilers

Q3. What is assembler?

An assembler is a computer program that interprets assembly language written software programs into machine language that the computer understands.

Q4. What tools are used for compiler construction?

The tools used for compiler construction are as follows:

- Parser Generator
- Scanner Generator
- Syntax directed translation engines
- Automatic code generators
- Compiler construction toolkits
- Data-flow analysis engines

Parser Generator generates syntax analyzers from the input that is based on a grammatical description of programming language or on a context-free grammar.

Scanner Generator generates a finite automaton to recognize the regular expression.

Syntax directed translation engines produce intermediate code with three address formats from the input that consists of a parse tree.

Compiler construction toolkits supply an integrated set of routines. It also helps to build compiler components or in the construction of various phases of a compiler. Automatic code generators generate the machine language for a target machine.

Data-flow analysis engines gather the information, that is the values that flow from one part of a program to another.

Q5. What is bootstrapping in compiler design?

In compiler design, Bootstrapping is a process in which simple language is used to translate more complicated programs. This complicated program can further handle even more complicated programs and so on.

Q6. What is yacc?

Yacc stands for 'yet another compiler-compiler'. It is the standard parser generator for the Unix operating system.

Q7. What is Relocatable Machine Code?

Relocatable machine code is instruction whose execution address can be changed.

Q8. What is Lexical analysis?

Lexical analysis is the first phase of a compilation that is used to convert the input from a simple sequence of characters into a list of tokens of different kinds, such as numerical and string constants, variable identifiers, and programming language keywords.

Q9. What is Linker?

The linker also called link editor is a program in a system that helps to link object modules of the program into a single object file. It performs the process of linking which is the process of collecting and maintaining pieces of code and data into a single file.

Q10. List some examples of compiler construction tools?

Some examples of compiler construction tools are as follows:

- Parser Generator
- Scanner Generator
- Syntax directed translation engines
- Automatic code generators
- Compiler construction toolkits
- Data-flow analysis engines

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