

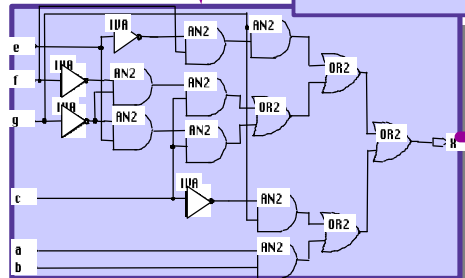
Synthesis

Synthesis = Translation + Optimization + Mapping

```
if High_Bits = "10" then
  Data_Out <= Residue;
else
  Data_Out <= "0000";
end if;
```

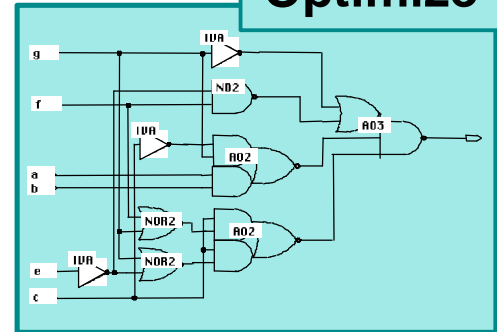
**Hardware
Description Language**

**Translate into
Boolean Representation**










**Generic Boolean
(GTECH)**

Optimize + Map



Target Technology

 **Coding style is a key element in synthesis, but other design issues must also be addressed:**

-  **Hardware timing goals**
-  **Hardware area goals**
-  **Environmental constraints**
-  **Environmental attributes**
-  **Power management goals**
-  **Design-For-Test rules**
-  **Target library design rules**

Forces Driving the Synthesis Algorithms

