



Bölüm 10: Paralel Algoritmalar

Algoritmalar



Birlikte Daha Hızlı

- Bazı işleri bitirmek için daha fazla zamana ihtiyaç olur.
- Paralel algoritmalar işleri hızlandırmak için bir çözüm sunar!
- Bir problemi aynı anda birden fazla işlemci kullanarak çözmeyi sağlar.
- Karmaşık görevleri çok daha kısa sürede tamamlayabilir.



Paralel Algoritmalar

- Bir grup insanın birlikte çalışmasına benzetilebilir.
- Paralel algoritmalar karmaşık bir problemi daha küçük parçalara ayırır.
- Bu parçaları aynı anda birden fazla işlemciye atayarak işi hızlandırır.
- İşlemciler görevlerini tamamladıktan sonra sonuçlar birleştirilir.
- Yüksek performanslı hesaplama (HPC) uygulamalarının temelini oluşturur.
- Büyük veri setlerinin analizi, bilimsel simülasyonlar gibi alanlarda faydalı.

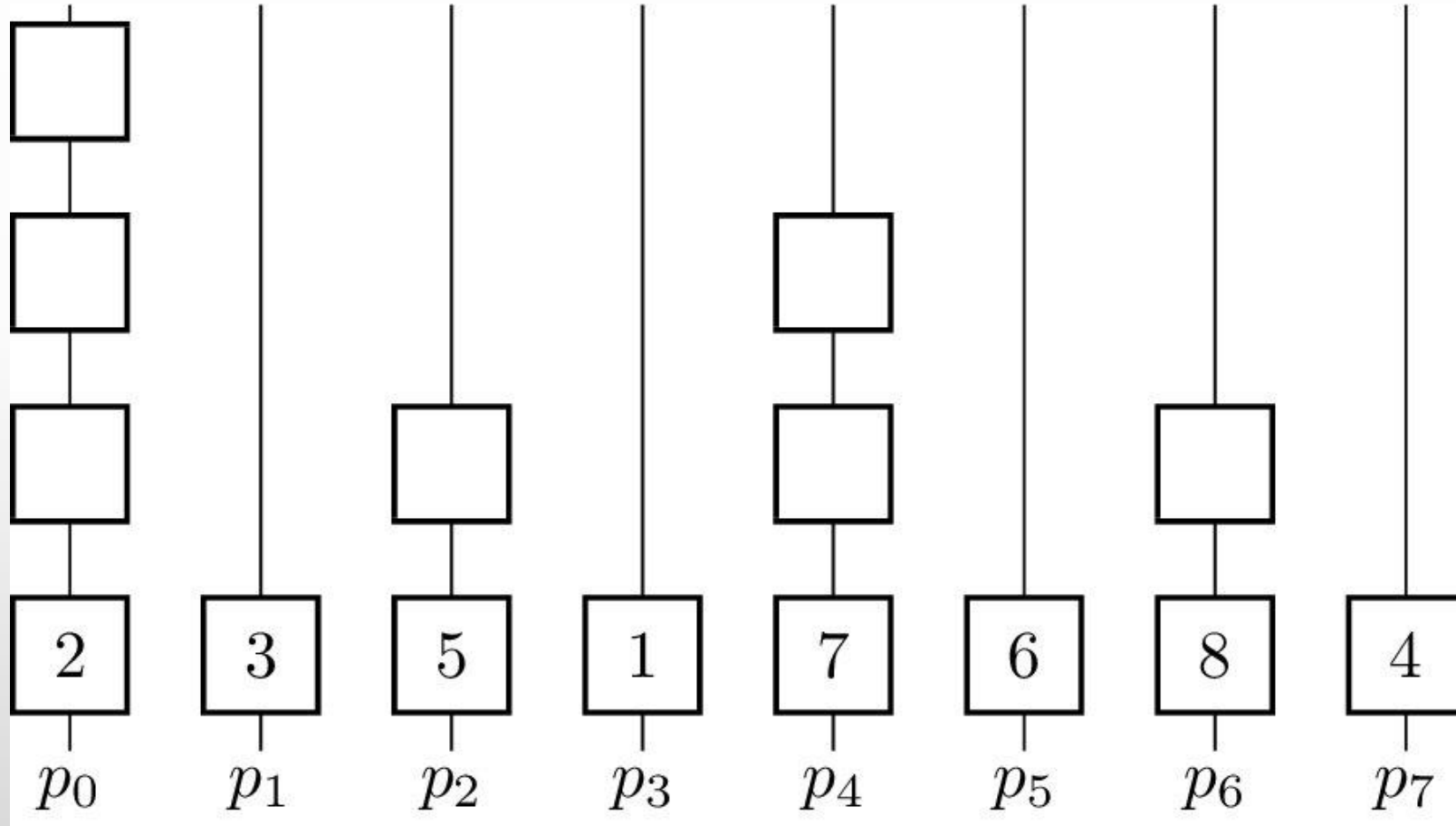


Dezavantajları

- Problemleri parçalara ayırmak ve sonra birleştirmek ek bir çaba gerektirir.
- Tüm işlemcilerin yeterli işlem gücüne sahip olması gerekir.
- Programların hata ayıklama işlemleri daha karmaşık olabilir.
- Bazı problemler yapısı gereği paralel algoritmalara uygun olmayabilir.

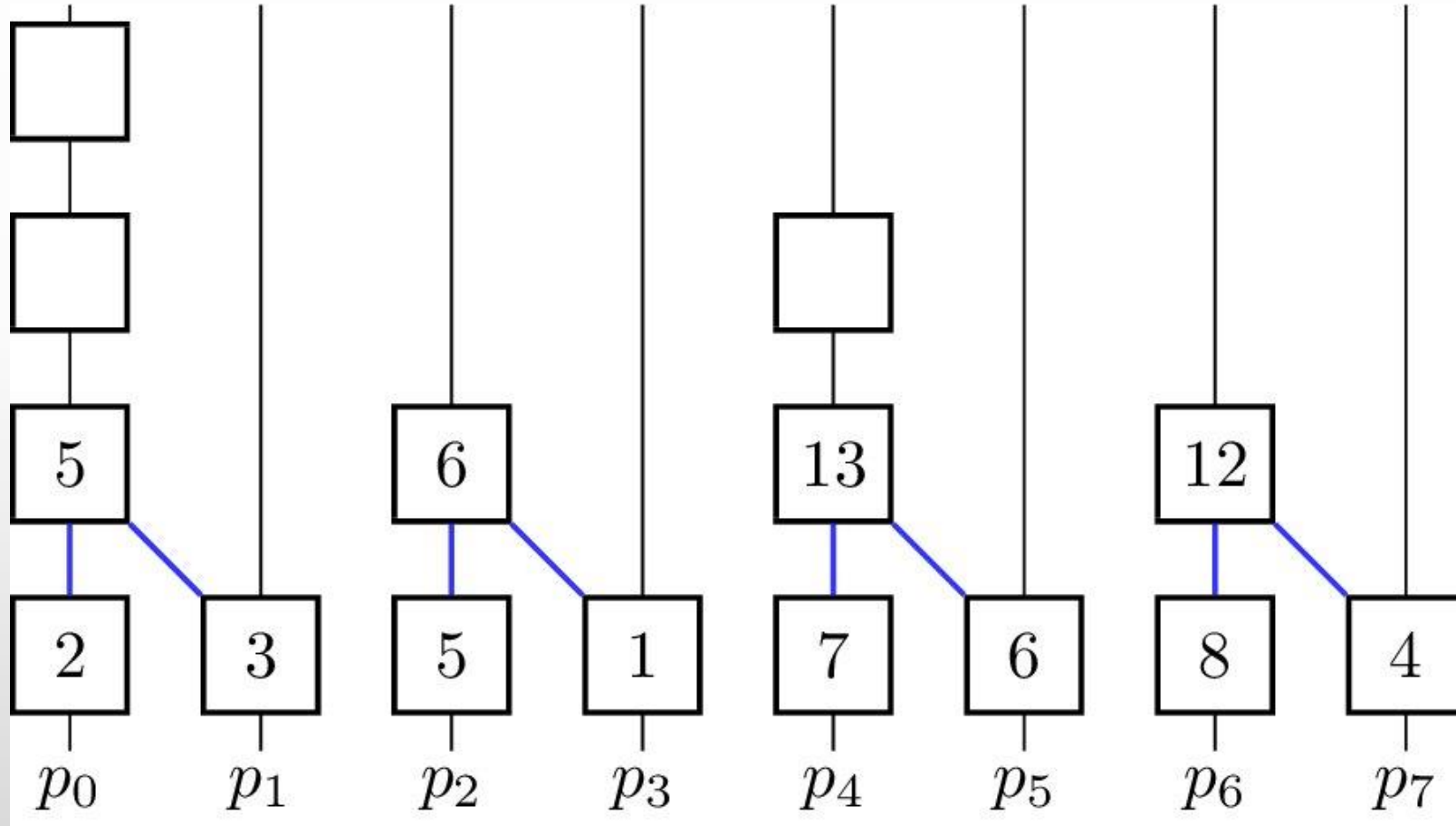


PRAM Algorithm



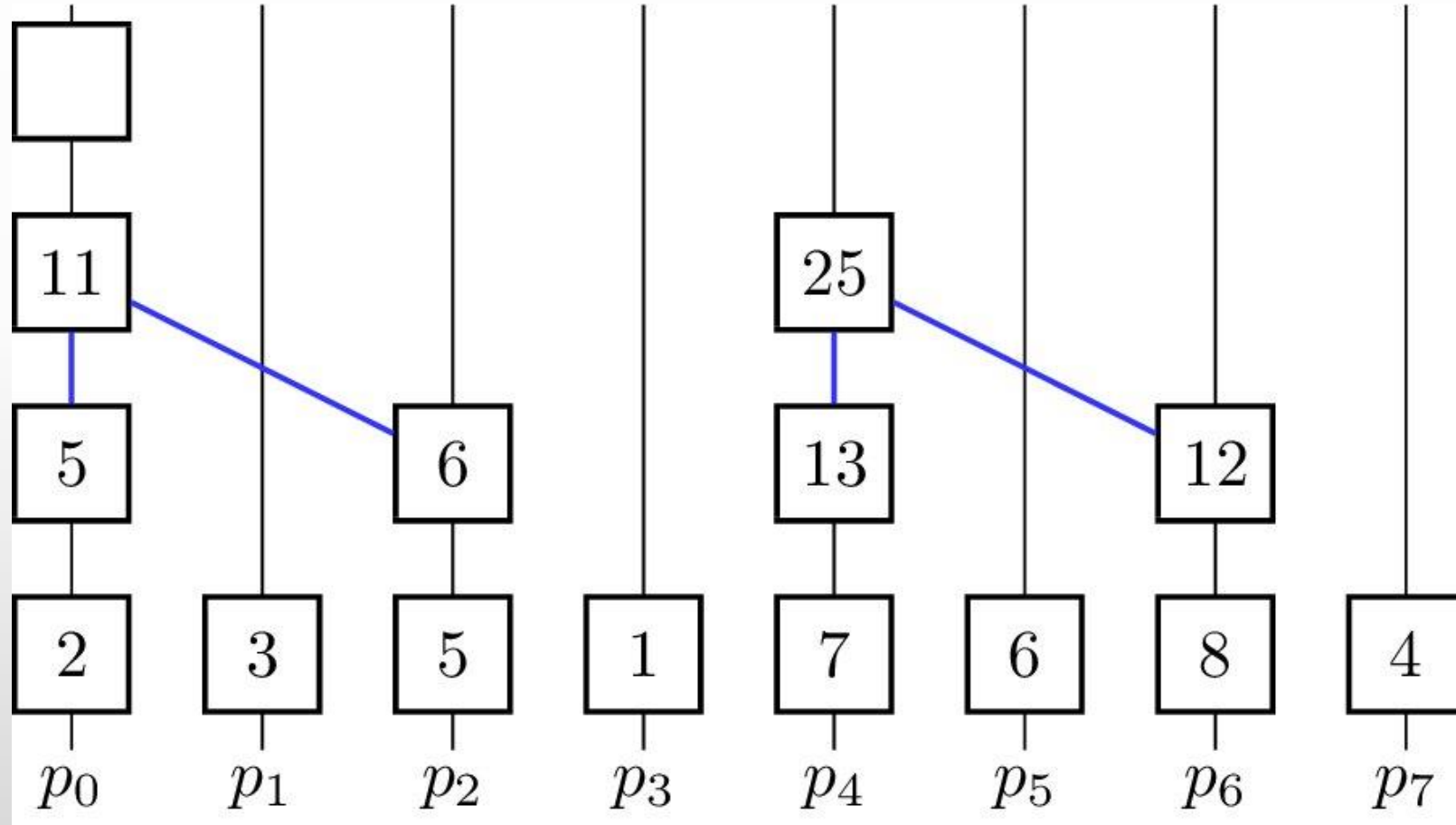


PRAM Algorithm



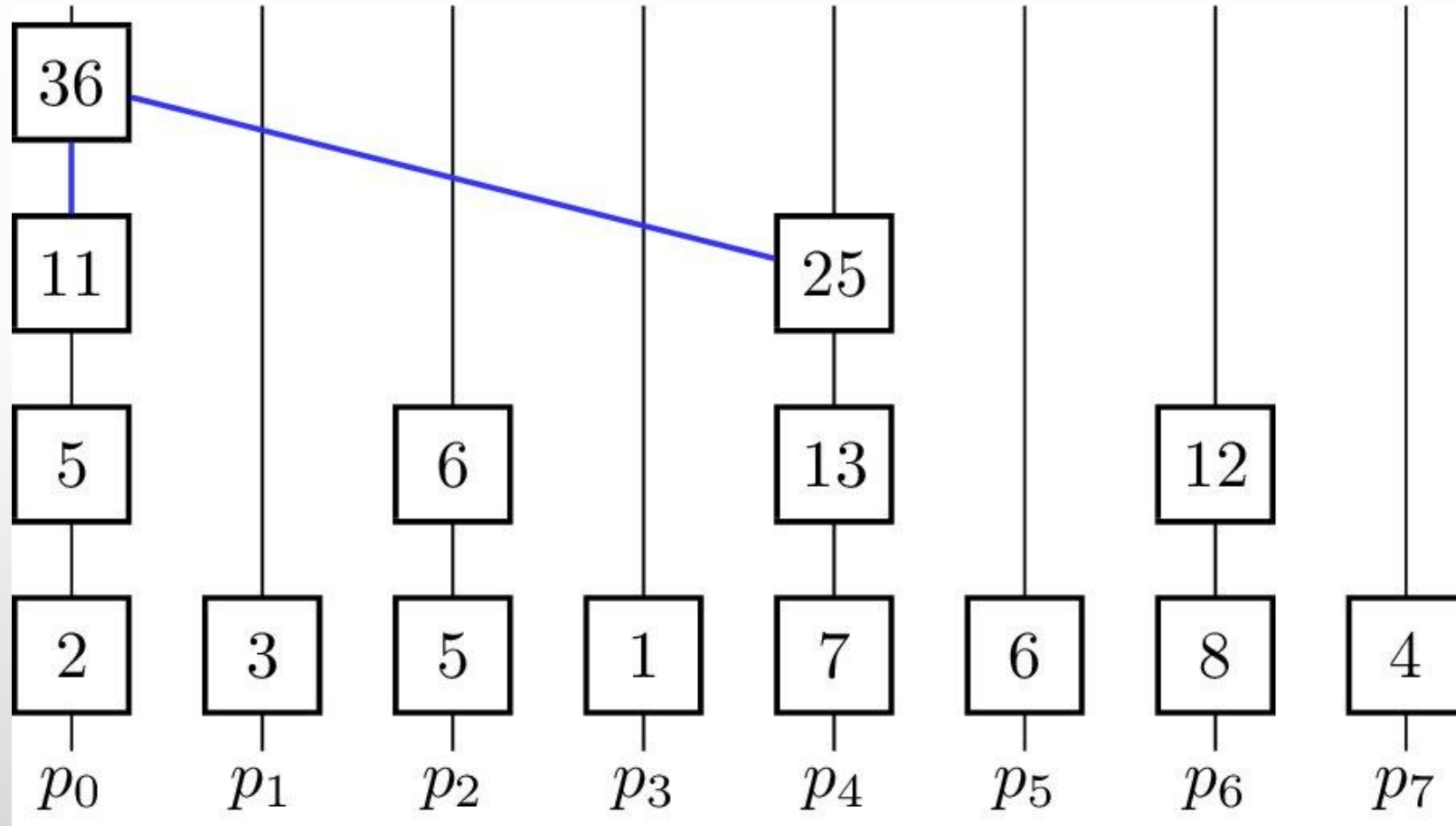


PRAM Algorithm





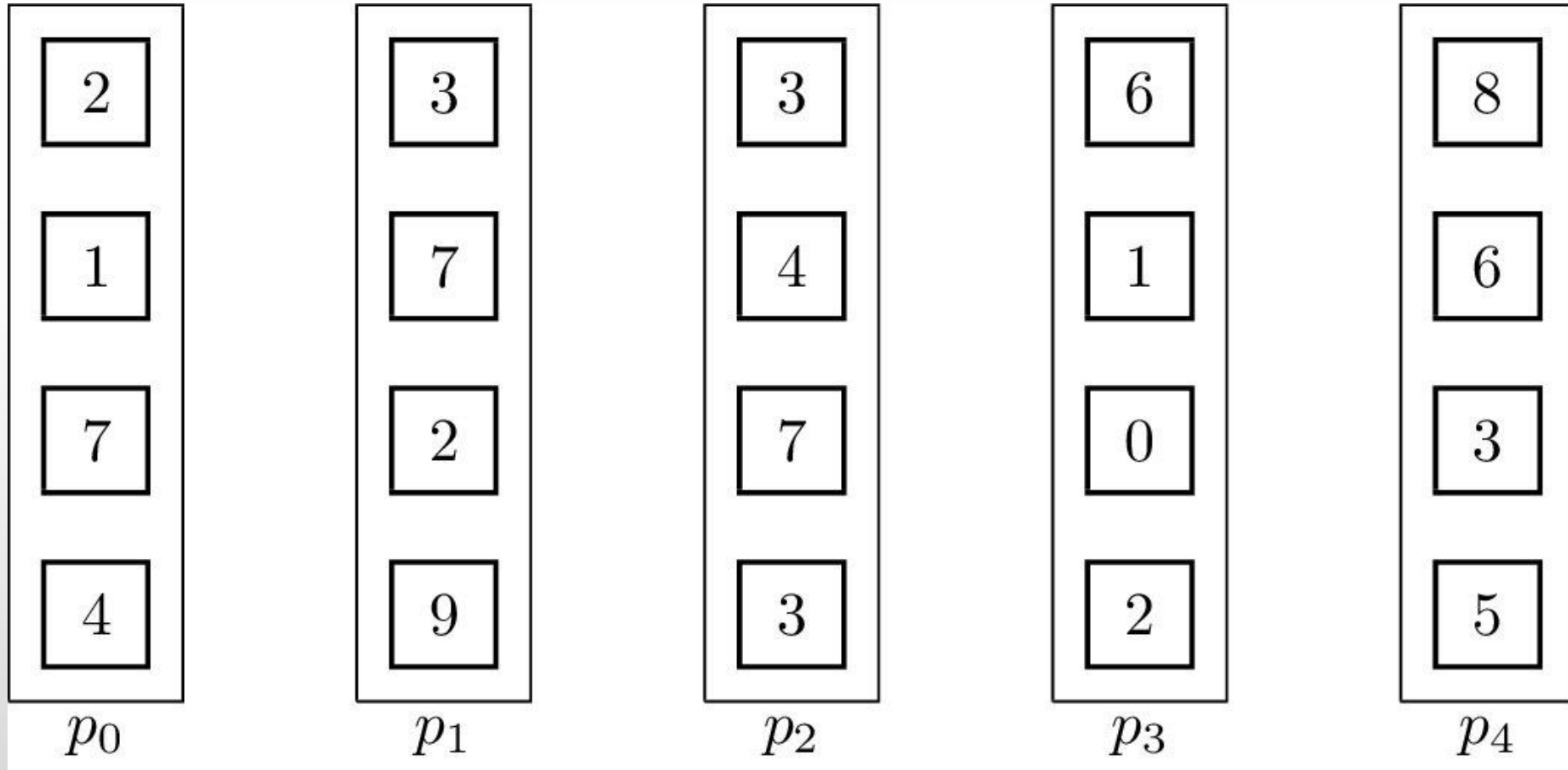
PRAM Algorithm





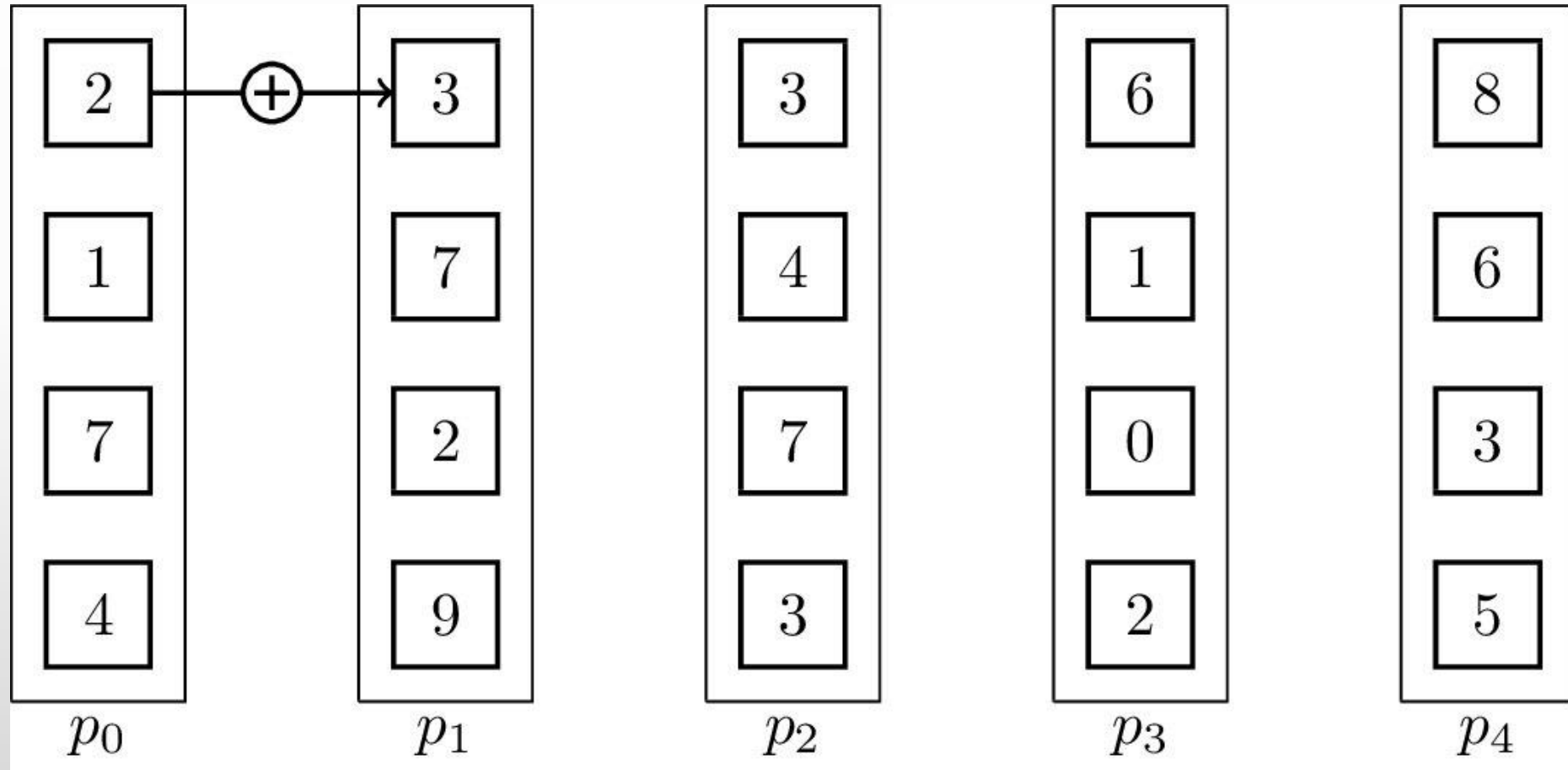


Pipeline Algorithm



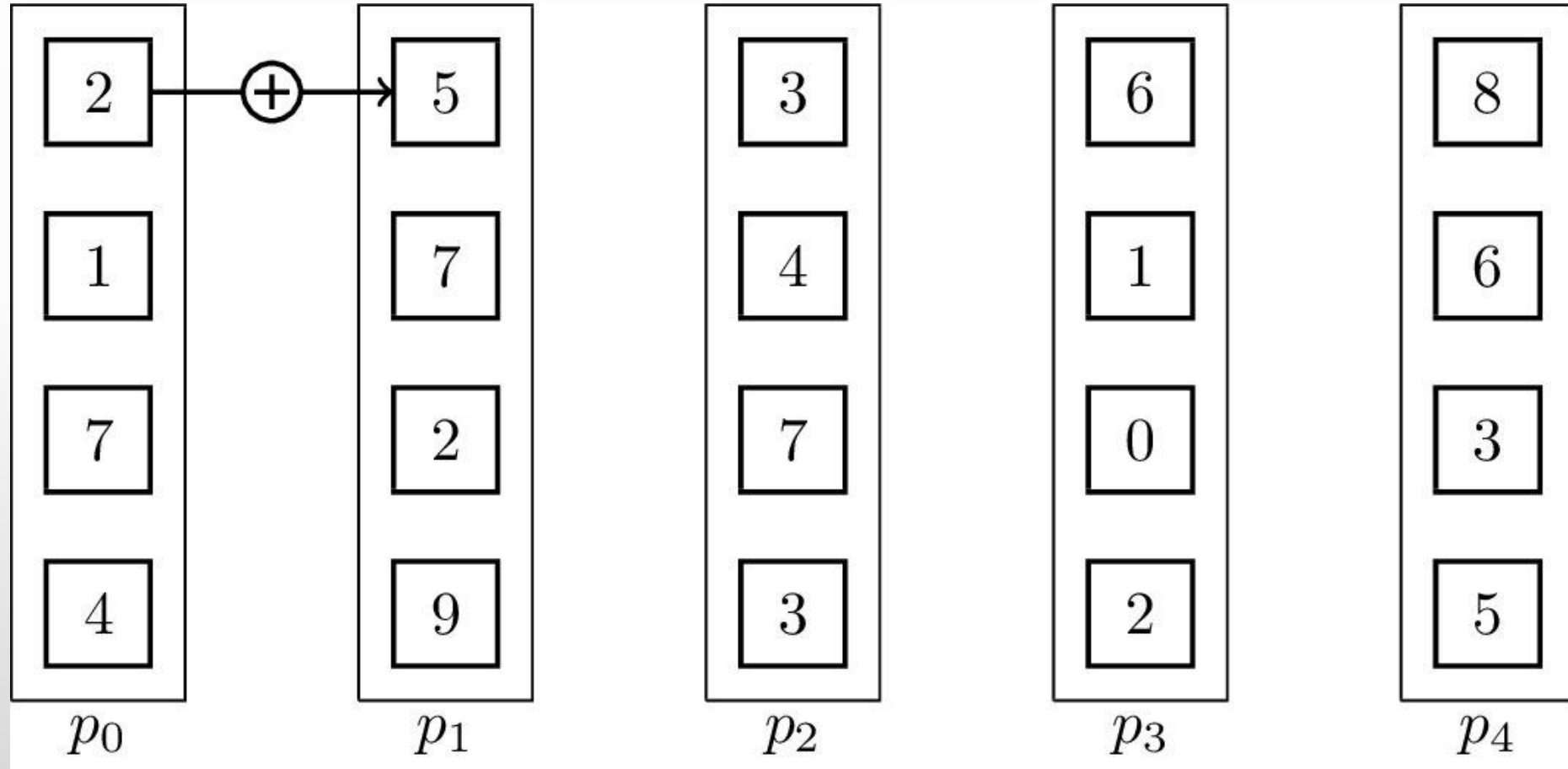


Pipeline Algorithm



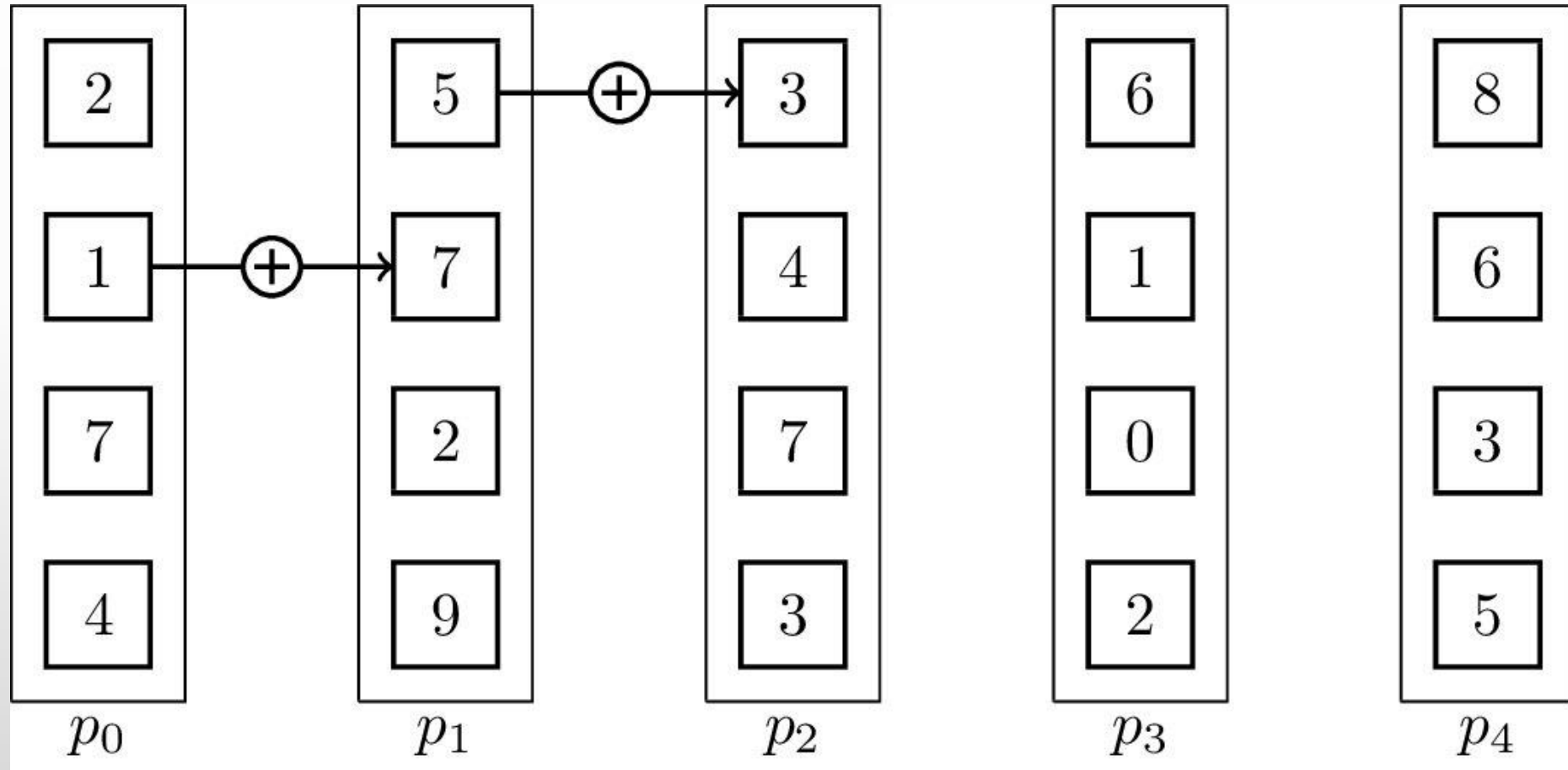


Pipeline Algorithm



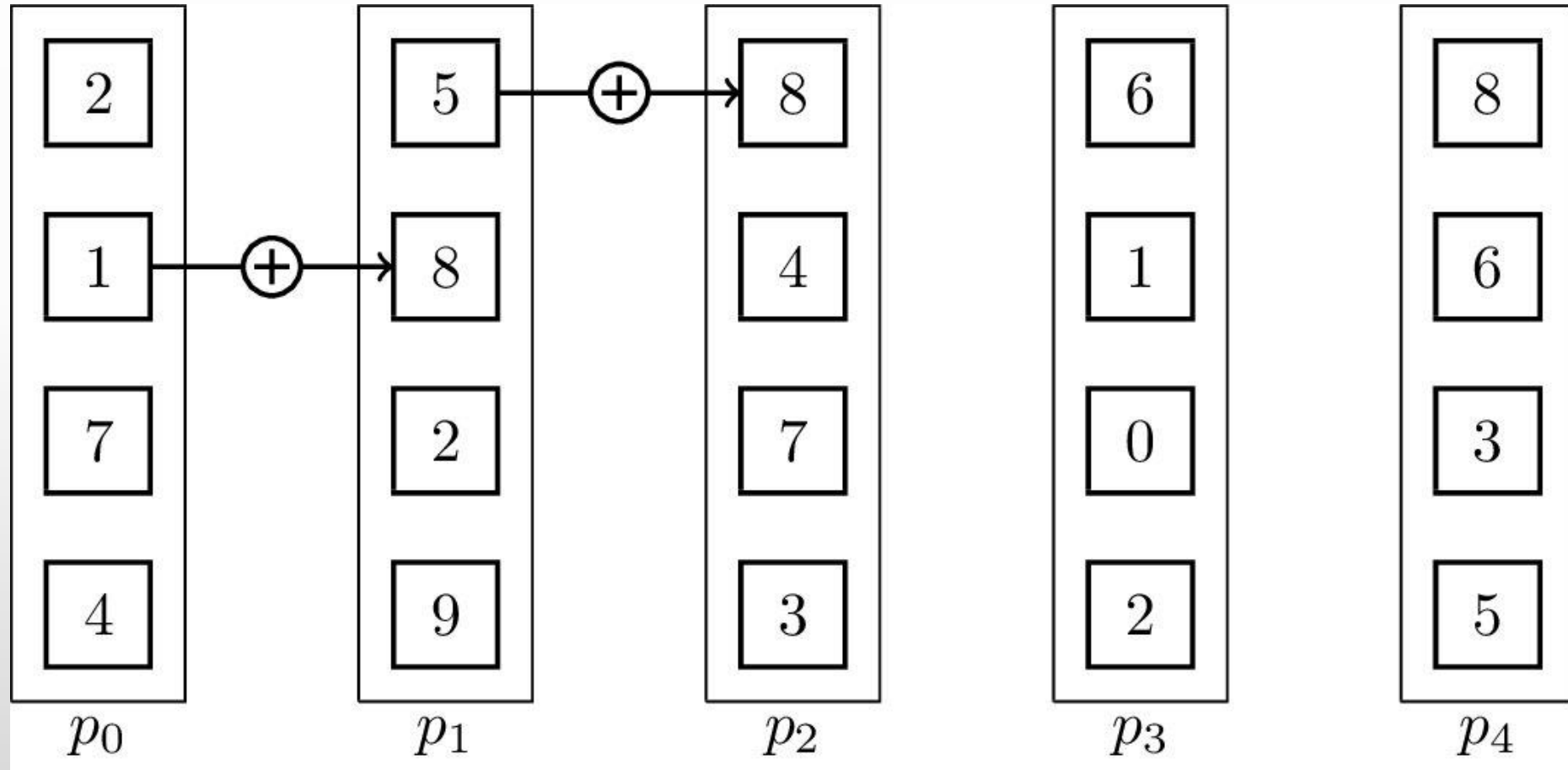


Pipeline Algorithm



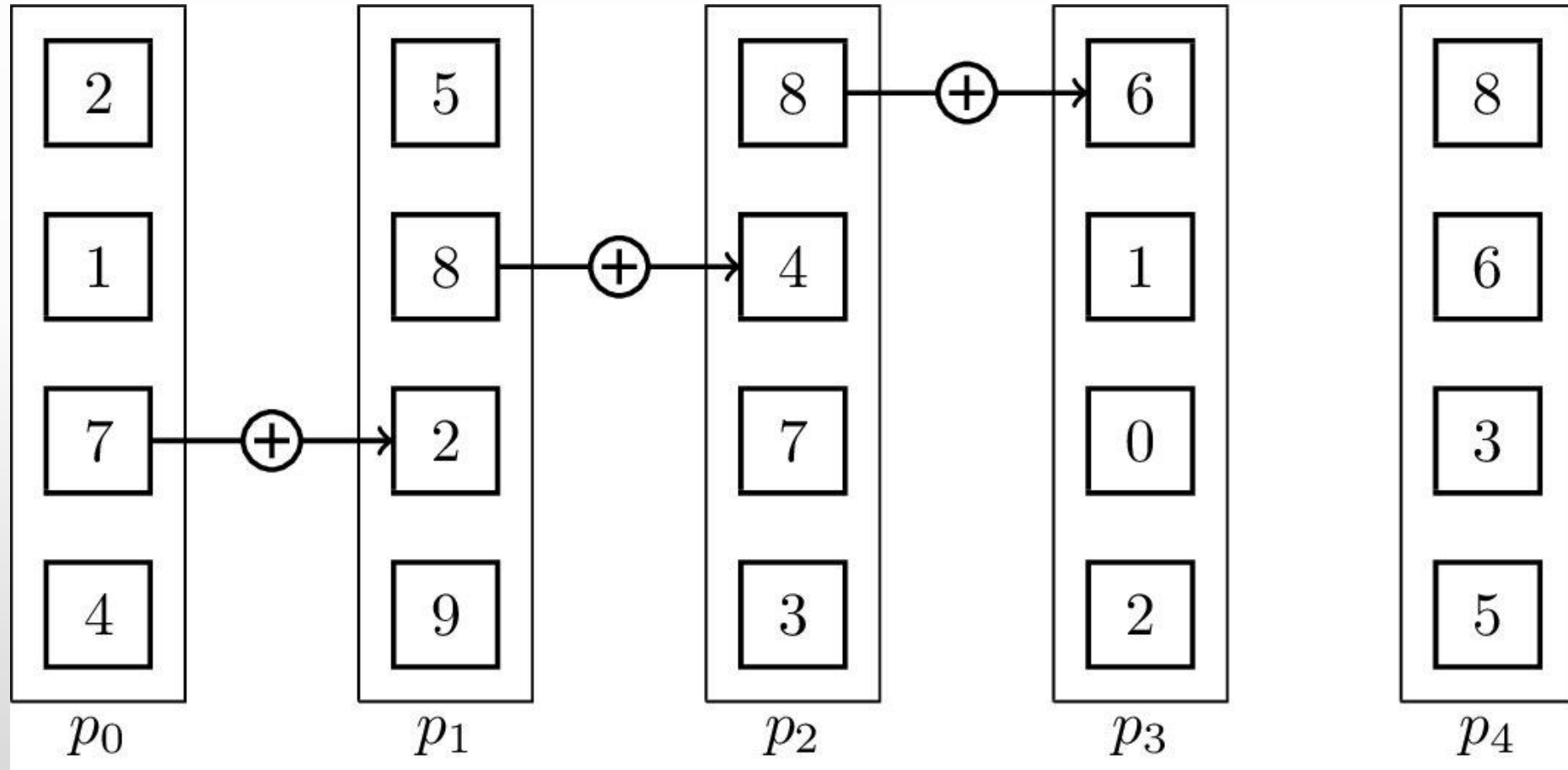


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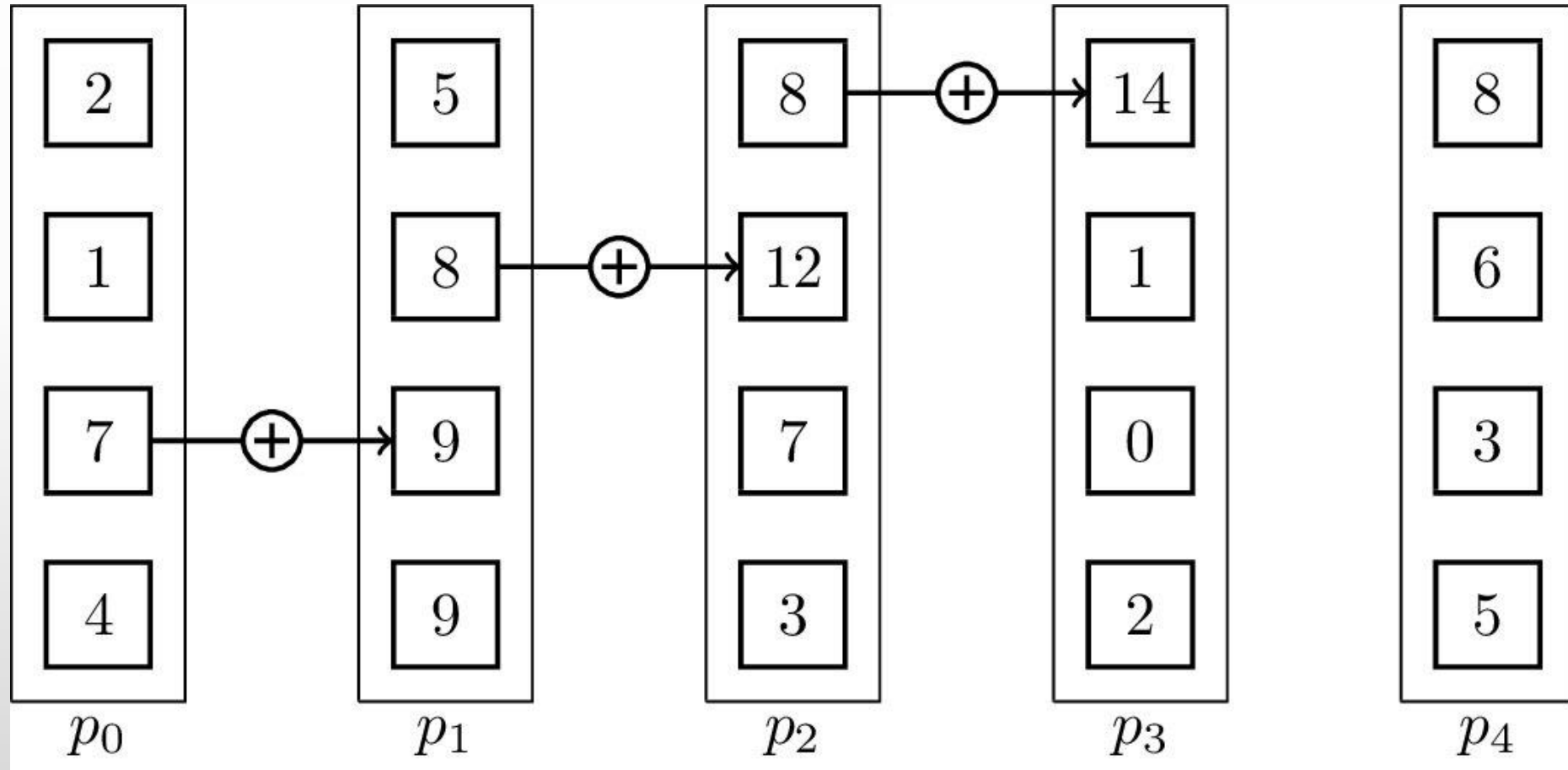


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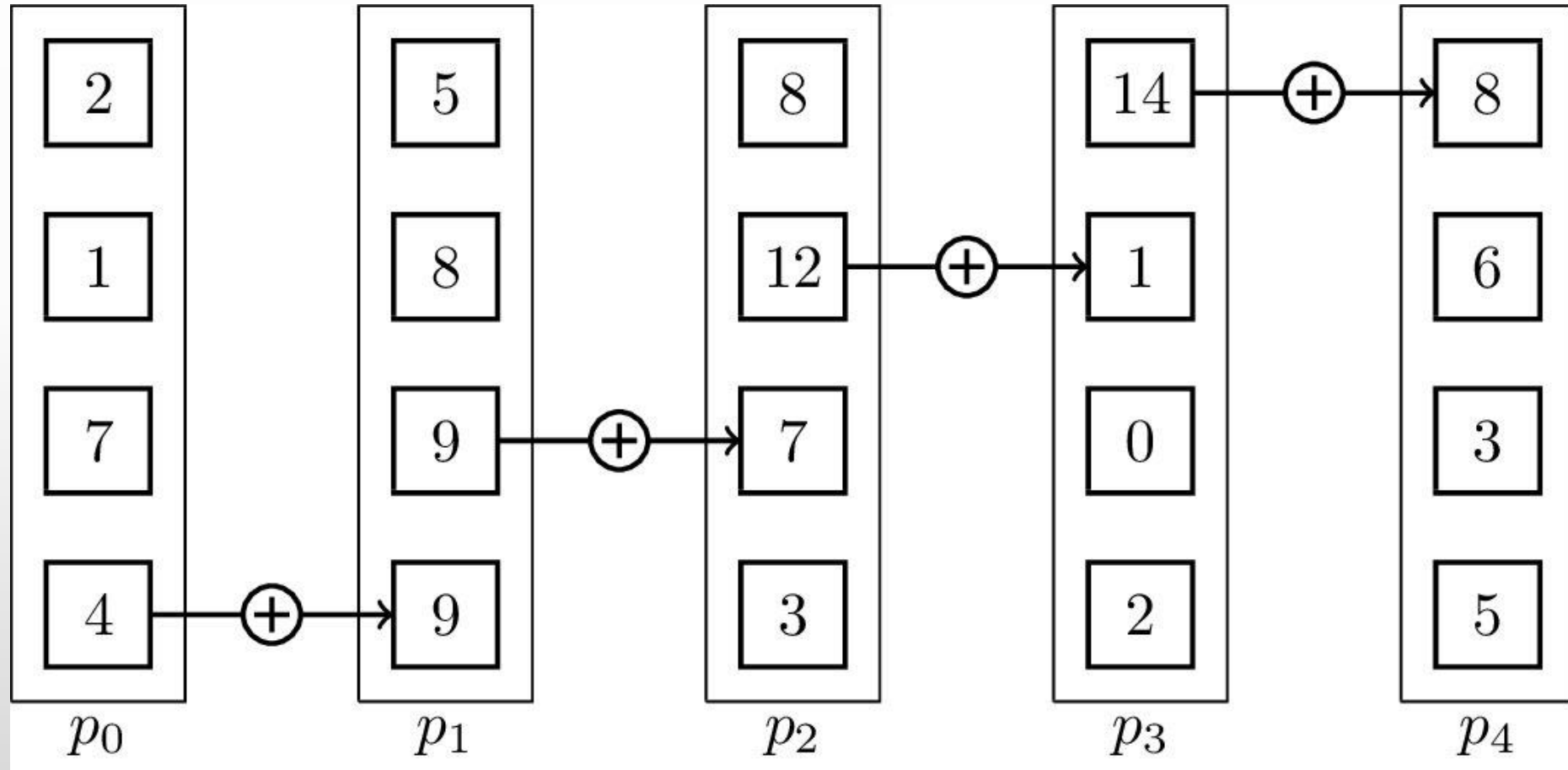


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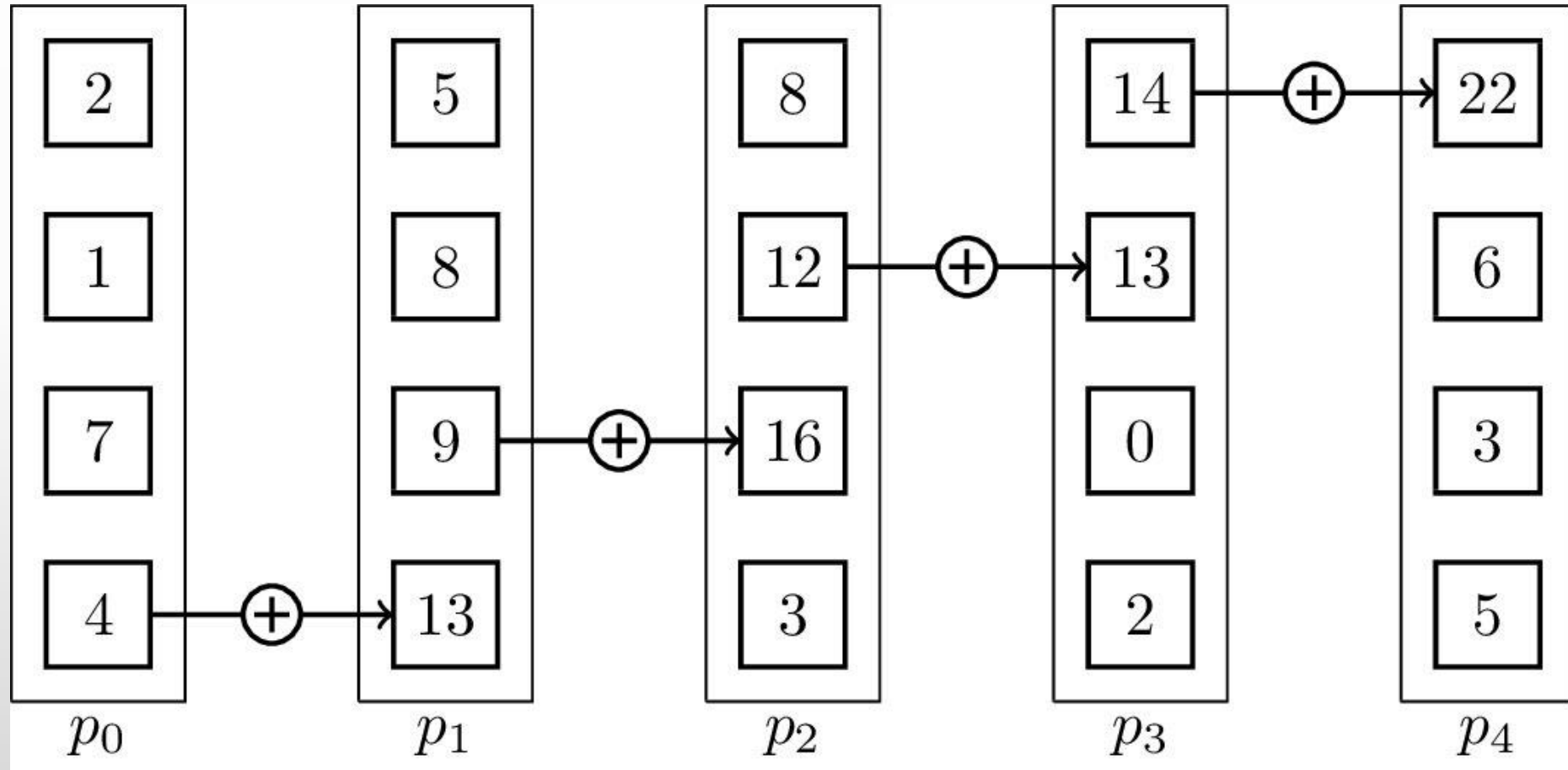


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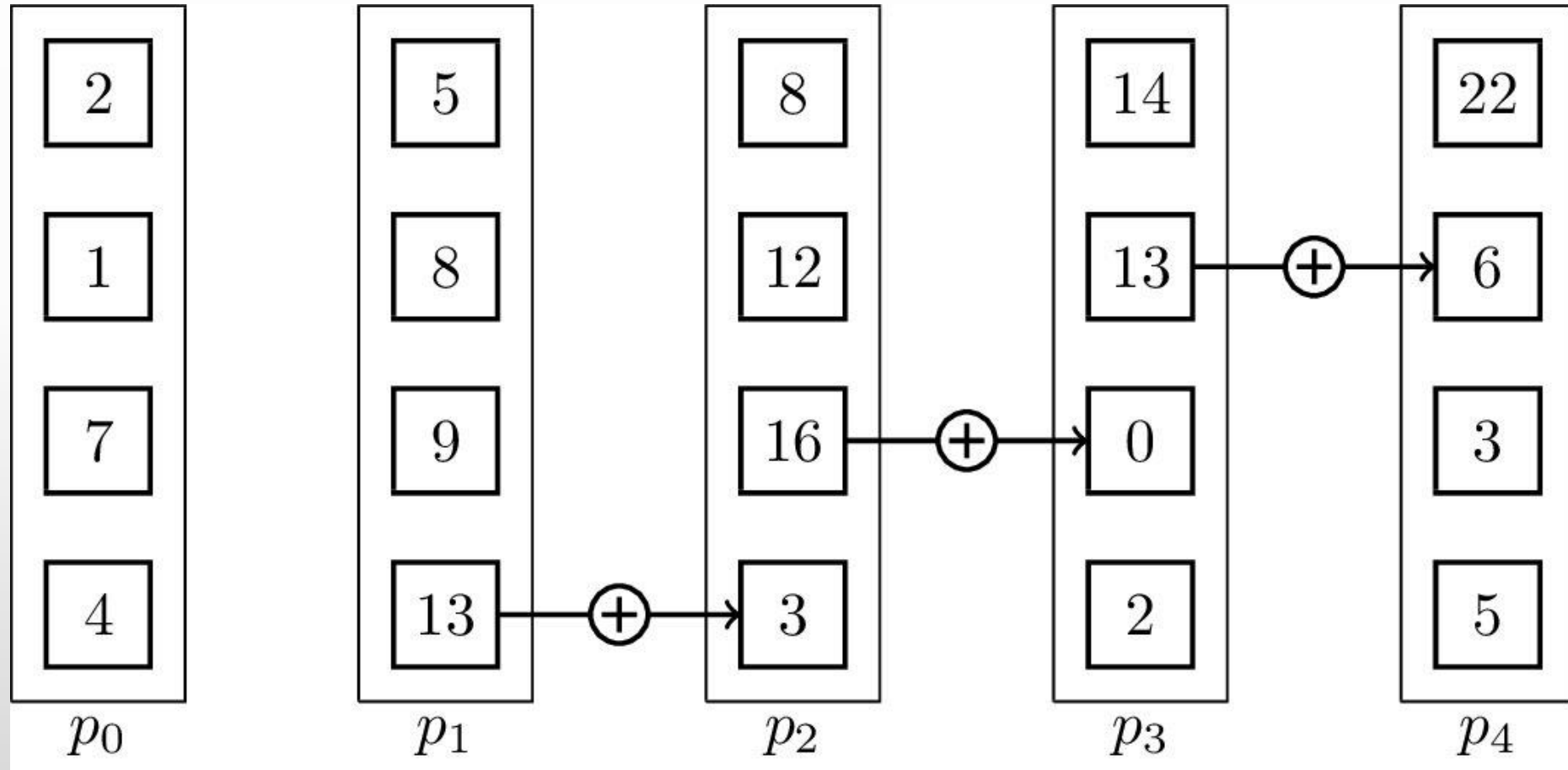


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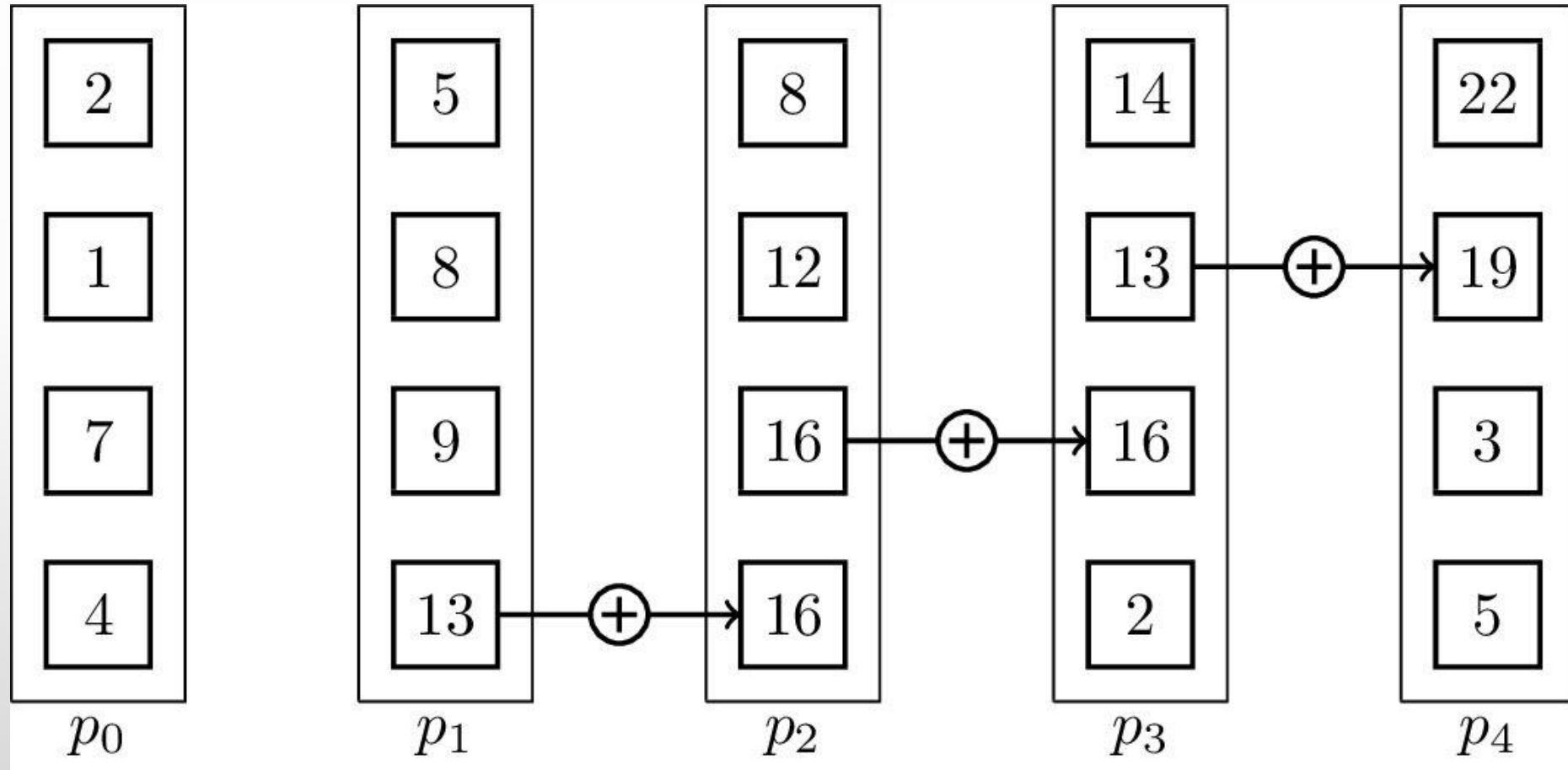


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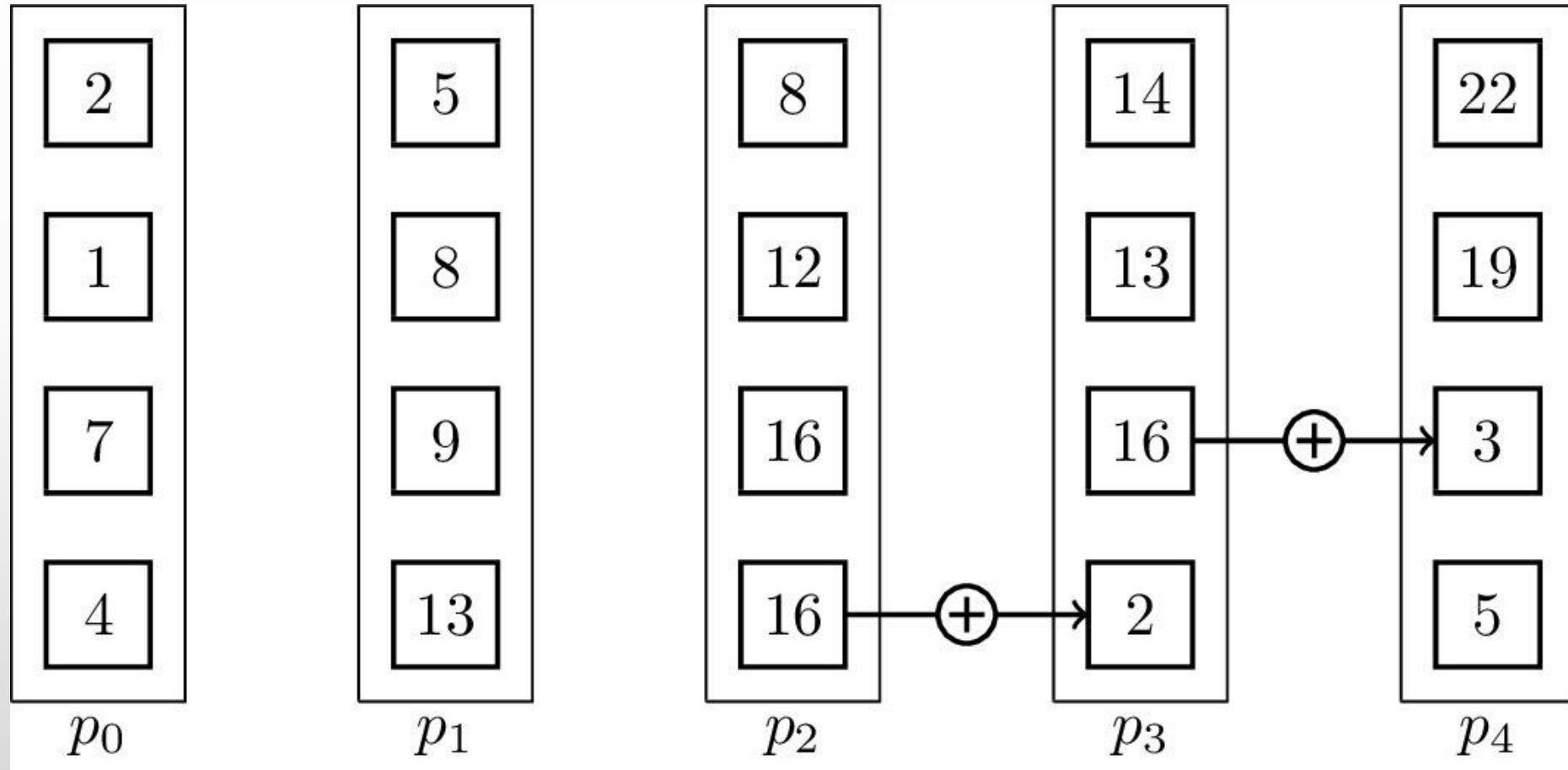


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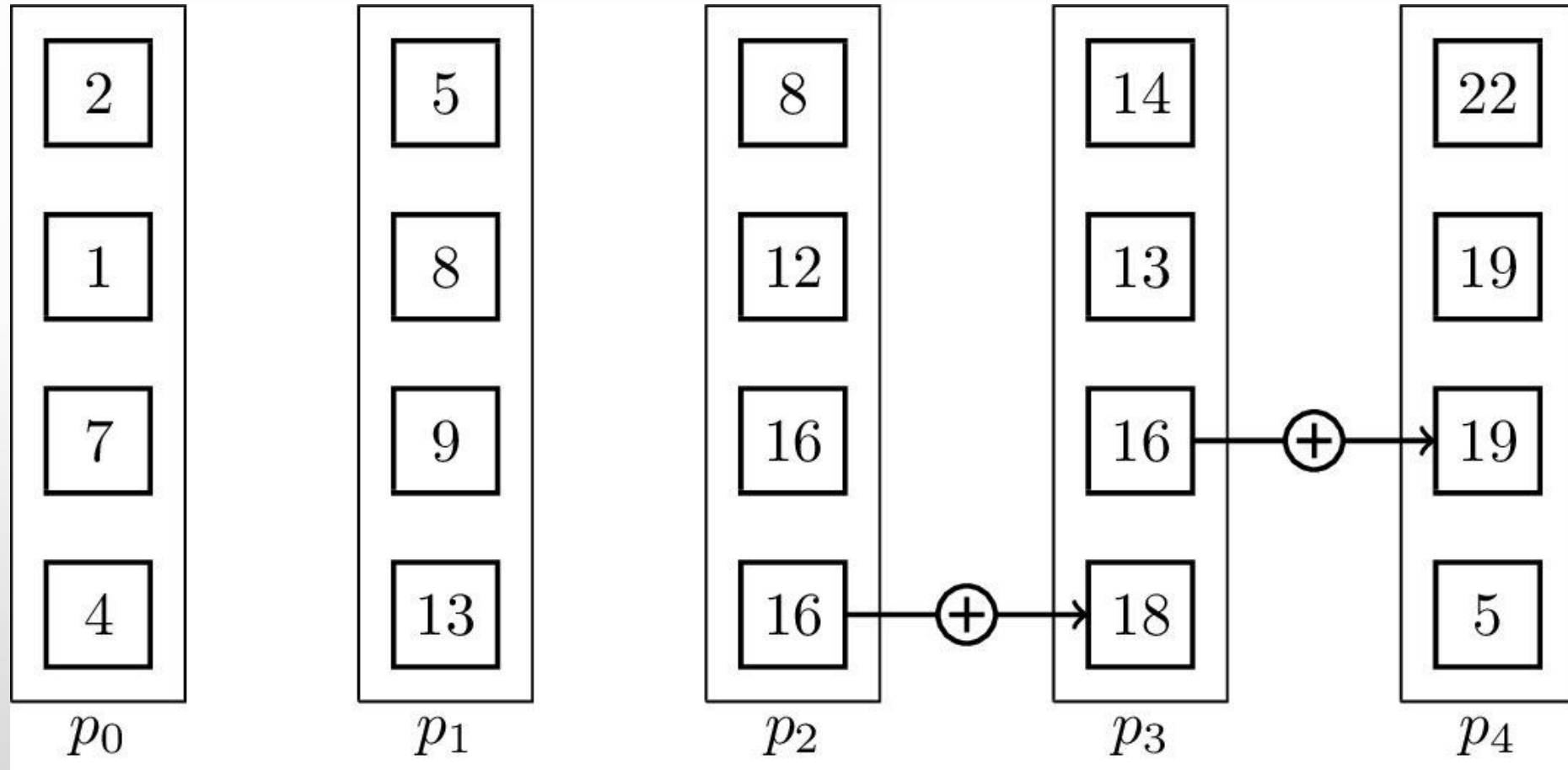


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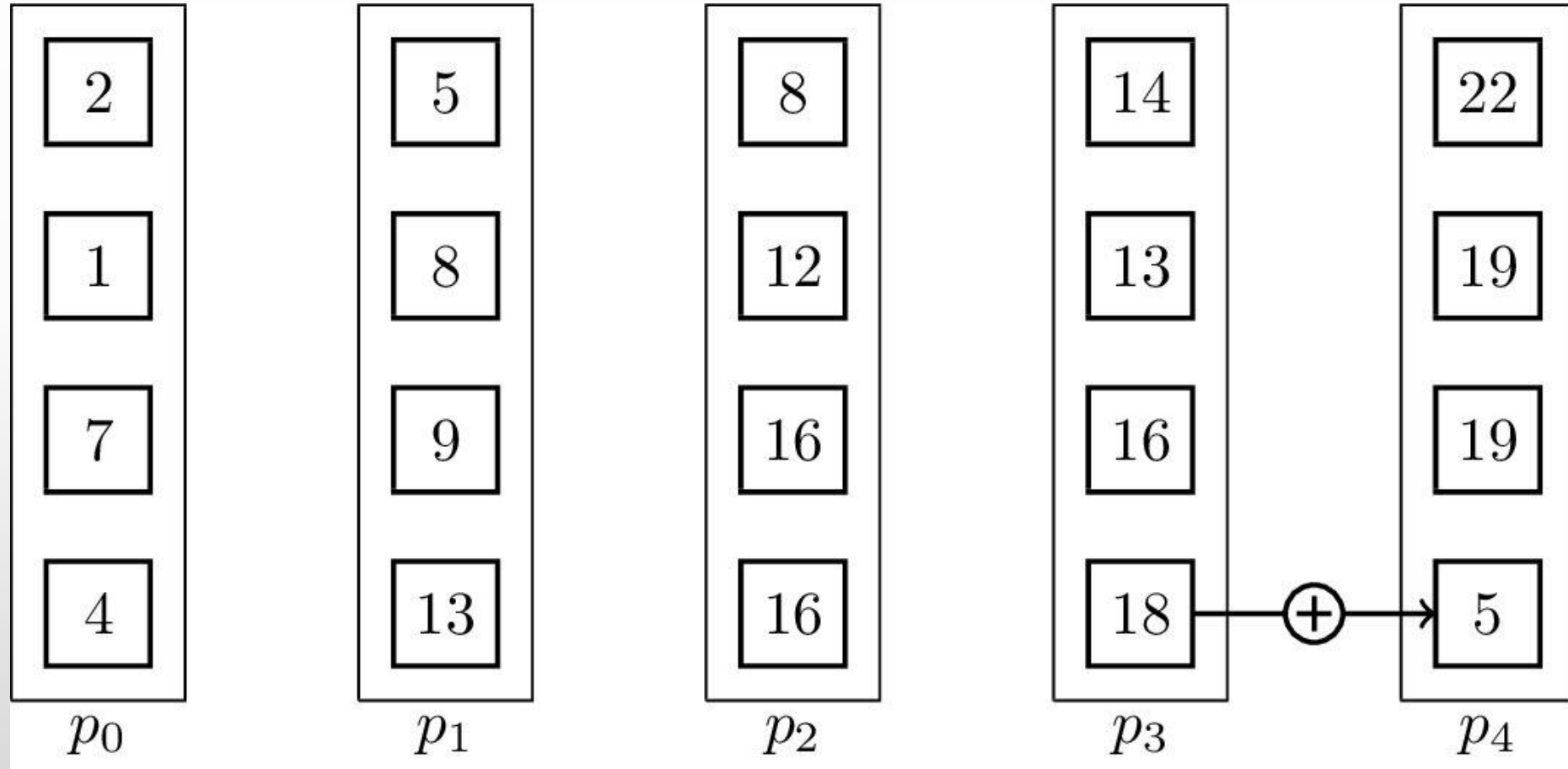


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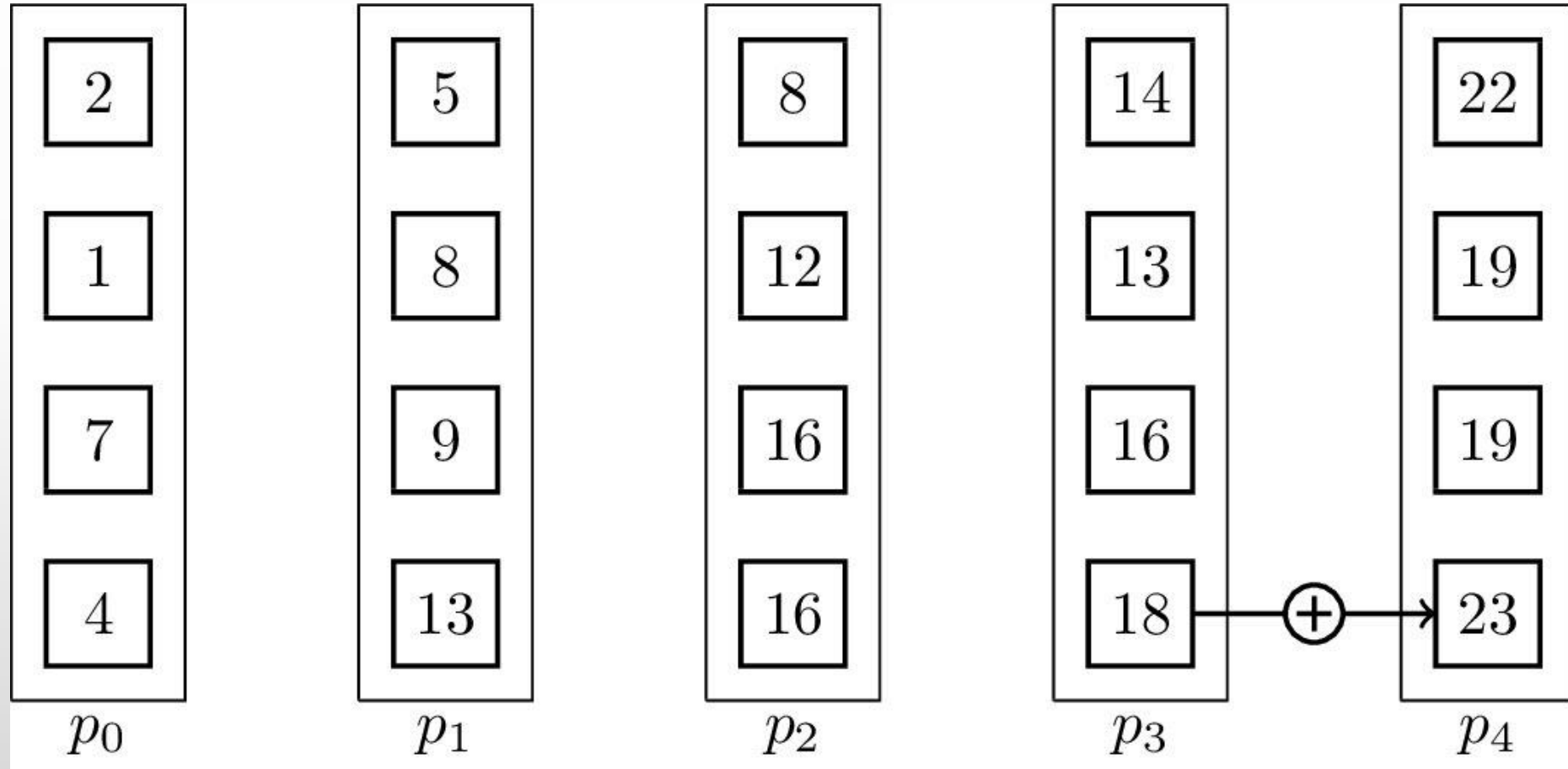


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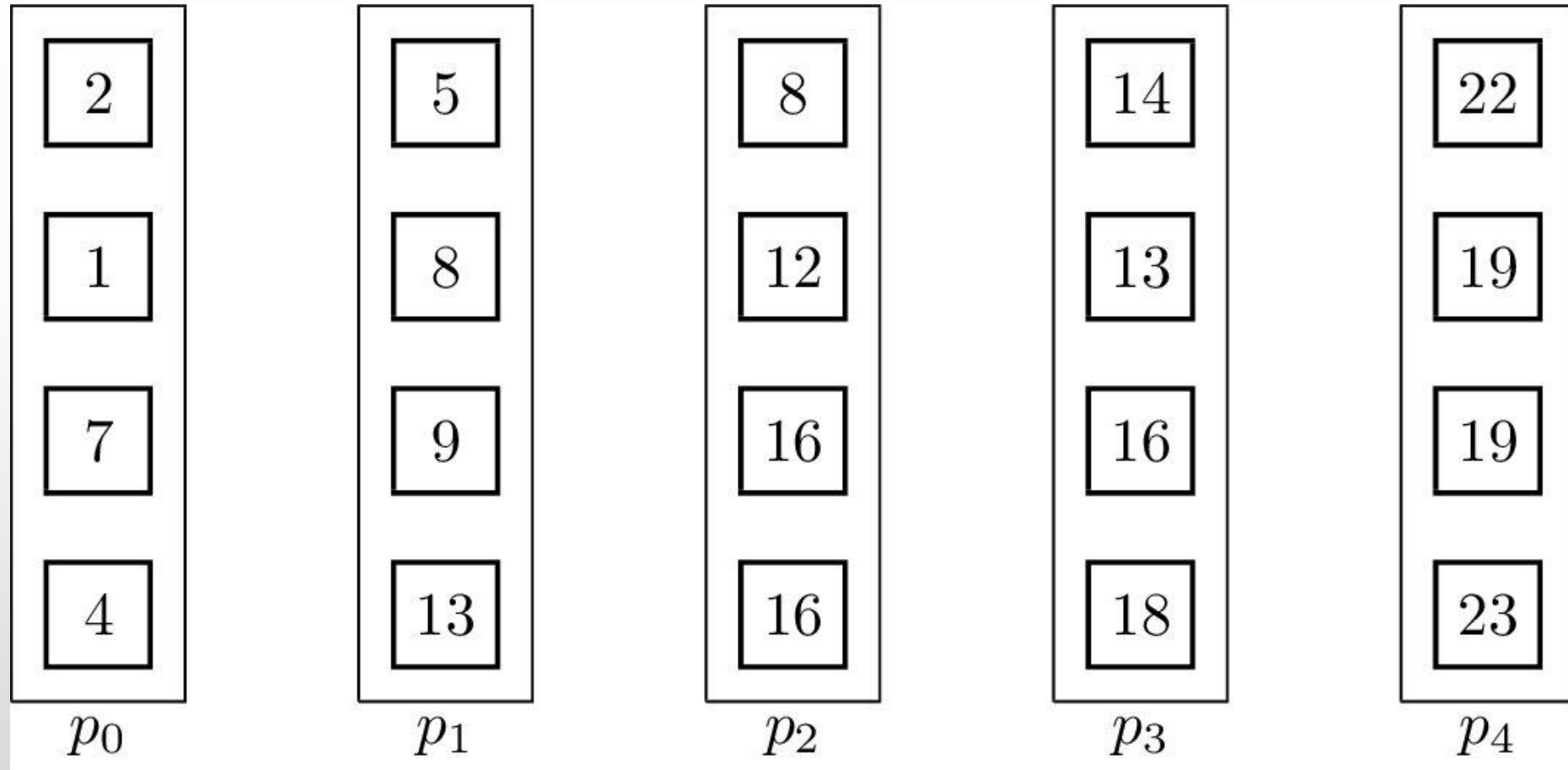


Pipeline Algorithm





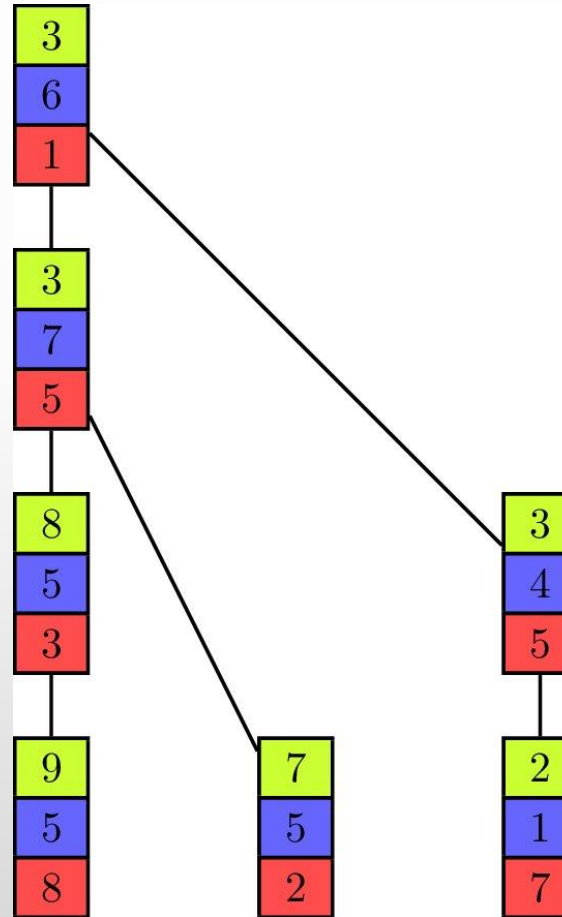
Pipeline Algorithm





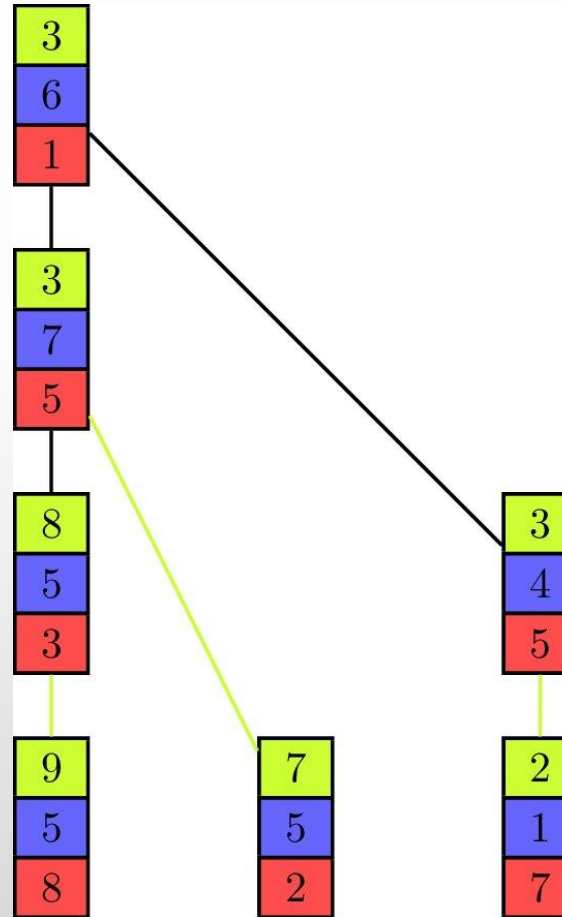


Pipelined Tree



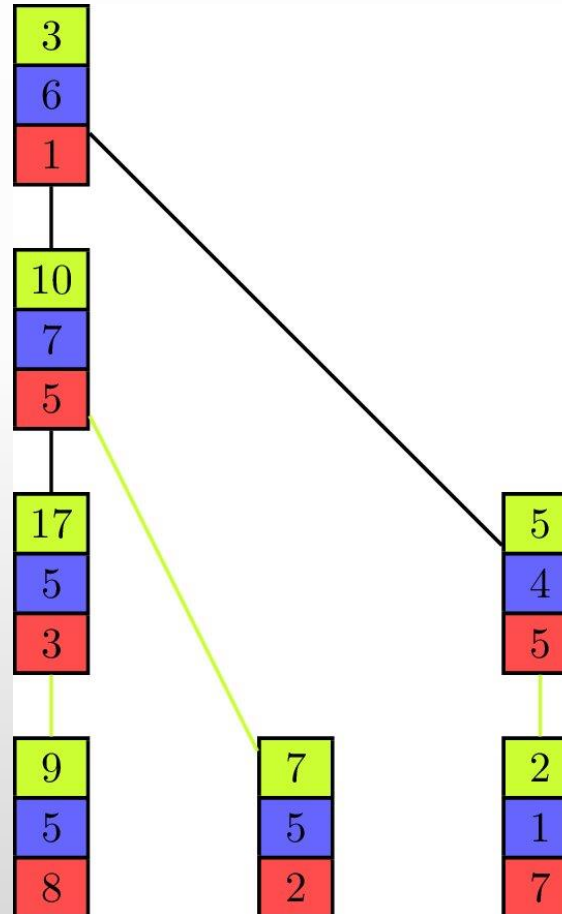


Pipelined Tree



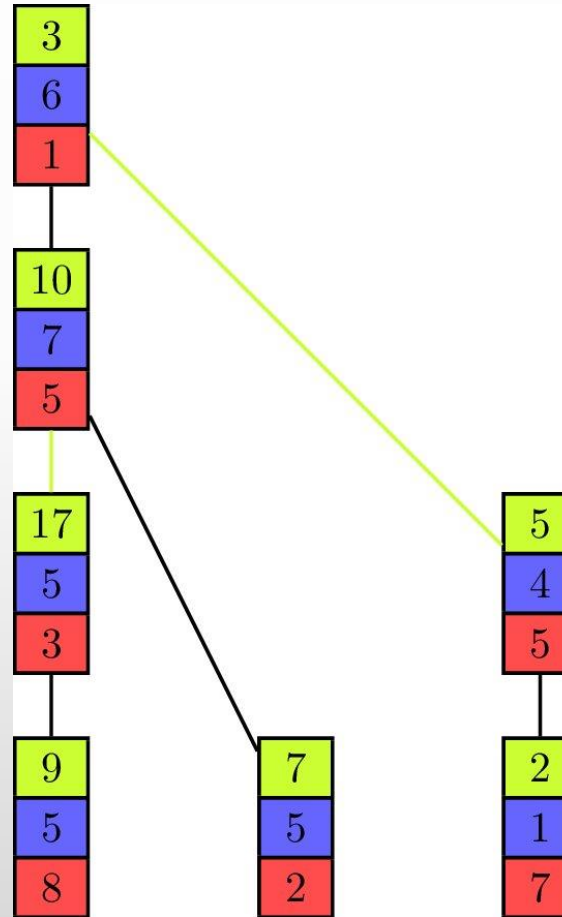


Pipelined Tree



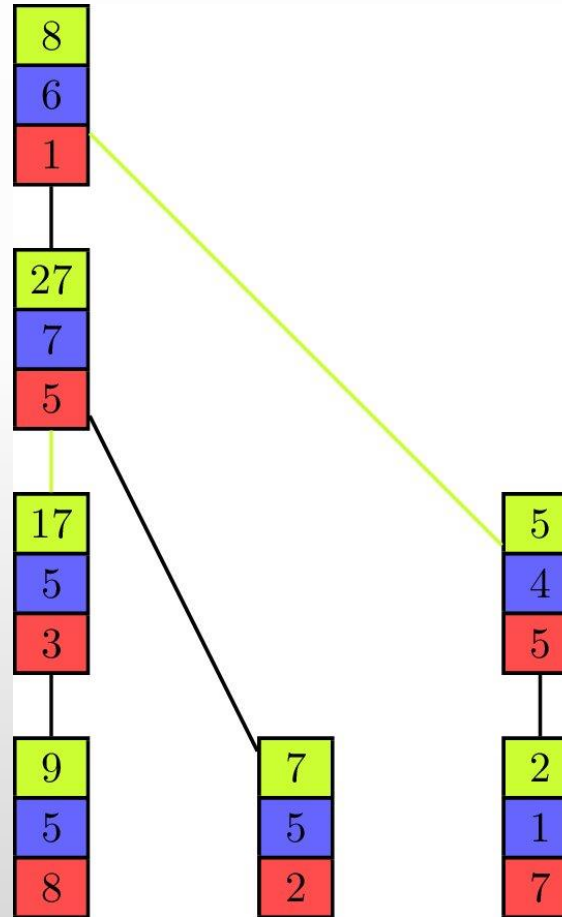


Pipelined Tree



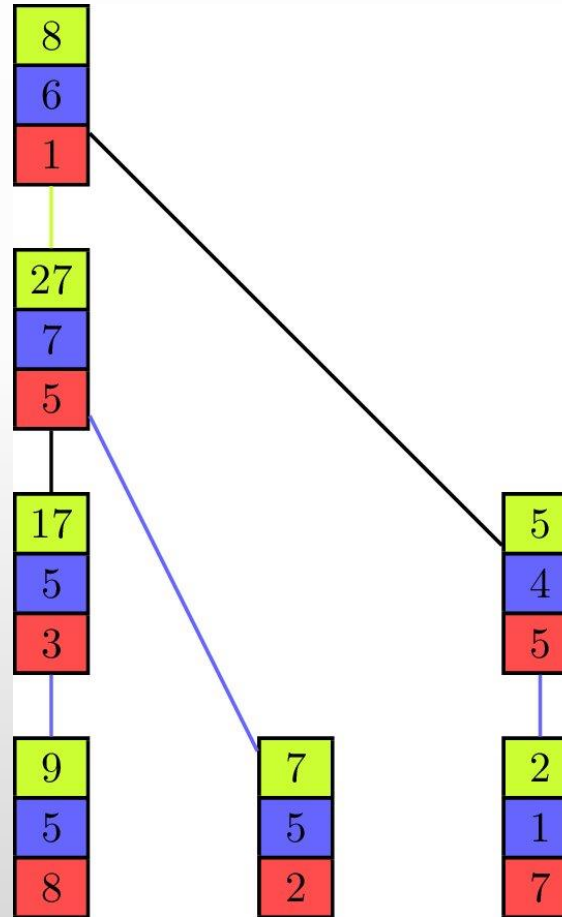


Pipelined Tree



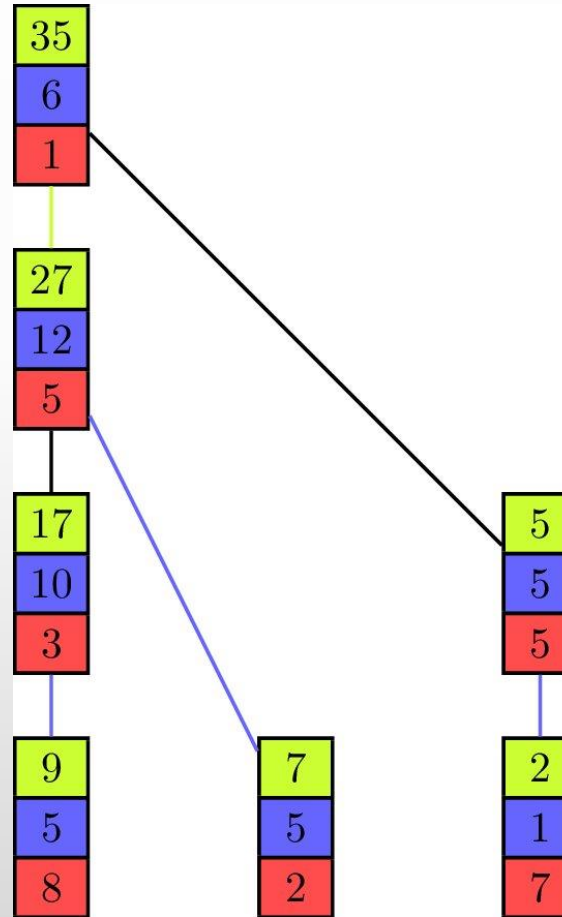


Pipelined Tree



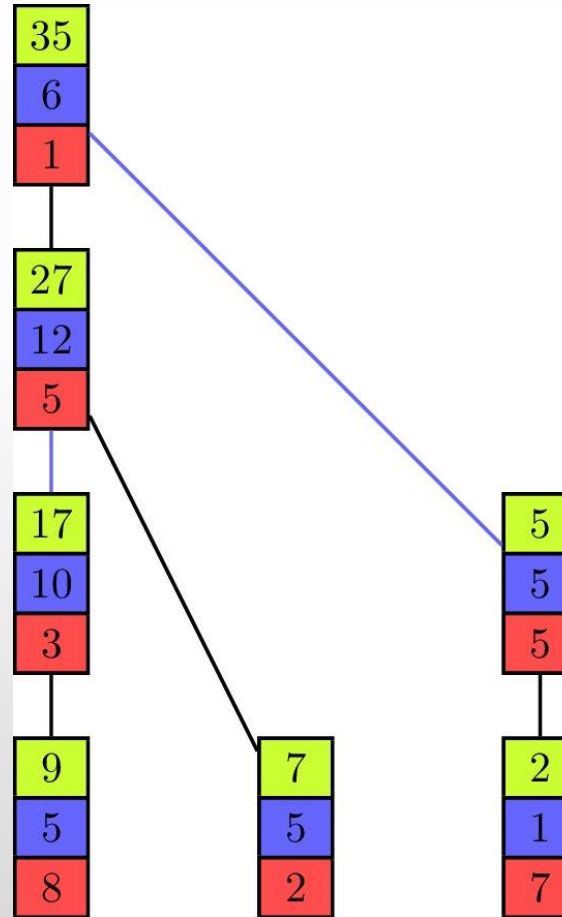


Pipelined Tree



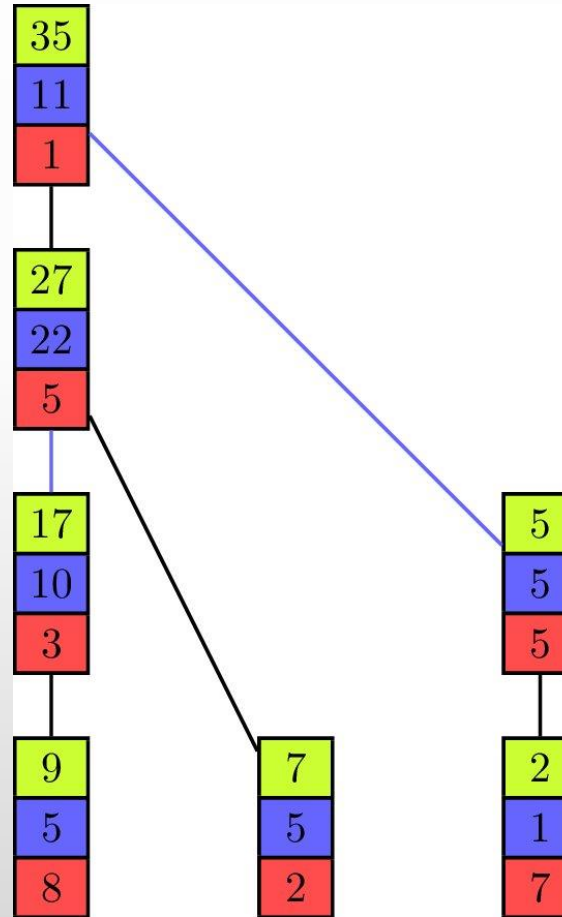


Pipelined Tree



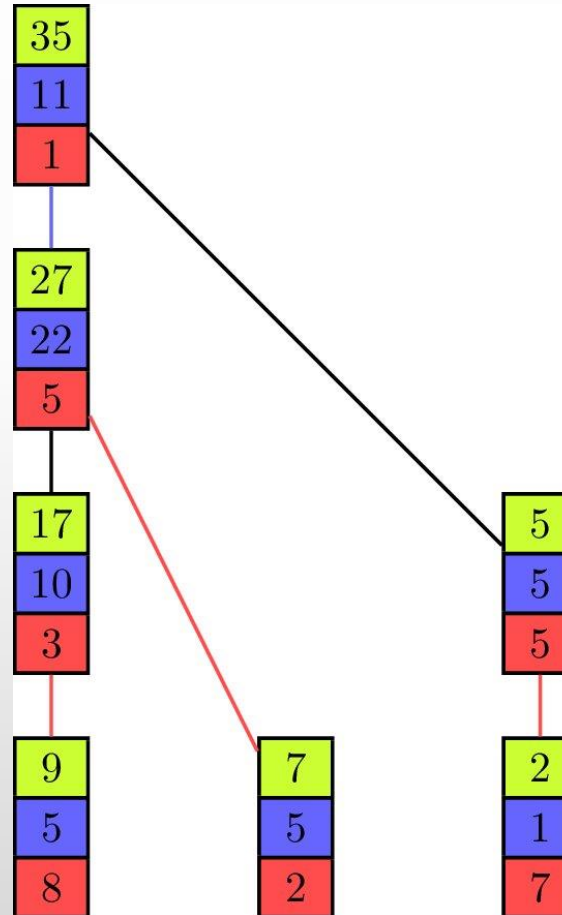


Pipelined Tree



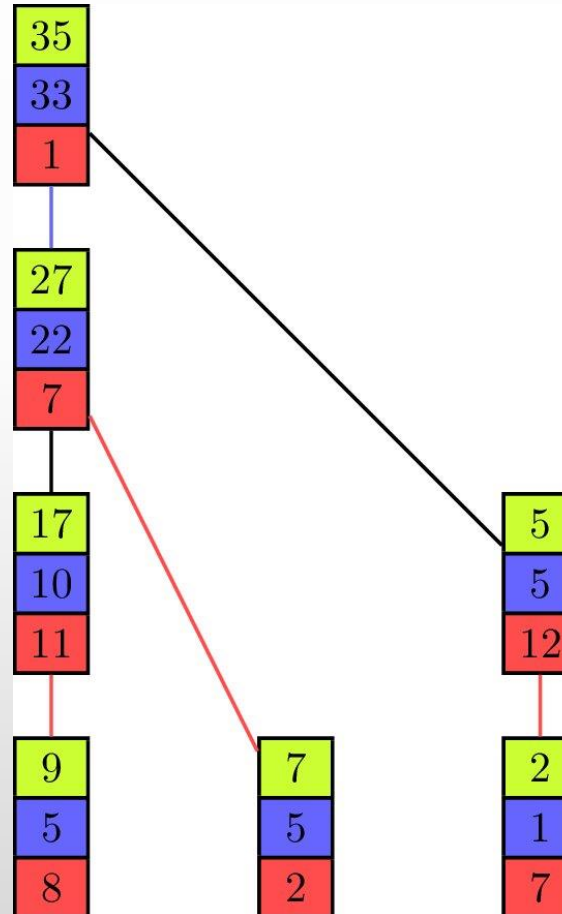


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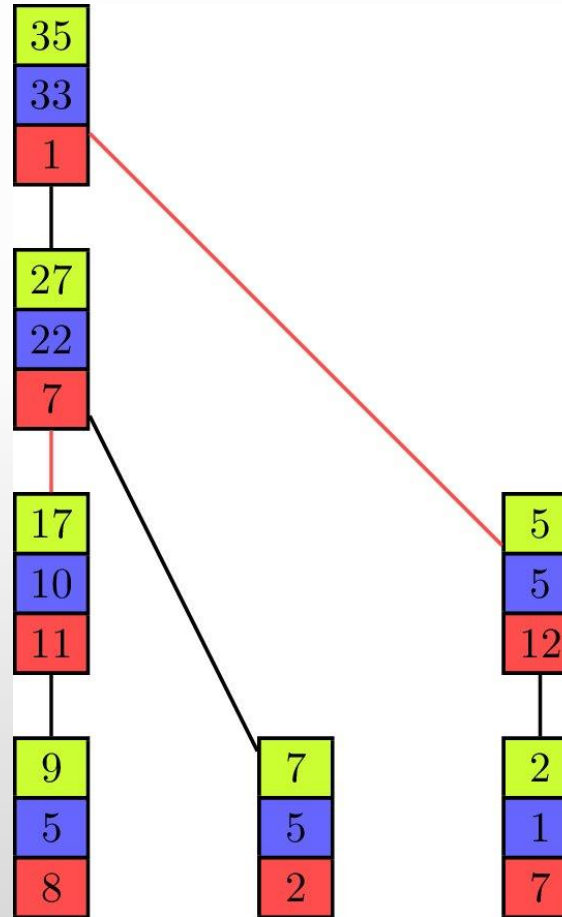


Pipelined Tree



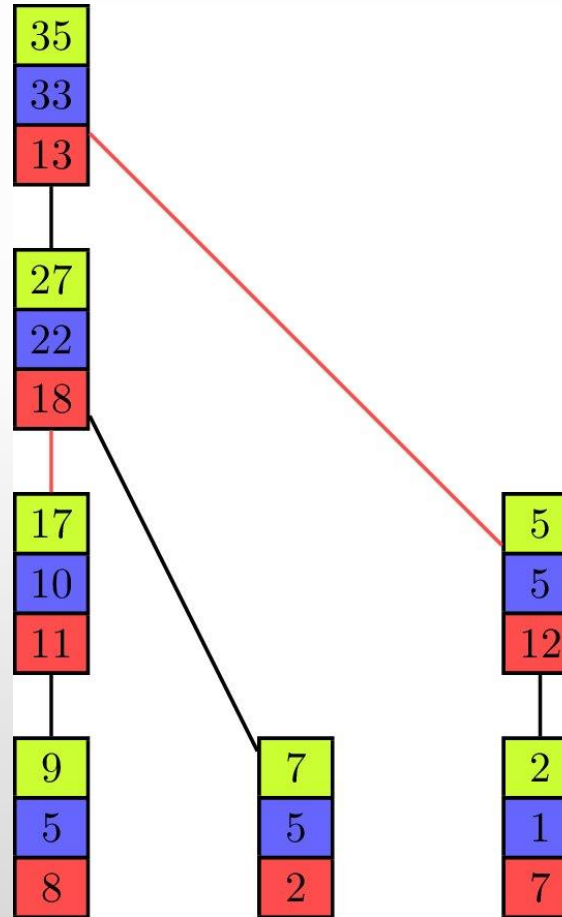


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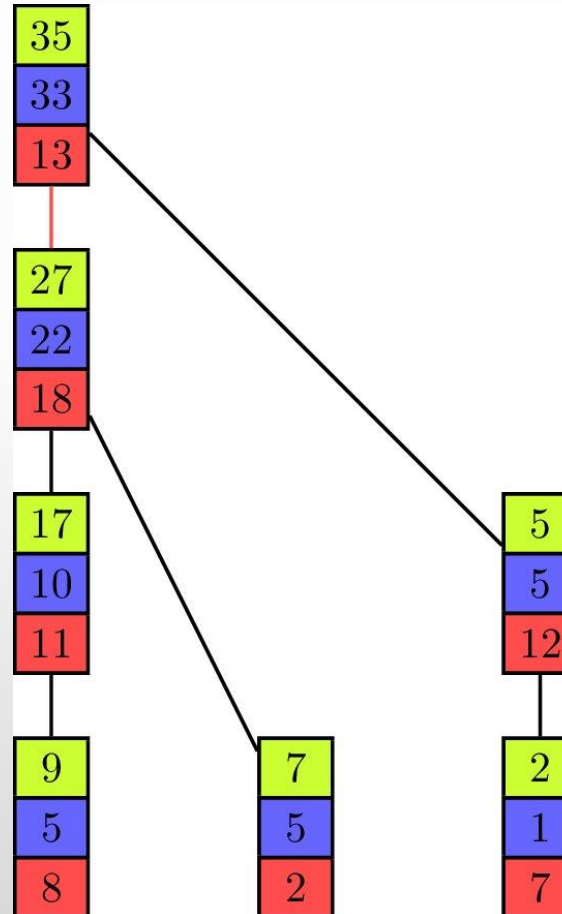


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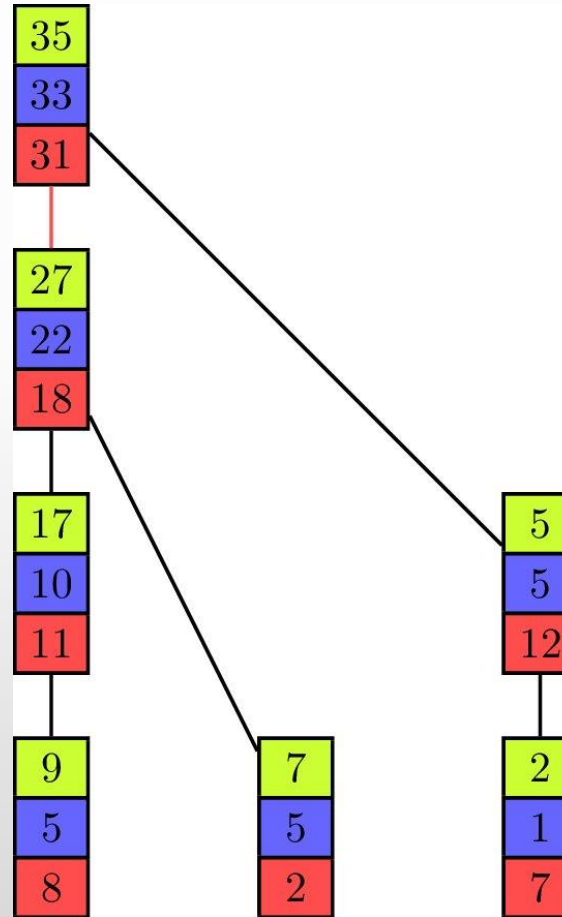


Pipelined Tree





Pipelined Tree





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