

PDPM Indian Institute of Information Technology, Design and Manufacturing, Jabalpur

Mechanical Engineering Discipline

End-Semester Examination

Geometric Programming Lab (ME 591L)

Time- 2 Hrs

Maximum Marks-50

Note- You need to submit your code to ankitnayak@iiitdmj.ac.in within 5 minutes after the exam.

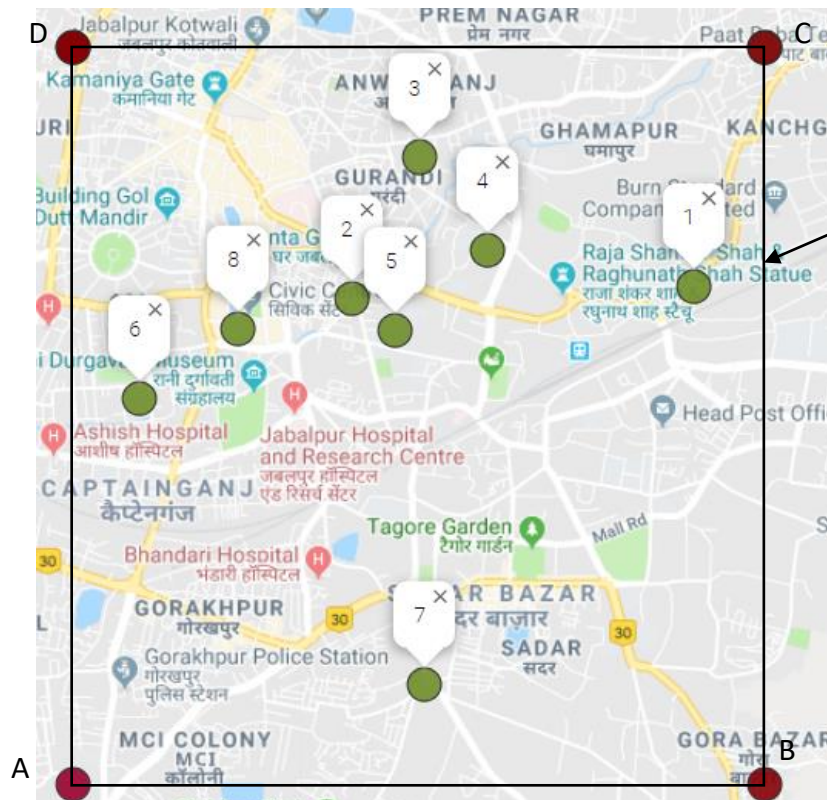
Problem Definition:

For general election 2019, the election commission of India wants to allocate the polling area for 8 polling booth of Jabalpur city. The allocation should be like that the voters should be walked as minimum as possible from their homes to polling station.

Divide the area of interest in 8 regions in respect to each polling booth as per the given condition and provide the GPS coordinate of the benchmarks (vertices) of the divided area and number of benchmarks (vertices) for each area marked with respect to each polling booth.

The GPS coordinate of the polling booth are as follows-

S. No.	Polling Booth	Latitude °(N)	Longitude °(E)
1.	Government Primary and Middle School Railway Saray, North Civil Line	23.168647	79.95647
2.	Govt. Primary Boys School Near Tayyabali Masjid	23.168069	79.93907
3.	Government School Gurandi, Jabalpur	23.17473	79.94254
4.	Govt. Model H. S. School, Ghamapur, Jabalpur	23.170348	79.94596
5.	Christ Church Boy's Senior Secondary School	23.16658	79.9413
6.	Govt. M.L.B.(Girls) M.School	23.1633	79.9284
7.	Girls Higher Secondary School, Katanga	23.149797	79.94276
8.	Pt Lajja Shankar Jha Govt. Model Higher Secondary School	23.166672	79.93333



Boundary of interested area

GPS coordinate of Boundary benchmarks (Vertices)

Bench Mark	Latitude °(N)	Longitude °(E)
A	23.145	79.925
B	23.145	79.96
C	23.18	79.96
D	23.18	79.925

Sample Solution

S.No.	Polling Booth	Number of benchmarks (vertices)	Vertices	Latitude °(N)	Longitude °(E)
1.	Government Primary and Middle School Railway Saray, North Civil Line	6	1	23.18	79.96
			2	23.1750	79.9521
			3	23.1608	79.9498
			4	23.1589	79.9501
			5		
			6		
2.	Govt. Primary Boys School Near Tayyabali Masjid				
3.	Government School Gurandi, Jabalpur				
4.	Govt. Model H. S. School, Ghamapur, Jabalpur				
5.	Christ Church Boy's Senior Secondary School				
6.	Govt. M.L.B.(Girls) M.School				
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