

# RAG Evaluation - Hit Rate Analysis



## Actual Relevant Documents (3 total)

1. Amazon rainforest in South America
2. Brazil is the largest country in South America
3. Amazon River is second longest



## Retrieved Documents (Top-3)

#	Document	Relevant?
1	Nile River flows through Egypt	✗ No
2	Brazil is the largest country in South America	✓ Yes
3	Mount Everest is the tallest mountain	✗ No



## Hit Rate@3 Computation

**Question:** Is there at least 1 relevant document in the top-3 retrieved results?

**Analysis:**

- Retrieved document #2 matches our relevant documents
- ✓ At least one hit found

**Formula:**

$$\text{Hit Rate@3} = \begin{cases} 1 & \text{if at least 1 relevant doc found} \\ 0 & \text{otherwise} \end{cases}$$

**Result:**

$$\text{Hit Rate@3} = 1$$

## Final Result

Metric	Value
Hit Rate@3	1