Unit 3. Hardware.

Internal / external components.

Part 3

Desarrollo de Aplicaciones Web
1er Curso
Curso 2020-2021
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Recordatorio

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CENTRE ESPECÍFIC D´EDUCACIÓ A DISTÀNCIA DE LA COMUNITAT VALENCIANA

Esta presentación no sustituye los apuntes disponibles en el aula virtual.

Las apuntes oficiales son los que tenéis en el aula virtual

Contents

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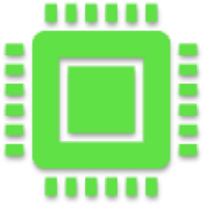
Monitors

Basics

LCD



Graphic cards

Basics

GPU

Hard Disk

Scheduling

1. Graphic card

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- ✓ Where?
  - *Integrated into the chipset*
  - *Integrated into the CPU*
  - *Integrated motherboard*
  - *Expansion cards*
- ✓ Screen resolution: hz x vcal dots
- ✓ Number of color: bit, 16 bits → 2^{16}=65536
- ✓ GPU
- ✓ Drivers
- ✓ Connectors
- ✓ Libraries

1. Graphic card

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- ✓ **CPU**: central processing unit, the brains of the operation that does the arithmetic and ensures the rest of the computer components do what they're supposed to do.

- ✓ **GPU**: graphics processing unit, the heavy lifter who ensures that the in-game landscapes look as good as the CPU says they should look.

- ✓ **APU**: accelerated processing unit, a CPU/GPU hybrid, a jack of both trades but a master of neither. Power-efficient, cost-efficient, and can save space in laptops and notebooks, but is not powerful enough to run AAA games properly.

Source

1. Graphic card.
Example

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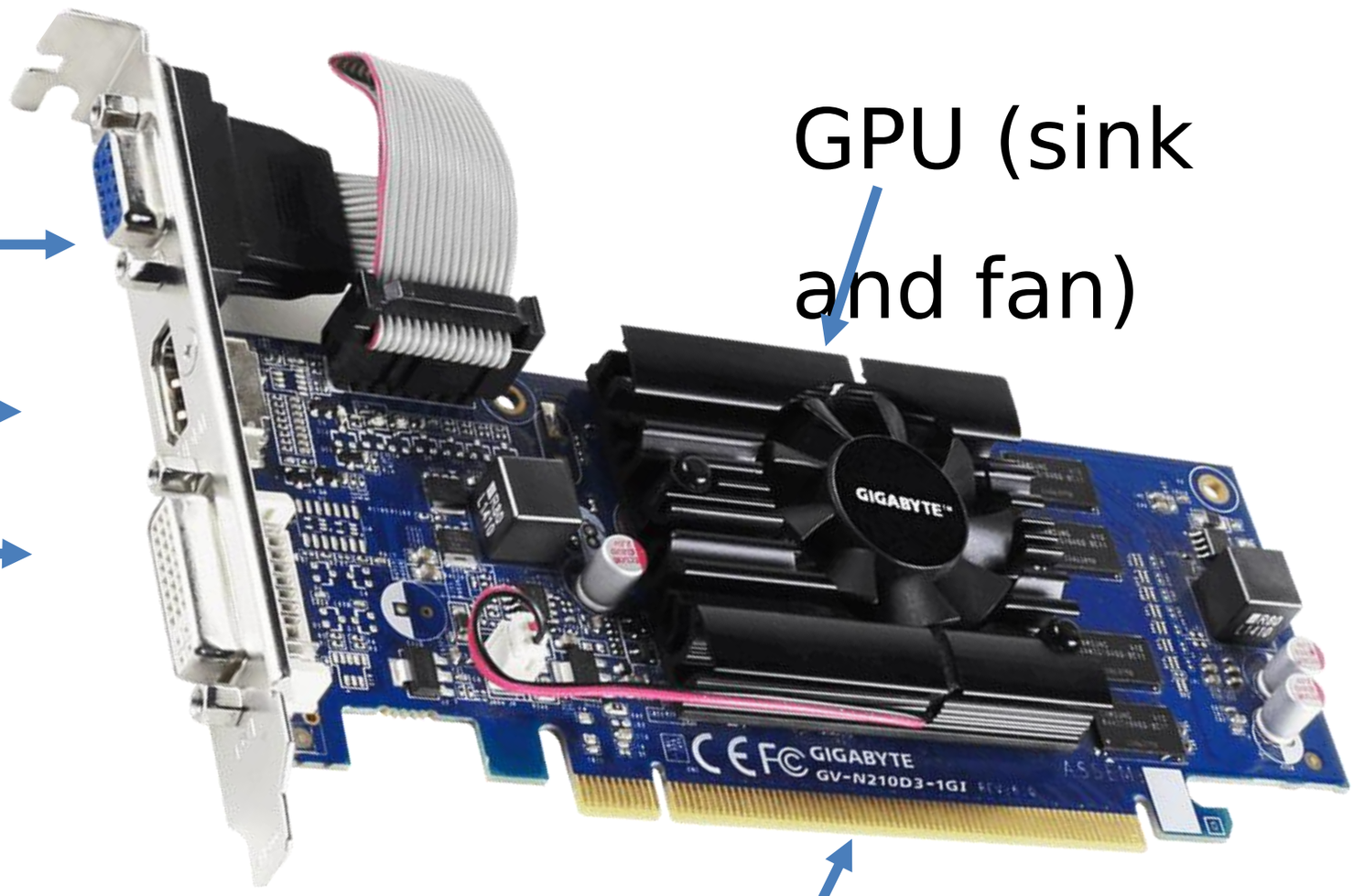
- ✓ https://www.gigabyte.com/Graphics-Card/GV-N210D3-1GI-rev-60-61#ov

D-SUB (VGA)

HDMI

DVI-I



GPU (sink and fan)

PCI-E

Source

2. Monitors

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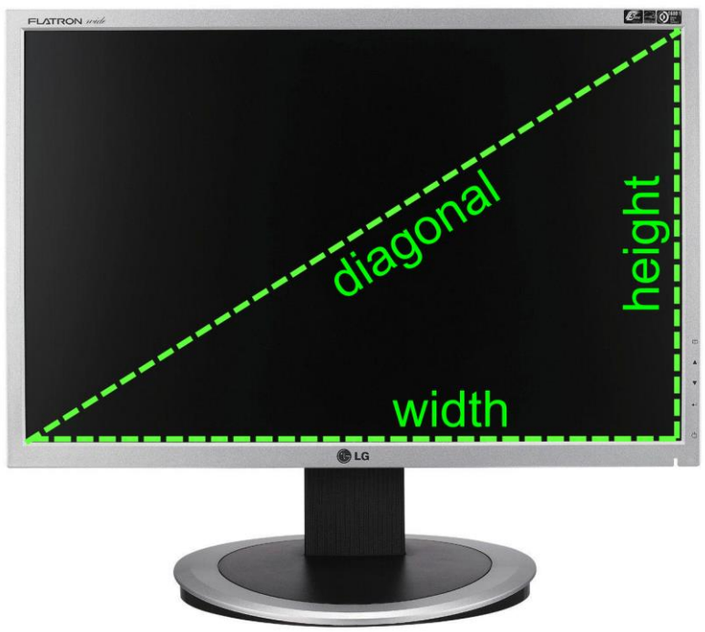
- ✓ CRT (cathode ray tube) vs LCD
- ✓ https://www.geeksforgeeks.org/difference-between-crt-and-lcd/

- ✓ 1 inch = 2,54 cm



Source

- ✓ Screen resolution
- ✓ Pythagoras theorem
- ✓ Aspect ratio (4/3, 16/9)

2. Monitors. *Screen resolution*

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- ✓ Resolution 1920 x 1080 pixels.
- ✓ Colour depth 32 bits → 4.294.967.296 colours.
- ✓ Multiply all values: 1920 * 1080 * 32 → 66.355.200 bits → 7,91 MiB

2. Monitors. *Aspect ratio*

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- ✓ Resolution 1920 x 1080 pixels (divide both values) → 1.77 → 16:9
- ✓ Resolution 640 x 480 pixels → 1.33 → 4:3
- ✓ Resolution 4200 x 1800 pixels → 2.35 → 21:9
- ✓ Do you want to know more?

  https://calculateaspectratio.

2. Monitors. *Pythagoras*

(not assessable)

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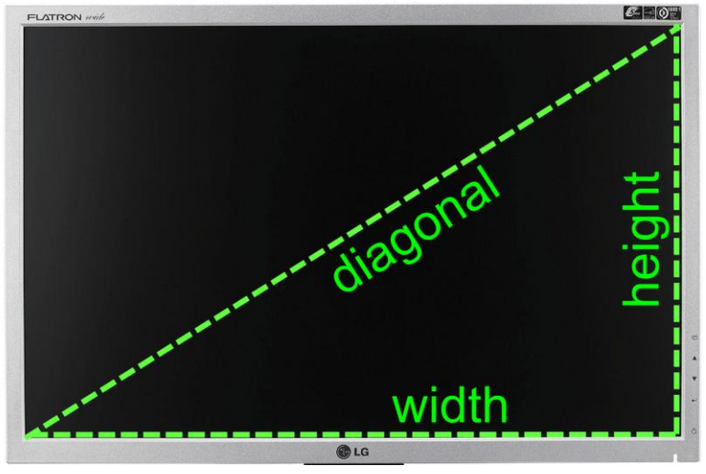
- ✓ Monitor of 20" (50,8 cm)
- ✓ $a^2 + b^2 = c^2 \rightarrow a^2 + b^2 = 50{,}8^2$
- ✓ aspect ratio 16:9 (1.78) → a/b=1,78→a= 1,78b



$1{,}78b^2 + b^2 = 50{,}8^2$

$2{,}78b^2 = 50{,}8^2$

$b^2 = (50{,}8^2) / 2{,}78$

$b = \sqrt{(50{,}8^2) / 2{,}78}$

b=30,47 → 12 inches

Source

3. Hard Disk. *Scheduling*

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Request processed in order of arrival.

- ✓ FIFO
- ✓ SSF
- ✓ SCAN
- ✓ CSCAN
- ✓ LOOK
- ✓ CLOOK

Process first the requests that minimize head movement from the current position

Arm movement always starts at one end and continues to the other and process the requests

Arm movement always starts at one end and continues to the other, *but process requests only in one direction*

Similar to SCAN but it does not need to arrive to the end of the disc

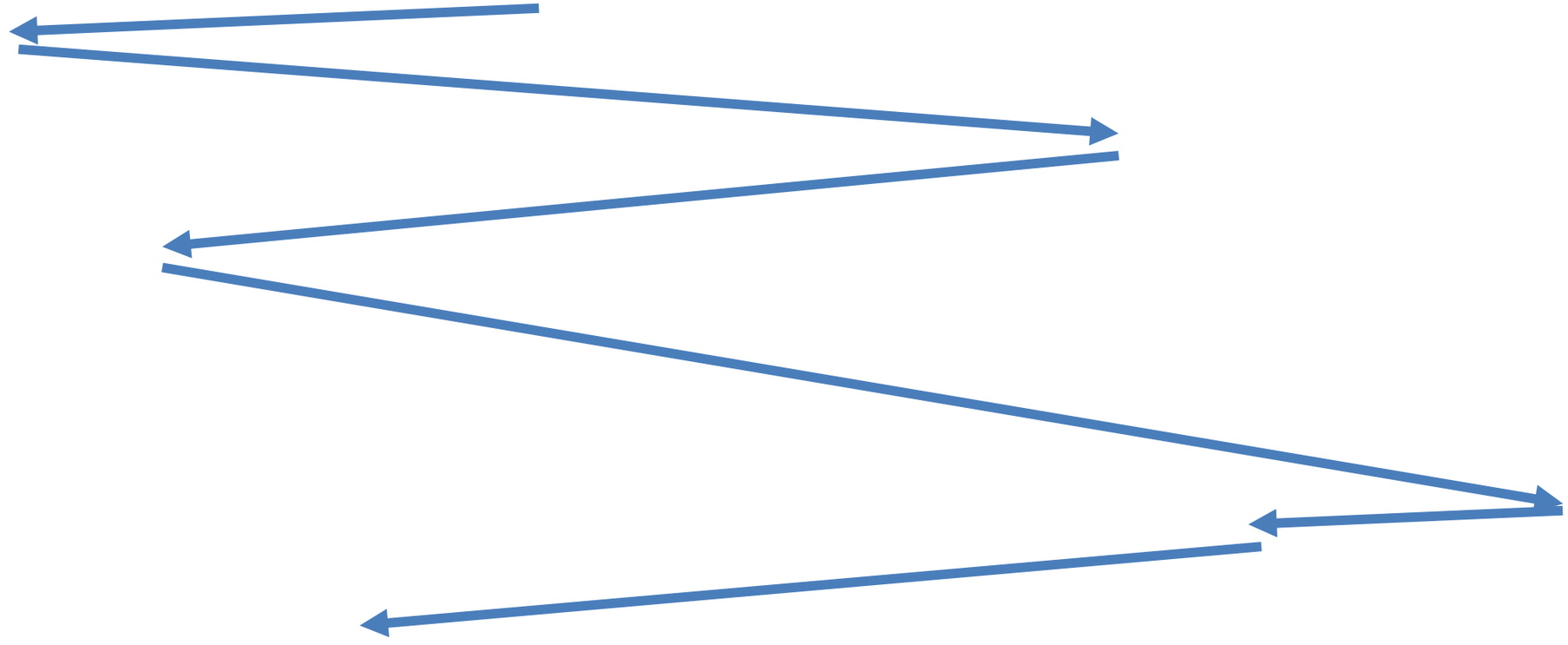
Similar to CSCAN but it does not need to arrive to the end of the disc

3. Hard Disk.
Scheduling FIFO

Suppose the order of request is:

12, 70, 14, 100, 72, 19

Current position of R/W head:23

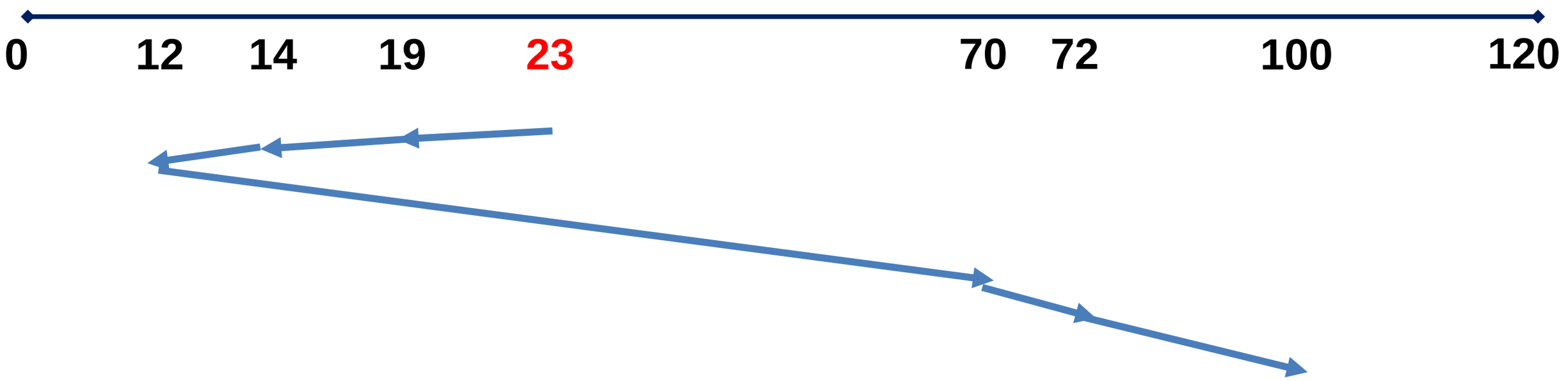


3. Hard Disk.
Scheduling SSTF

Suppose the order of request is:

12, 70, 14, 100, 72, 19

Current position of R/W head:23



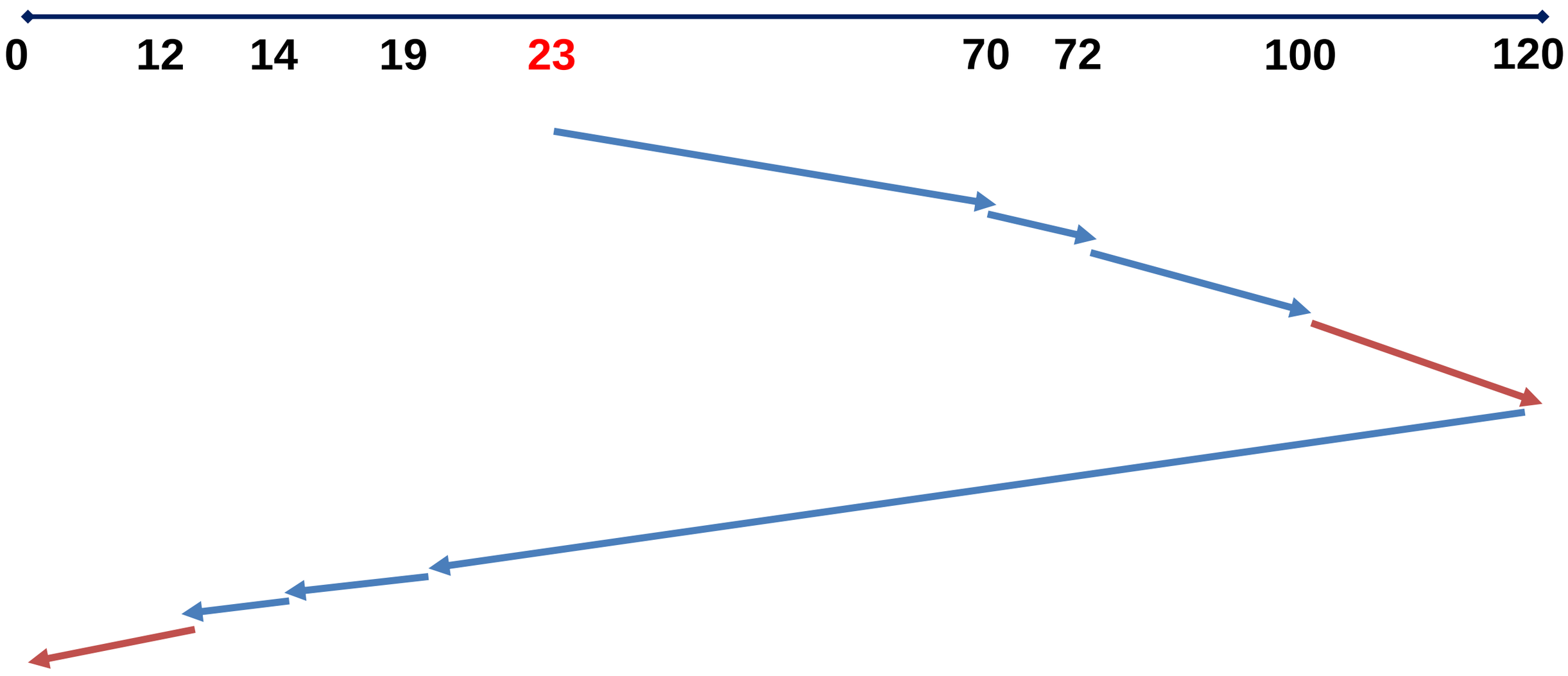
3. Hard Disk.
Scheduling SCAN

Suppose the order of request is:

12, 70, 14, 100, 72, 19

Current position of R/W head:23

Head is moving from 0 to 120.



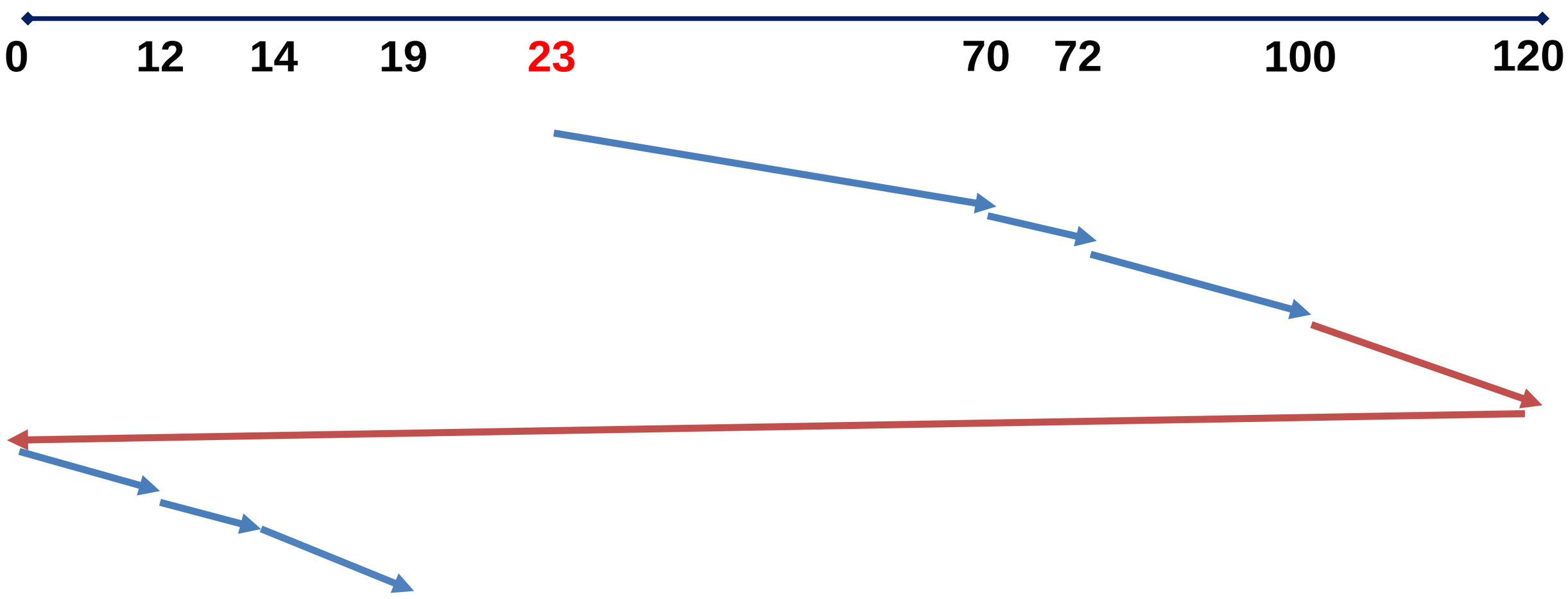
3. Hard Disk.
Scheduling
C-SCAN

Suppose the order of request is:

12, 70, 14, 100, 72, 19

Current position of R/W head:23

Head is moving from 0 to 120



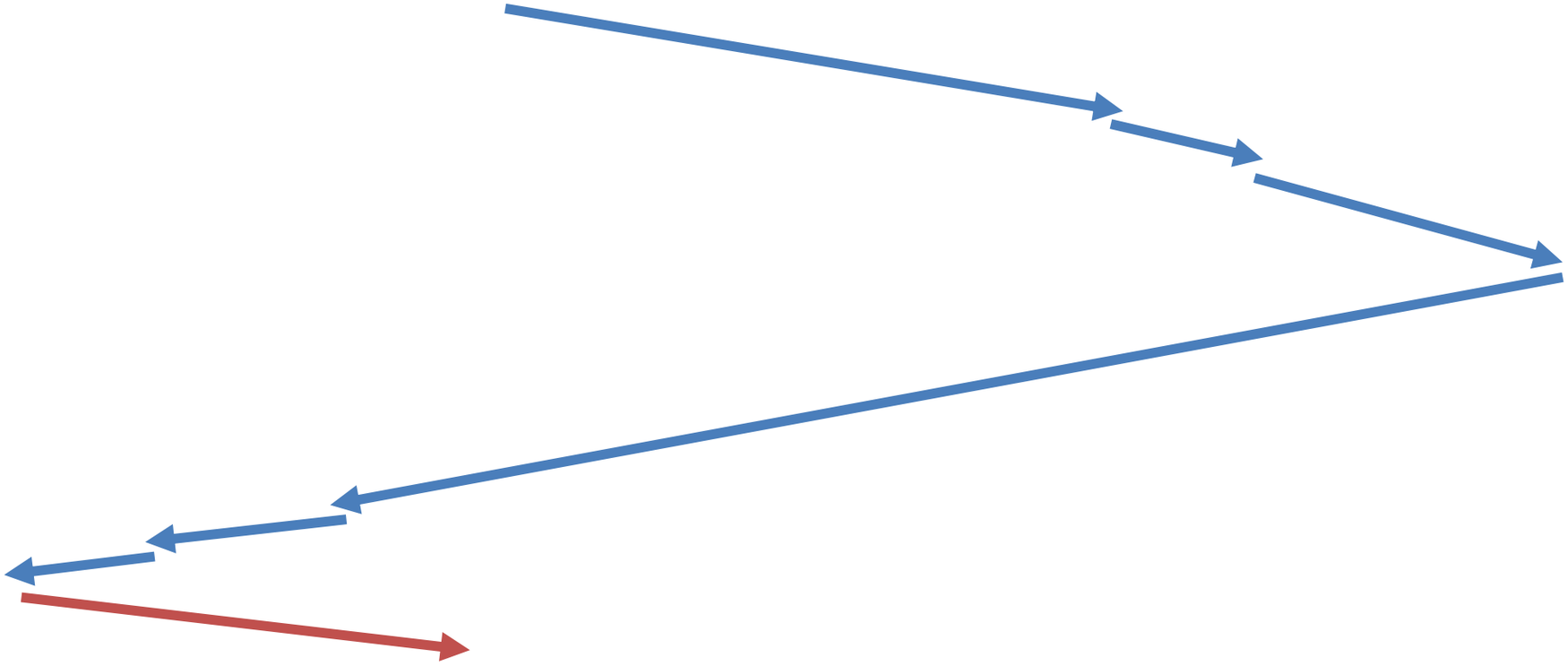
3. Hard Disk.
Scheduling LOOK

Suppose the order of request is:

12, 70, 14, 100, 72, 19

Current position of R/W head:23

Head is moving from 0 to 120



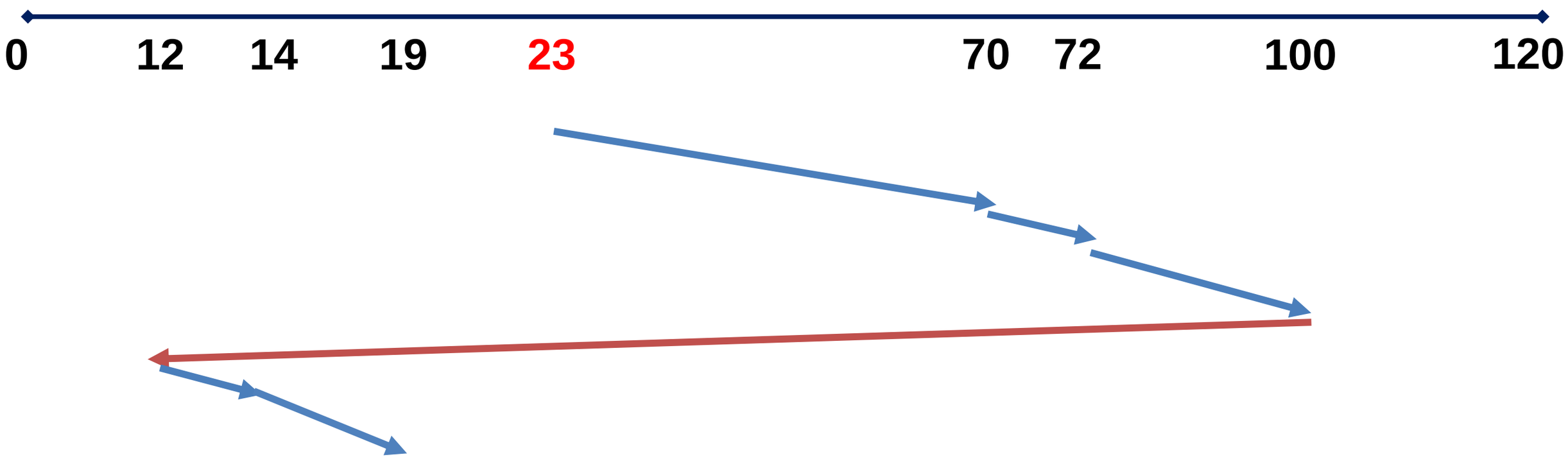
3. Hard Disk.
Scheduling
C-LOOK

Suppose the order of request is:

12, 70, 14, 100, 72, 19

Current position of R/W head:23

Head is moving from 0 to 120



Questions?

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