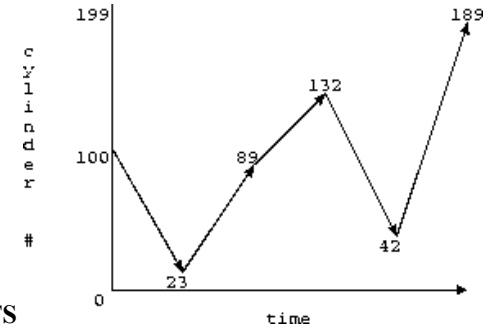


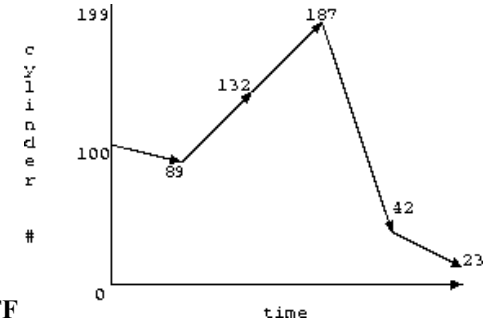
Examples of Disk Scheduling Algorithms

- **Work Queue:** 23, 89, 132, 42, 187
- there are 200 cylinders numbered from 0 - 199
- the diskhead stars at number 100



1. **FCFS**
   - total time is estimated by total arm motion

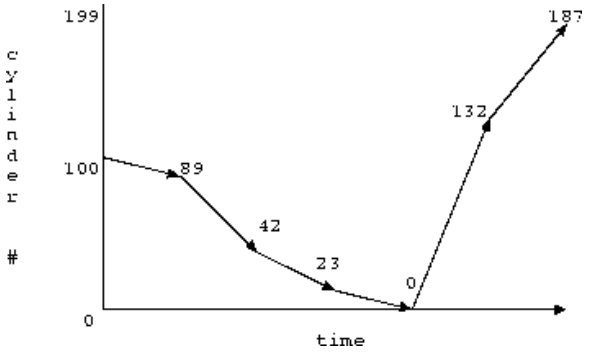
$$| 100 - 23 | + | 23 - 89 | + | 89 - 132 | + | 23 - 132 | + | 132 - 42 | + | 42 - 187 | = 77 + 66 + 43 + 90 \cdot$$



2. **SSTF**

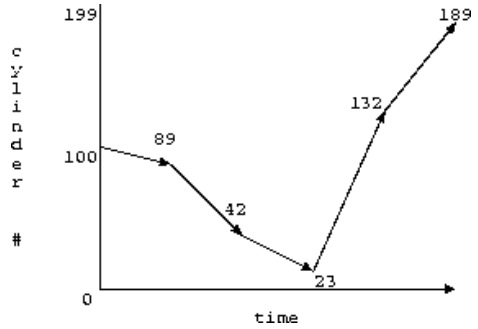
$$| 100 - 89 | + | 89 - 132 | + 132 - 187 | + | 187 - 42 | + | 42 - 23 | = 11 + 43 + 55 + 145 + 19 = 273$$

3. **SCAN**
   - assume we are going inwards (i.e., towards 0)



$$| 100 - 89 | + | 89 - 42 | + | 42 - 23 | + | 23 - 0 | + | 0 - 132 | + | 132 - 187 | = 11 + 47 + 19 + 23 + 1$$

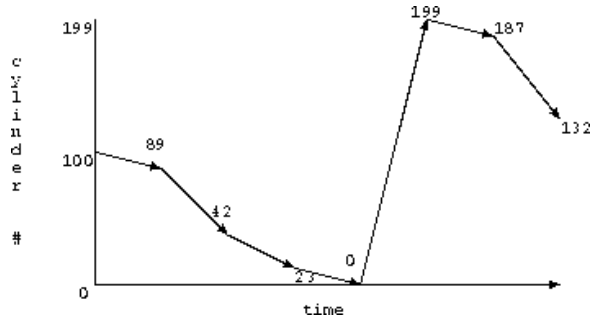
4. **LOOK**



$$| 100 - 89 | + | 89 - 42 | + | 42 - 23 | + | 23 - 132 | + | 132 - 187 |= 11 + 47 + 19 + 109 + 55 = 241$$

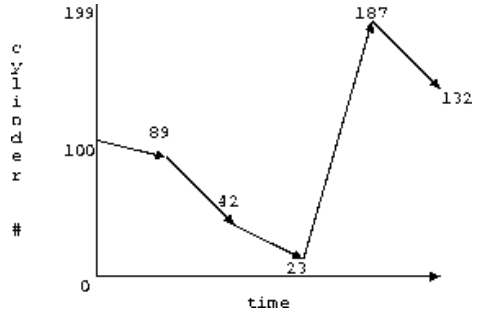
- reduce variance compared to SCAN

5. **C-SCAN**



$$| 100 - 89 | + | 89 - 42 | + | 42 - 23 | + | 23 - 0 | + | 0 - 199 | + | 199 - 187 | + | 187 - 132 |= 11 + 4'$$

6. **C-LOOK**



$$| 100 - 89 | + | 89 - 42 | + | 42 - 23 | + | 23 - 187 | + | 187 - 132 |= 11 + 47 + 19 + 164 + 55 = 296$$

Howard Hamilton
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