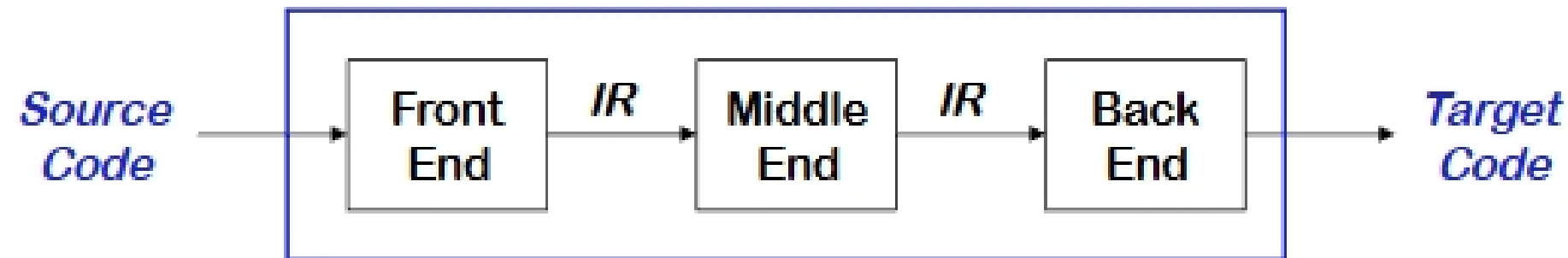




Intermediate Representations

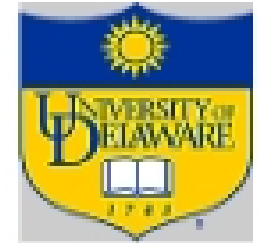


Intermediate Representations



- Front end - produces an intermediate representation (*IR*)
- Middle end - transforms the *IR* into an equivalent *IR* that runs more efficiently
- Back end - transforms the *IR* into native code

- *IR* encodes the compiler's knowledge of the program
- Middle end usually consists of several passes



Intermediate Representations

- Decisions in *IR* design affect the speed and efficiency of the compiler
- Some important *IR* properties
 - Ease of generation
 - Ease of manipulation
 - Procedure size
 - Freedom of expression
 - Level of abstraction
- The importance of different properties varies between compilers
 - Selecting an appropriate *IR* for a compiler is critical