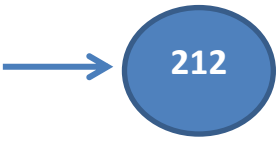
# Homework 1:

Q1:
Give 5 elements from each of the following sets:

1- $\{xyzx \mid x, y, z \in \{0; 1; 2\}\}$
2- $\{yxzz \mid x, y, z \in \{0; 1\}\}$

Q2:

From the extended example that we did in the lecture of “Strange Planet”, assume that we have 5 individuals, start from the following state and continue to generate all other states.




Q3: What is the smallest language? Justify (prove) your answer.

Q4: Give five examples of different alphabets

Q5: Assume you have this alphabet $\Sigma = \{a, 1, z\}$ generate the strings in the following sets

$\Sigma^1$

$\Sigma^2$

$\Sigma^3$

Q6: Assume you have this alphabet $\Sigma = \{0, 1\}$ give five examples of different languages that can be generated from this alphabet (define the languages by words). Give three strings from each language.