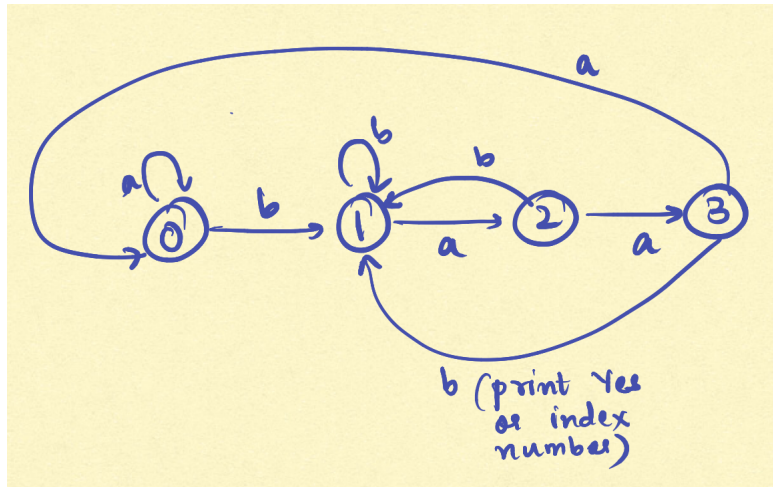


Editorial - 1A (Challenge Accepted)

This problem is based on the concept of **Deterministic Finite Automata** (DFA)/ **Finite State Machines** (FSM) and more specifically **Mealy Machines**. In case of Mealy Machines, the output depends only on both the current state of the machine and the current input. The FSM (with minimum states) for the problem is shown below.



This kind of FSM helps us parse inputs which have conjoined **baab** substrings such as **baabaabaab** as well. The FSM works along the table given in the next page. Each state of the FSM can be modelled as a recursive call while scanning one character at a time (no need of arrays, pointers or strings) and the cases can be checked via **if-elseif-else** statements. Once the substring **baab** has been completely visualized for the first time you can set a **flag** variable to be **true** and print YES. The next time you encounter **baab** (**flag** is already set), you can just print the index. Also note that the output to be printed will be the (current_index - 3) as when the substring is realized the index will be corresponding to the last **b** of **baab** and hence the start of the pattern would be 3 less than that.

State	Input	Action
0	a	As the first character expected is b not an a , we remain in the same state and discard all the as we see.
0	b	As b has been encountered, we move to state-1 to and expect an a ne
1	a	As ba has been encountered, we move to state-2 and expect another a .
1	b	As the pattern has been broken, i.e. bb has been visualized, we remain in state-1 awaiting an a , assuming that the b encountered maybe the start of another baab.
2	a	As baa has been encountered, we move to state-3 and expect a final b .
2	b	As the pattern as been broken, i.e. bab has been visualized, we go back to state-1 awaiting an a , assuming that the b encountered maybe that start of another baab.
3	a	As the pattern has been broken, i.e. baaa has been visualized, we go back to state-0 awaiting a b as the start of baab.
3	b	As the complete pattern baab has been encountered, we print YES or the appropriate index of the string and go back to state-1, expecting an a , as the latest b seen maybe the start of another conjoined baab.