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| K2 | KUCHIBOTLA DATTA SAI NAGA VENKATA PAVAN 2420030112 |
| Quiz | Buffer management |
| Question | Buffer Management in External Sorting |
| Completed on | Tuesday, 16 December 2025, 8:29 AM |

Question 1

Correct

Mark 1.00 out of 1.00

Flag question

Buffer Management in External Sorting (FIFO Policy)

You are given a very large file divided into pages. Since the entire file cannot fit into main memory, a buffer of limited size is used to load pages from secondary storage.

For each page request:

- If the page is already present in the buffer, it is a **HIT**
- If the page is not present, it is a **MISS** and the page must be loaded into the buffer
- When the buffer is full, the **FIFO (First In First Out)** replacement policy is used to remove a page

Write a program to simulate buffer management and print **HIT** or **MISS** for each page request.

Input Format

- First line: Integer **B** – buffer size
- Second line: Integer **N** – number of page requests
- Third line: **N** space-separated integers representing page requests

Output Format

- For each page request, print **HIT** or **MISS** on a new line

Constraints

- $1 \leq B \leq 10$
- $1 \leq N \leq 100$
- $0 \leq \text{Page Number} \leq 10^5$

For example:

| Test | Input | Result |
|------|--------------------------------|--|
| 1 | 4 10 1 2 3 4 1 5 2 6 3 4 | MISS MISS MISS MISS HIT MISS HIT MISS HIT HIT |

| Test | Input | Result |
|------|-----------------------|--|
| 2 | 2 6 1 2 3 1 2 3 | MISS MISS MISS MISS MISS MISS |

Answer: (penalty regime: 0 %)

```

1 B = int(input())
2 N = int(input())
3 pages = list(map(int, input().split()))
4
5 buffer = []
6 for page in pages:
7     if page in buffer:
8         print("HIT")
9     else:
10        print("MISS")
11        if len(buffer) < B:
12            buffer.append(page)
13        else:
14            buffer.pop(0)
15            buffer.append(page)

```

| | Test | Input | Expected | Got | |
|---|------|--------------------------------|---|---|---|
| ✓ | 1 | 4 10 1 2 3 4 1 5 2 6 3 4 | MISS MISS MISS MISS MISS HIT MISS HIT MISS HIT HIT HIT | MISS MISS MISS MISS MISS HIT MISS HIT MISS HIT HIT HIT | ✓ |
| ✓ | 2 | 2 6 1 2 3 1 2 3 | MISS MISS MISS MISS MISS MISS | MISS MISS MISS MISS MISS MISS | ✓ |

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

[Make comment or override mark](#)

Response history

| Step | Time | Action | State | Marks |
|------|-----------------------|--|--------------|-------|
| 1 | 16/12/25, 08:28:34 | Started | Not complete | |
| 2 | 16/12/25, 08:28:56 | Submit: B = int(input()) N = int(input()) pages = list(map(int, input().split())) buffer = [] for page in pages: if page in buffer: print("HIT") else: print("MISS") if len(buffer) < B: buffer.append(page) else: buffer.pop(0) buffer.append(page) | Correct | 1.00 |
| 3 | 16/12/25, 08:29:28 | Attempt finished submitting: {\$a} | Correct | 1.00 |

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