Assignment 2

Que1

Let us assume that loans expect return in 15 years.
Initial distribution form = [P(PRL),P(PDL),0,0].

Below table is the results of simulation for different initial distribution vectors.

	Initial PRL	Initial PDL	PRL	PDL	NPA	RL
0	0.0	1.0	0.001286	0.000434	0.803124	0.195156
1	0.1	0.9	0.001586	0.000519	0.746004	0.251891
2	0.2	0.8	0.001887	0.000604	0.688884	0.308625
3	0.3	0.7	0.002187	0.000690	0.631764	0.365359
4	0.4	0.6	0.002488	0.000775	0.574644	0.422093
5	0.5	0.5	0.002788	0.000860	0.517524	0.478828
6	0.6	0.4	0.003089	0.000945	0.460405	0.535562
7	0.7	0.3	0.003389	0.001030	0.403285	0.592296
8	0.8	0.2	0.003690	0.001115	0.346165	0.649030
9	0.9	0.1	0.003990	0.001200	0.289045	0.705764
10	1.0	0.0	0.004291	0.001286	0.231925	0.762499

The profitable case for the bank would be when RL(recoverable loan) has high probability.

In the above table,the values with PDL > PRL, the schemes turn out to be lossy for the bank.but after PRL = 0.6 and PDL =0.4,RL value is high which means the scheme turns out to be profitable. Therefore any plan with such values and satisfying the constraint of PRL + PDL =1 will result in recoverable loan.

Que2:

Goal is to find out the best lambda value to generate a poisson distribution similar to corona cases.
For the lambda value of 7, we get the following plot for cyprus corona cases.