

CTMC

To have this assignment evaluated for the in-class exam, please upload on WeBeep a ZIP file including:

- the source code used to solve this assignment
- this file, with the table below properly filled

Name (Family + given)	Makovec Matteo
Student ID (codice persona)	10782774
QR-code ID (8 digits of the QR that was given you)	24499815

CTMC drawing:

```

graph TD
    4G((4G)) -- l1 --> None((None))
    None -- m1 --> 4G
    4G -- l2 --> 4G_Wifi((4G + Wifi))
    4G_Wifi -- m2 --> 4G
    4G_Wifi -- l1 --> Wifi((Wifi))
    Wifi -- m1 --> 4G_Wifi
    Wifi -- l2 --> None
    None -- m2 --> Wifi
    4G_Wifi -- r --> None
    style 4G_Wifi stroke-width:4px
    
```

Infinitesimal generator matrix:

$$Q = \begin{bmatrix} -l_1-l_2-r & l_2 & l_1 & r \\ m_2 & -l_1-m_2 & 0 & l_1 \\ m_1 & 0 & -l_2-m_1 & l_2 \\ 0 & m_1 & m_2 & -m_1-m_2 \end{bmatrix};$$

	1	2	3	4
1	-0.3933	0.3333	0.0500	0.0100
2	0.1250	-0.1750	0	0.0500
3	0.5000	0	-0.8333	0.3333
4	0	0.5000	0.1250	-0.6250

Figure with the evolution of the state probabilities as function of time.

