OUTLINE

I - INTRODUCTION

II - DESIGN METHODOLOGY : AN OVERVIEW

III - ABSTRACTION LEVELS IN ALLIANCE

Three Different Views

All along the methodology, we handled different views:

1 – Behavioral View (Equations)

2– Structural View (Netlists)

3– Layout View (Segments)

Behavioral View (1)

Logical Equations

- Description Formalism

Examples:

$U = A.(A+B)$	$V = C.D$	$T = D \oplus E$
$X = U.V$	$Y = V + T + X$	$Z = T.E$

Behavioral View (2)

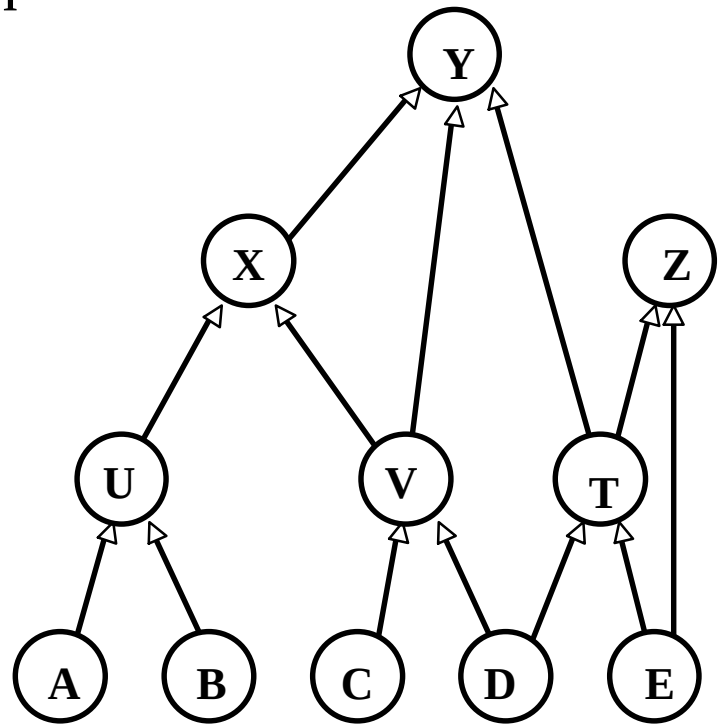
Logical Equations

- Representation
  - A directed acyclic graph including three kinds of nodes: INPUT, INTERMEDIARY, OUTPUT
  - A logical expression is associated to each Intermediary or Output node
  - A variable name is associated to each node

Behavioral View (3)

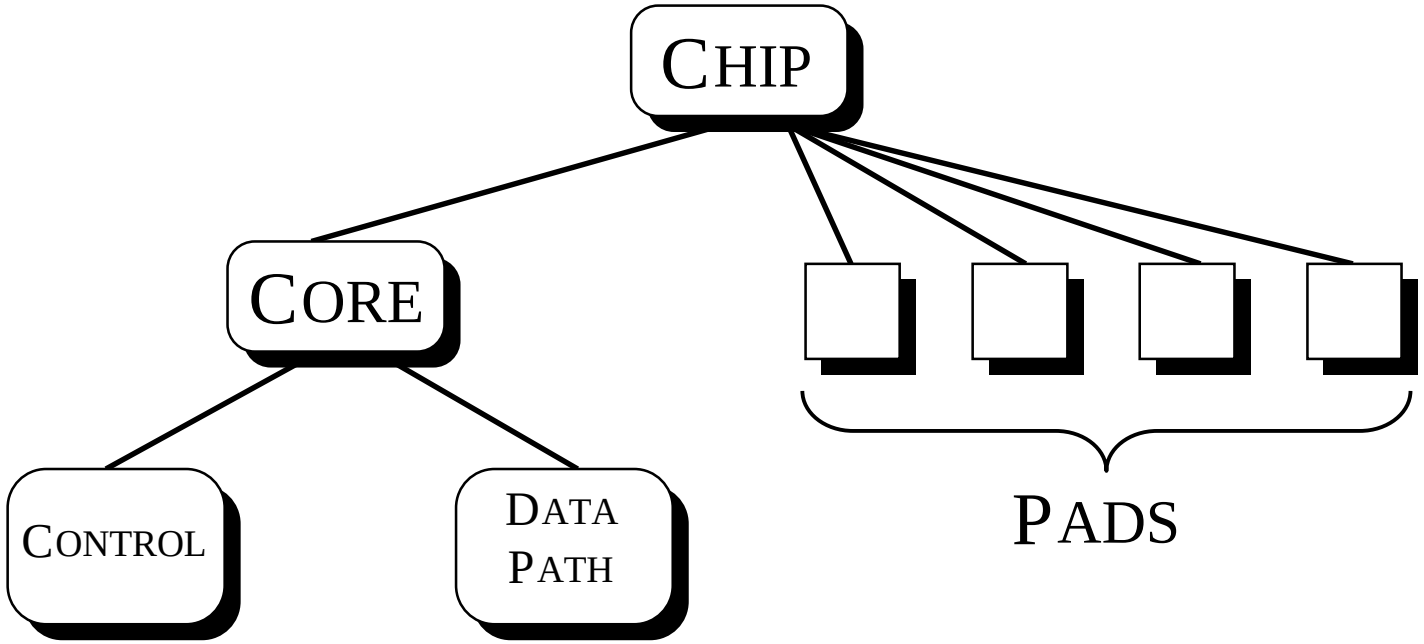
Boolean Network

- Representation



Structural View (1)

For each view, we are looking for its inherent basic concepts



Structural View (2)

For each view, we are looking for its inherent basic concepts

- In the structural view:
  - Connectors: ID, Direction, etc....
  - Signals: ID, Type (External or not), etc....
  - Instances: ID, Model Name, Ports, etc....

Layout View (1)

Symbolic Layout

- Principles:

✓ Portability

✓ Simplicity

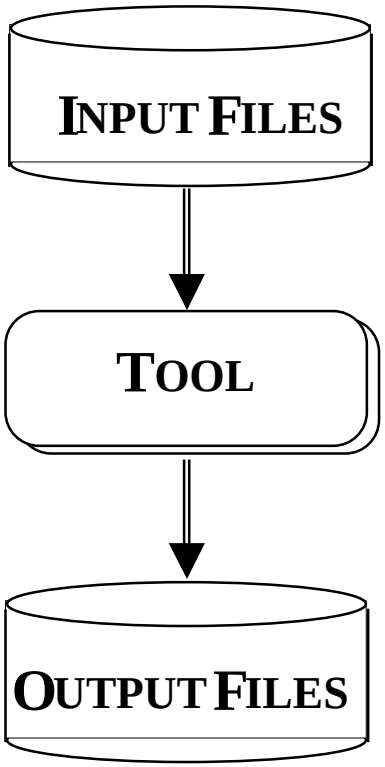
✓ Robustness

Layout View (2)

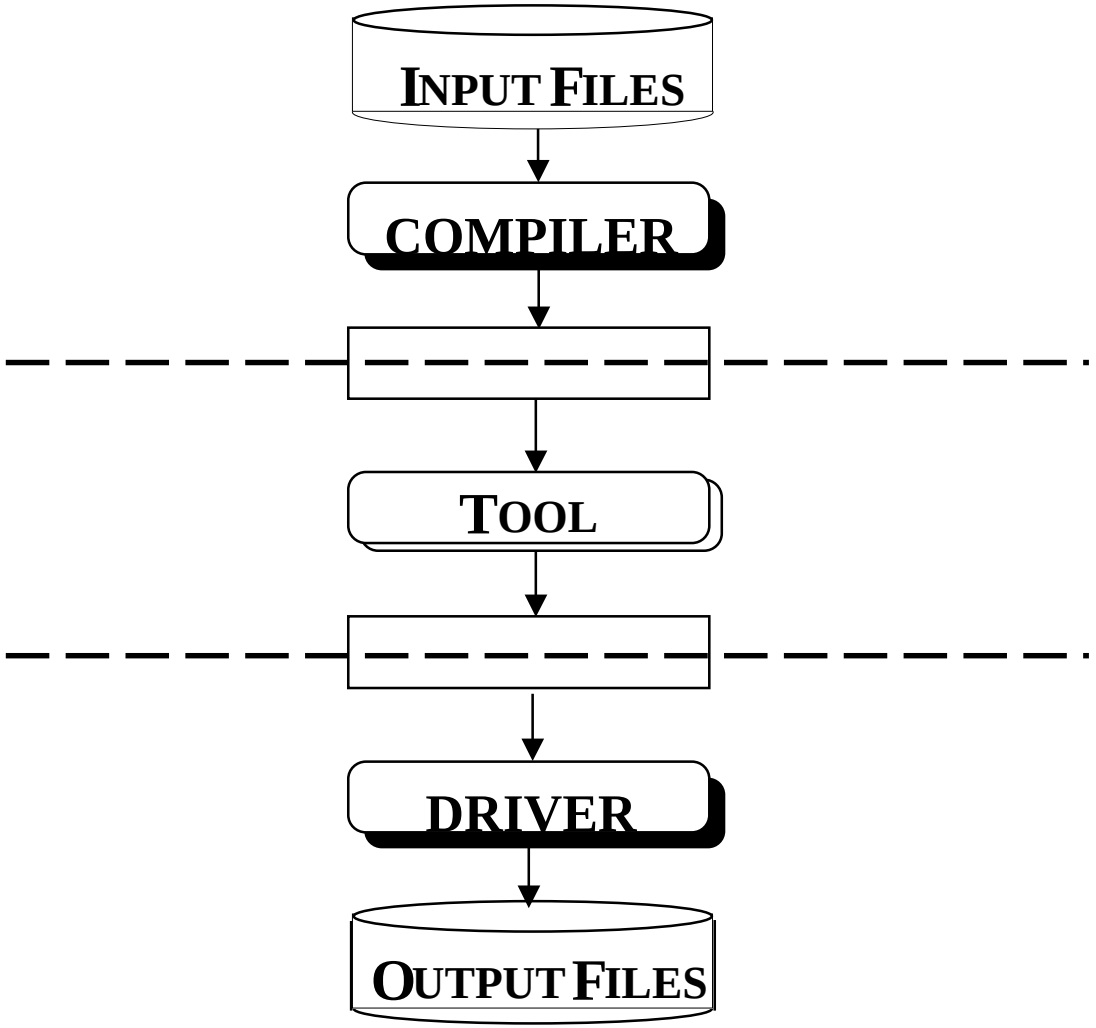
Symbolic Layout

- Our Approach
  - Thin fixed grid, symbolic layout
  - Distances form center to center ⇨ Good density
  - Special symbolic layout editor
  - Automatic translation from symbolic to physical

How to deal with these views ? (1)



How to deal with these views ? (2)



Independence (1)

One major idea in ALLIANCE is
its **independence** towards any given language

- Identify the Concepts that:

  ✧ Do not Depend on a Language

  ✧ Depend on the Abstraction Level

Independence (2)