Assignment 3

Question : What words are accepted by this machine?

Answer:-

All the following words will be accepted by this machine are as follows:-

1. The combinations of a followed by b in even occurrences. such as ‘abababab’ has 4 occurrence of ‘ab’.
2. The combinations of b followed by a in even occurrences. such as ‘baba’ has 2 occurrence of ‘ba’.
3. Even occurrences of ‘a’ such as ‘aaaaaaaa’ has 8 occurrences of ‘a’.
4. Even occurrences of ‘b’ such as ‘bbbbbb’ has 6 occurrences of ‘b’.
5. Combinations of even occurrences of ’a’ followed by even occurrences of ’b’.
6. Combinations of even occurrences of ’b’ followed by even occurrences of ’a’.
7. Total number of ‘a’s should be even and Total number of ‘b’s should be even. In any combinations such as ‘aaabbbab’ or ‘bbbabaaa’ where there are 4 ‘a’s and 4 ‘b’s.

The regular expression for the same is :-

(a|b)^2\*