

**ITEC451**  
**Activity 11**

**[Linear Algebra]** During any given year, 20% of cable communication users become satellite communication users and 10% of satellite communication users become cable communication users (all other people use the same communication service). Let  $C_t$  be the number of cable communication users at the beginning of year  $t$ , and  $S_t$  be the number of satellite communication

users at the beginning of year  $t$ . Use matrix multiplication to relate the vector  $\begin{bmatrix} C_{t+1} \\ S_{t+1} \end{bmatrix}$  to the

vector  $\begin{bmatrix} C_t \\ S_t \end{bmatrix}$ . (This is based on the problem 3 in the page 47 of the textbook.)