

Q. Apply the Hierarchical clustering algorithm to cluster the following data: criteria is minimum distance between two cities.

	BA	FI	MI	NA	RM	TO
BA	0	662	877	255	412	996
FI	662	0	295	468	268	400
MI	877	295	0	754	564	138
NA	255	468	754	0	219	869
RM	412	268	564	219	0	669
TO	996	400	138	869	669	0

The above table contains the distances between two cities (The names of the cities are abbreviated).

Solution: Given that the criteria of clustering is minimum distance between two cities.

So we start grouping of those cities who have minimum distance between them

$$(MI, TO) = \underline{\underline{138}}$$



	BA	FI	MI	NA	RM	To
BA	0	662	877	255	412	996
FI	662	0	295	468	268	400
MI	877	295	0	754	564	138
NA	255	468	754	0	219	869
RM	412	268	564	219	0	669
To	996	400	138	869	669	0

	BA	FI	MI/To	NA	RM
BA	0	662	877	255	412
FI	662	0	295	468	268
MI/To	877	295	0	754	564
NA	255	468	754	0	219
RM	412	268	564	219	0

	BA	FI	MI/To	NA/RM
BA	0	662	877	255
FI	662	0	295	268
MI/To	877	295	0	564
NA/RM	255	268	564	0



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	BA/NA/RM	FI	MI/TO
BA/NA/RM	0	268	564
FI	268	0	295
MI/TO	564	295	0

	BA/NA/RM/FI	MI/TO
BA/NA/RM/FI	0	295
MI/TO	295	0

