# Compiler Construction

## Lecture # 03

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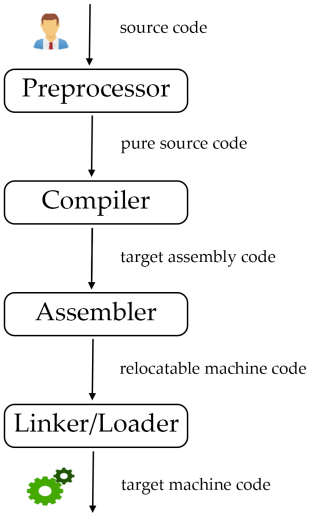
# A Language-processing System



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2. **Synthesis**

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   - the operations in the syntax tree are arranged in a hierarchical manner, the leaf operations will execute first and the root operation will execute last
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2. **Synthesis:**
   - an intermediate representation (syntax tree) and symbol table is provide
   - transformation of intermediate code into machine code
   - also known as the back-end of a compiler

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- sample symbol table for lexical analysis phase,

```
if (i==j);\n\tz=1;\nelse;\n\tz=0;\nendif;
```

| Line | Token | Lexeme |
|---|---|---|
| 1 | BLOCK_COMMAND | if |
| 1 | OPEN_PAREN | ( |
| 1 | ID | i |
| 1 | OP_RELATION | == |
| 1 | ID | j |
| 1 | CLOSE_PAREN | ) |
| 1 | ENDLINE | ; |
| 2 | ID | z |
| 2 | ASSIGN | = |
| 2 | NUMBER | 1 |
| 2 | ENDLINE | ; |
| 3 | BLOCK_COMMAND | else |

- Etc...

# Phases of Compiler