



Question:1

- a. Define the language of strings of length 3 over $\Sigma = \{\#, \%, @\}$.
- b. Generate the reverse of language generated in part a.
- c. Identify if there is any palindrome.

Solution:

L = {###, ##%, ##@, #%@, %##, #@#, #@%, %%%, %%@, %%#, %@%, %%%, %@@, %@#, %##, %#@, @@@, @@#, @@%, @#@, @%@, @##, @#%, @%%, @%#}

Reverse of L = {###, %##, @##, @%#, %##, #@#, %@#, %%%, @@#, %%%, @%%, %%%, %@%, %##, @@%, #@%, ##%, @#%, @@@, #@@, %@@, @#@, @%@, ##@, %#@, %%@, #%%}

Palindrome = {###, ##%, #@#, %%%, %@%, %##, @@@, @#@, @%@}

Question:2

- a. Consider the language of strings defined over $\Sigma = \{x, z, xy, yz, zx\}$ with the following strings:

- i. xyzxyz
- ii. xxyzxy

Tokenize the above strings in all possible ways along with finding their lengths.

Solution:

- i.) x,yz,xy,z
- xy,zx,yz
- x,yz,x,yz
- xy,zx,yz

solution:

- ii.) x,x,yz,xy
- x,xy,z,xy

- b. Explain whether the above alphabet is valid or invalid along with justification?

Solution:

i) X,YZ,XY,Z is Valid

solution:

ii) X,XY,ZX,Y is Invalid

Sarinya