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Necessity to generating intermediate code
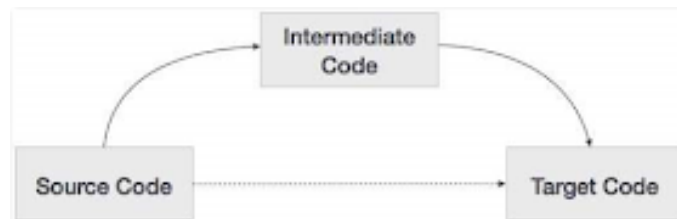
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- Why is it necessary to generate intermediate code instead of generating target program itself?

Question:

Why is it necessary to generate intermediate code instead of generating target program itself?

Answer:

It is necessary to generate intermediate code due to the following reasons-

- If a compiler translates the source language to its target machine language without having the option for generating intermediate code, then for each new machine, a full native compiler is required.

- Intermediate code eliminates the need of a new full compiler for every unique machine by keeping the analysis portion same for all the compilers.

  The second part of compiler, synthesis, is changed according to the target machine.

- It becomes easier to apply the source code modifications to improve code performance by applying code optimization techniques on the intermediate code.

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