

SoC - WnCC

Intelligent Agents

TSV

Assignment 2

Create a two-dimensional matrix of the following dimensions containing **15,000** entries with value **0**

Name	Length and Breadth	#Initial entry containing 1
Dev, Aum, Divyanshi	100 x 150	(50,75)
Tushar, Naman, Madhumitha	50 x 300	(25,150)
Tanay, Prasann, Abishek	120 x 125	(60,63)

#Second Neighbour	#Second Neighbour	#Second Neighbour	#Second Neighbour	#Second Neighbour
#Second Neighbour	#First Neighbour	#First Neighbour	#First Neighbour	#Second Neighbour
#Second Neighbour	#First Neighbour	#entry	#First Neighbour	#Second Neighbour
#Second Neighbour	#First Neighbour	#First Neighbour	#First Neighbour	#Second Neighbour
#Second Neighbour	#Second Neighbour	#Second Neighbour	#Second Neighbour	#Second Neighbour

Process :

8 random entries swap with another set of 5 random set of entries

The **immediate neighbours** of an entry containing **1** each have a **0.25** probability of getting converted to **1**

The **second immediate neighbours** of an entry containing **1** each have a **0.08** probability of getting converted to **1**

Each entry has an **independent probability** of getting converted to **1** depending upon its relative position to an entry containing **1**

Note that it is **not mandatory** for one of the neighbours to be converted into **1**

Keep repeating the process till every entry becomes 1

Plot the same three graphs from the previous task (given below)

Plot 1: #1s vs #iterations

Plot 2: #iterations vs #runs

Plot 3: dy/dx vs x

Print the **average** you obtain from plot 2 and the **peak value of the fitted curve** from plot 3 in a **.txt** file.

Upload your code, the plots and the text file on your GitHub handle with the name as

SoC-Assgn2-Code-name

SoC-Assgn2-Plot-1-name

SoC-Assgn2-Plot-2-name

SoC-Assgn2-Plot-3-name

SoC-Assgn2-Values-name

respectively

Deadline : April 04, 2020 23:59