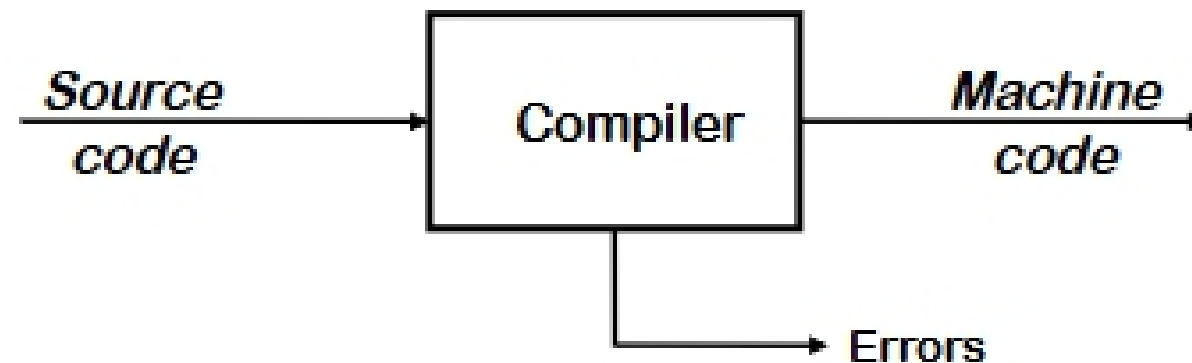




*The View from 35,000 Feet*

# High-level View of a Compiler

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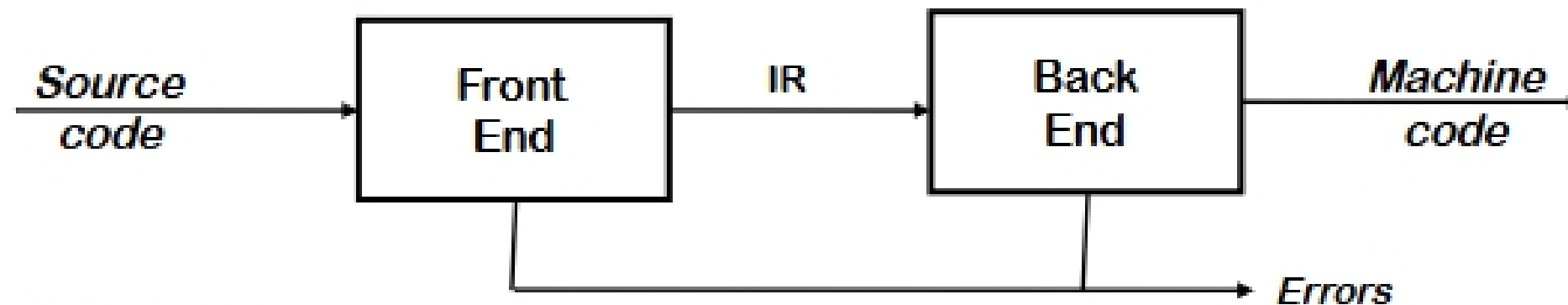
## Implications

- Must recognize legal (and illegal) programs
- Must generate correct code
- Must manage storage of all variables (and code)
- Must agree with OS & linker on format for object code

*Big step up from assembly language—use higher level notations*

# Traditional Two-pass Compiler

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## Implications

- Use an intermediate representation (IR)
- Front end maps legal source code into IR
- Back end maps IR into target machine code
- Admits multiple front ends & multiple passes (*better code*)

*Typically, front end is  $O(n)$  or  $O(n \log n)$ , while back end is NPC*