Regular Expression

Describe the language denoted by the following regular expression

- a(a | b)*a

  Answer:

  String of a`s and b`s begin and end with a

- (a | b)* a(a | b) (a | b)

  Answer:

  String of a`s and b`s, with an a in the 3rd letter from the right.

Cont…

- (a | b)*b (a | b)* b (a | b)*

  Answer:

  String of a`s and b`s that contain at least two b`s

Write regular definition for the following languages:

- All string of lowercase letters that contain the five vowels in order.

  Answer:

  L $\longrightarrow$ **[b-d f-h j-n p-t v-z]**

  String $\longrightarrow$ $L^*(a|A)^+ L^*(e|E)^+ L^*(i|I)^+ L^*(o|O)^+ L^*(u|U)^+ L^*$

Cont…

- Comments, consisting of a string surrounded by /* and */, without an intervening */, unless it is inside double-qoutes(“)

  Answer:

  L → [a-zA-Z0-9]

  C → “*/”

  comment → /* (L*C*)* */

Cont..

- String of a`s and b`s that contains odd number of b

  Answer:

  a*b(a*ba*b)*a*

Cont..

- String of a`s and b`s that contains just two or three b`s

  Answer:

  $a^*ba^*ba^*b^?a^*$

Cont..

- All strings of a’s and b’s that do not contain the substring abb.

Answer:

b* (a (ε|b))*

Cont..

- All strings of a’s and b’s with an even number of a’s.

Answer:

b*(a b* a b*)*

Cont..

- All strings of a’s and b’s that contain at most two b's.

Answer:

a* (ε|b) a* (ε|b) a*

Cont..

- All strings of a’s and b’s that do not contain the subsequence abb.

Answer:

b* a*(ε|b) a*