

$\Phi$ -elimination Primitive  
(To replace  $\Phi$  statement with multiple assignment statements)

Shadow Register Primitive  
(To store values in intermediate registers to prevent Read After Write hazards)

Interchange Primitive  
(To interchange two adjacent steps if no read write hazards)

Branch Primitive  
(To add and remove branches while maintaining control flow)

Superstep Construction Primitive  
(to overlap iterations based on pipeline interval while maintaining control and data dependencies)