Assignment 5

a) The assignments have to be done individually.

b) The assignments have to be answered in ENGLISH.

c) The answers have to be uploaded to Toledo trough "assignments", not using any other Toledo tool and not by email.

d) Clearly indicate your name and student number in the uploaded answer.

e) Indicate the time that you have (approximately) spend on the assignment. This will not be taken into account in any way for the quotation but will give us an idea of the load of the assignments. We estimate the load of maximally two hours and half per assignment.

f) You will be rewarded for correct answers, not for the format of your answer. Scanned handwritten answers are therefore preferred. Do not spend time in typesetting the document. Just make sure that everything is readable and clear! As the final exam is handwritten, this is a useful exercise.

g) The name of the uploaded document should be **rXXXXXXX.pdf** where you replace XXXXXXX with your student number.

h) You have to upload your solution through the assignment, **not using the file exchange**.

i) Clearly indicate the **final answer** of the question by placing it in a $\boxed{\text{box}}$.

The instruction and questions can be found in the 'assignment6.ipynb' file. Download that file from Toledo and upload it to Google Collab. (Alternatively you can also run it locally using Jupyter notebooks.)

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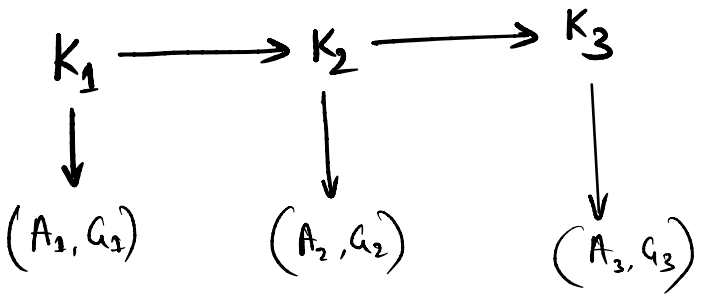
Solution

Fill in each answer in the respective box.

Question 1



Question 2

prob_KAG =

$p(A_t = a, G_t = g \mid K_t = k)$

Question 3

$p(K_t = 0|K_{t-1} = 1) =$ 0.2

Question 4

$p(K_3 = 1|obs) =$ 0.28

Question 5

$P(K_2 = 0) = 0.087$

$P(K_2 = 1) = 0.432$

$P(K_2 = 2) = 0.481$

Question 6

`argmu = np.` argmax(mu)

Question 7

0, 2, 1, 0, 2, 2, 2, 2, 1, 2