International Journal of Advance Research, IJOAR .org
Volume 3, Issue 3, March 2015, Online: ISSN 2320-9186

CONSTRUCTION OF COMPUTERS OF MAXIMUM ABILITY AND APPLICATION IN COMMUNICATION SCIENCE

SUNIRMAL ROY
EX-READER IN MATHEMATICS
PRESIDENCY COLLEGE
COLLEGE STREET,KOLKATA,WEST BENGAL,INDIA

KEYWORDS:

COMPUTER,ABILITY,MAXIMISE, COMMUNICATION,I.Q.

ABSTRACT:

Graph enumeration is the most important work in graph theory. Author's technique in graph enumeration is able to draw all types of graphs. The number of possible connected non-isomorphic graphs having a fixed number of vertices and edges was possible to count by polya's method. This was the base of graph theory. But this method did not consider parallel edges (edges joining the same two vertices) and by this method the graphical pictures of the non-isomorphic graphs were not possible to obtain. All these limitations are removed in Roy's graph technique .By drawing the graph of a problem and applying graph theory shortest path and shortest spanning tree of the vertices in the human brain for almost all problems has been obtained. Following the shortest path between the starting vertex and the solution vertex of a problem memory, human I.Q. and following that structure computer's I.Q can be maximised by this technique. Cost of communication in Railway,Road etc, can be minimised in this way.

TECHNIQUE :

Suppose one wants to draw all non-isomorphic connected graphs having n vertices and e edges (including parallel edges). n vertices can be connected minimally by (n-1) i.e. N(say) edges. Maximum number of degree of incidences for any vertex is k (say).

1. Find all non-isomorphic simple (excluding parallel edges) graphs having n vertices and N edges. These G_1 (say) graphs can be obtained by partition theory i.e. by n partition of the number 2 N.

2. Then find all non-isomorphic simple graphs having n vertices and (N+1) edges. Since (N+1) edges have totally 2(N+1) degree of incidence, these G_2 (say) graphs can be obtained by partition theory i.e. by n partition of the number 2(N+1).

3. Then find all non-isomorphic simple graphs having n vertices and (N+2) edges. Since (N+2) edges have totally 2(N+2) degree of incidence, these G_3 (say) graphs can be obtained by partition theory i.e. by n partition of the number 2(N+2).

... ...

(k) In this way find all non-isomorphic simple graphs having n vertices and e edges. Since e edges have 2e degree of incidence. These G (say) graphs can be obtained by partition theory i.e. by n partition of the number 2e.

(l) Now for (1) to get e edges we have to add e-N edges to each of the G_1 graphs. For this, find all partitions (remembering no number is greater than or equal to k) of the number e-N. If there are r_1 elements in any one of this partition. Then these e-N edges can be added in N places in Nc_{r1} ways. In this way find Nc_{r2}, Nc_{r3}.....ways for other partitions having r2, r3,...... etc. elements. Then for (1) we shall get Nc_{r1} + Nc_{r2} + ...)G_1 connected graphs having n vertices and e edges.

(2) For (2) to get e edges we have to add e-(N+1) edges to each of the graphs. For this find all partitions (remembering no number is greater than or equal to k) of the number e-N-1. Find N+1Cm1, N+1Cm2 .....etc. ways for partitions having m1, m2......etc. elements respectively. Then for (2) we shall get (N+1Cm1 +N+1Cm2 +.........) G_2 connected graphs) having n vertices and e edges.

In this way add edges to edges to all graphs in (1), (2), ...k) to get e edges in all cases. Remember that for all graphs in (k) no edge is to be added. In this way we are getting.

(NCr2 +NCr2 + ...G1 + (N+1Cm1 +N+1Cm2.......)G2+....+G i.e. T_1 (say) connected graphs having n vertices and e edges (including parallel edges). Some of these graphs are again isomorphic. Find all non-isomorphic possible T_2 graphs among these T_1 graphs. Find all non-isomorphic possible (degree of incidence of no vertex is greater than or equal to k) T_3

graphs among these T_2 graphs. Then T_3 graphs will give all possible non-isomorphic connected graphs having n vertices and e edges (considering parallel edges).

It is possible to find algorithms of different graph theoretic problems having minimum execution time firstly by drawing graph by this technique and finding out the shortest path between the starting vertex and the final solution vertex.

APPLICATION IN MAXIMISATION OF I.Q. AND IN THE DEVELOPMENT OF COMPUTER :

The number of possible connected non-isomorphic graphs having a fixed number of vertices and edges was possible to count by polya's method. This was the base of graph theory. But this method did not consider parallel edges (edges joining the same two vertices) and by this method the graphical pictures of the non-isomorphic graphs are not possible to obtain. All these limitations are removed in Roy's graph technique. For this reason, better algorithms of problems (which can have graph theoretic solution) can be obtained by drawing the graph of the problem in this way an calculating the shortest path between the starting vertex and the final solution vertex.

Shortest path from one vertex to another vertex in the brain.

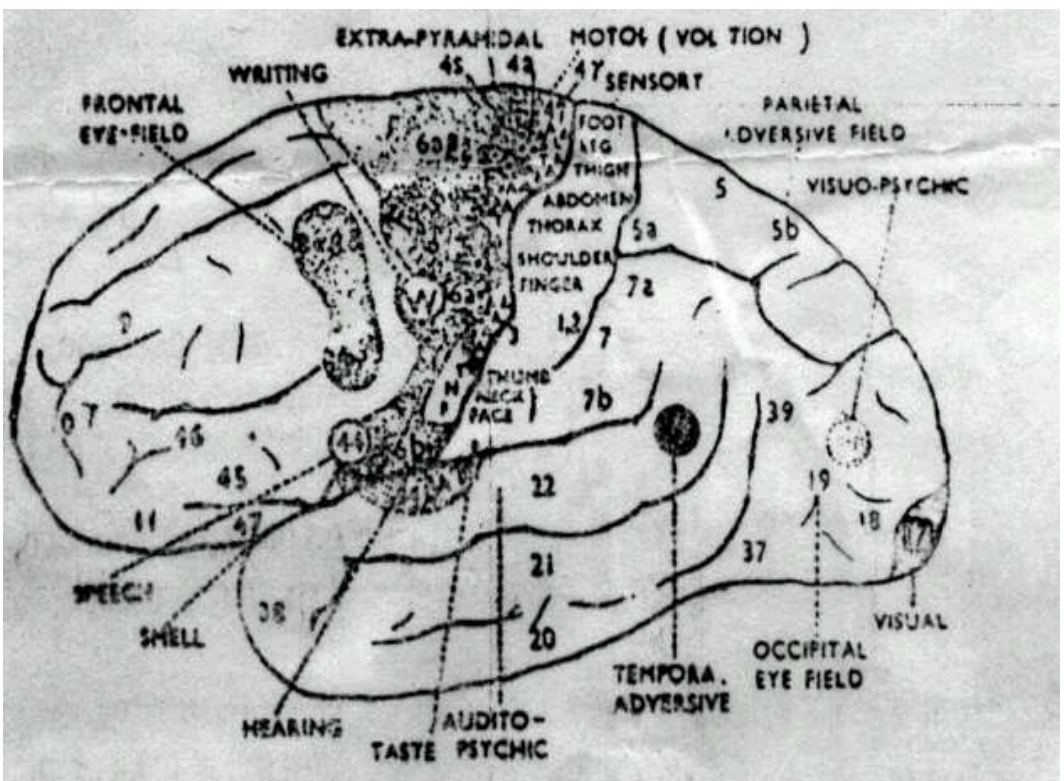

Fig. 3.226. The centres and areas in the left cerebr. l hemisphere.

In the above Fig. of human brain the 31 vertices are marked in the following manner :

1,2	**...**	**Vertex**	**1**
3	**...**	**‘’**	**2**
4	**...**	**“**	**3**
5	**...**	**“**	**4**
5A	**...**	**“**	**5**
5B	**...**	**“**	**6**
6A	**...**	**“**	**7**
42	**...**	**“**	**27**
44	**...**	**“**	**28**
45	**...**	**“**	**29**
46	**...**	**“**	**30**
47	**...**	**“**	**31**

In the (i.j) place of the following table the number indicates the distance (in cm.) of the V1 th vertex from the Vj the vertex

1, 1.06, 1.03, 0.06, 2000000, 1.05, 2, 2.02, 3.01, 1, .005, 1.05, 3.05, 5.06, 6.05, 6, 4.02, 3.04, 2.06, 4, 3.02, 2.06, 5.03, 2.01, 3.04, 3, 3.06, 4.09, 5.01, 5

2.04, 3, 2.07, 0.08, 1.05, 2000000, 3, 3, 4.05, 2, 1.05, 2.05, 5. 4.08, 7.01, 7.09, 7.03, 3.01, 2.06, 2.02, 4.05, 4, 3.05, 6.05, 1.06, 4.05, 4.02, 5, 6.02, 6.05, 6.04

1, 0.04, 2.01, 3, 2, 3, 2000000, 1.05, 3, 1.05, 1.08, 1.06, 1.06, 1.02, 3.06, 4.04, 3.06, 5.06, 4.07, 4.04, 3.02, 2.06, 2, 3.05, 3.04, 1.07, 1.06, 1.06, 3, 3, 3.01

2.01, 1.09, 1, 3.02, 2.02, 3, 1.05, 2000000, 3, 2.05, 2.03, 3.06, 2.02, 3.05, 4.07, 4.06, 6.02, 5.06, 1, 4.07, 4.02, 3.05, 4.08, 4.05, 3.02, 2.09, 4, 4.09, 4.01

1.09, 1.05, 3.05, 4.01, 3.01, 4.05, 3, 3, 2000000, 2.01, 2.08, 2, 2.01, 2.08, 2, 2.01, 0.09, 3.02, 3.02, 3.05, 2.06, 5.05, 4.07, 4.02, 2, 1.05, 1.01, 2, 3.08, 0.03, 0.04, 1.06, 2.01, 1.05

0.02, .09, 2.02, 1.07, 1, 2, 1.05, 2.05, 2.01, 2000000, .05, .05, 3, 2.06, 5.01, 6, 5.01, 3.06, 3.03, 2.05, 3, 2, 1.05, 4.03, 1.09, 2.05, 2, 2.08, 4.01, 4.01, 4.01

.06, 1.01, 1.01, .05, 1.05, 1.08, 2.03, 2.08, .05, 2000000, 1, 3.04, 3.01, 5.03, 6.02, 5, .06, 3.07, 3.01, 2.02, 2.04, 2.06, 2.01, 4.09, 1.06, 3, 2.06, 3.02, 4.05, 5, 4.08

.06, .09, 2.08, 2.04, 1.05, 2.05, 1.08, 3.06, 2.05, 1, 2000000, 3.03, 2.08, 5, 5.06, 4.07, 3.05, 2.09, 2.03, 2.01, 1.05, 0.09, 3.09, 1.07, 1.09, 1.05, 2.04, 3.08, 4.02, 3.08

03, 0.04, 3, 4.03, 4.05

1.06, 1.06, 2.01, 3, 3.04, 3.04, 2000000, 1, 2, 2, 3.01, 7, 6.05, 6, 4.03, 4, 3.03, 3.04, 5.02, 2.056, 1.08, 1.2, 2.06

2.02, 1.08, 3.03, 3.05, 4.01, 2.02, 1.09, 2.03, 3.02, 1, 2000000, 2.03, 2.03, 2.04, 6.04, 5.03, 3.0121, 2.01, 2.04, 4, 01, 1.04, 1.05, 1.09

4.07, 4.02, 5, 6.06, 5.07, 4.03, 3.05, 3.02, 5.03, 3, 2, 2.03, 2000000, 1, 1.07, 8.07, 8.04, 7, .01, 5, 4.06, 3, 7091, 3.01, 3.05, 1.06, 1.03, 2.02

4.08, 5.08, 6, 06, 05, 7.01, 4.04, 6.05, 6, 6.02, 5.02, 2.03, 1, 2000000, 1, 9.02, 8.06, 8, 5.04, 8.1, 2.07, 3.4, 3, 1.06, 1.01, 2, 4.09, 4.03, 5.08, 6.05, 7.03, 4.03, 2.06, 5.06, 4.03, 2.04, 1.04, 200000, 8, 1, 7.02, 4.01, 5.6, .08, 3.01, 2.08, 2.08, .08, .09

4.01, 4.07, 5.03, 5.0, 3.02, 6.02, 5.05, 3.05, 4.03, 7, 7.08, 9.05, 2, 2000000, 1, 8.02, 4.4, 3.07, 6.06, 5.012, 4.07, 6.02, 7.02, 8, 7

3.06, .04, 5.01, 3.01, 3.03, 2.07, 5.03, 5.03, 3, 1, 6.01, 5.08, 8.06, 7, 6, 1, 2000000, 0.01, 3.05, 3.05, 6.1, 4.03, 4.03, 6.08, 7.03, 6.06

3, 3.04, 4.05, 2.08, 2.06, 2.02, 4.03, 5.01, 4.02, 2.02, 2.06, 3, 7.04, 7.02, 8.02, .05, 2000000, 3.01, 2.09, 2.08, 3.09, 4.09, 6.02, 6.08, 6

3, 2.08, 5.01, 4.07, 4, 4.05, 8.04, 4.32, 3.02, 4.03, 3.01, 5.04, 4, 3.05, 3.01, 2000000, .05, 1.02, 2.07, 1.07, 1.05, 2.04, 4.02, 3.02

2.01, 4.03, 4.03, 3.03, 4, 2.04, 1.05, 2, 2.06, 1.06, 4, 5, 4.01, 4.01, 4, 3.05, 2, .098, .05, 2000000, .06, 2.09, 2.06, 1.06, 1.02, 3.02, 3.07

.04, 1.04, 4.04, 2.06, 3.05, 2, 3.05, 1.05, 2.05, 9, 2.01, 4.06, 5, 5, 3.09, 3.03, 2.05, 1.08, 2000000, 3, 2.05, 1.01, .07, 1, 3.02, 3.06, 3

4.01, 3.06, 5.05, 5, 6.05, 3.05, 4.08, 3, 4.09, 3.09, 2.04, 3, 2.03, 6.07, 6.03, 3, 2.09, 3, 2000000, 3.01, 1.06, 2, 1.06, 1.01, 1.04

2.01, 2.01, 2.01, 2.01, 3.04, 4.004, 4.05, 3.08, 1.09, 1.09, 1.06, 5.04, 7.01, 7.06, 1.08, 1.06, 3.06, 2.05, 3.05, 2000000, 3.04, 4.04, 5.03, 6.05, 5.08

2.01, 1.06, 2.09, 3.03, 4.04, 1.06, 3.04, .03, 3, 1.03, 2.06, 1.012, 1.04, 2.09, 5.01, 4, 3, 4.08, 1.02, 1.02, 1.06, 3.07, 2000000, 2, 4.03, 5.08, 6.01, 5.06

1.08, 1.04, 3.04, 4.13, 4.02, 1.06, 3.06, 2, 2.06, 1.05, 2.02, 1.04, 3.05, 4.03, 4.03, 3.08, 1.05, 1.01, .07, 2, .02, 2000000, .08, 2.01, 2.06, 2

3.06, 2, 3.08, 4.06, 3.06, 5, 4.2, .09, .03, 2.08, 3.08, 2, .04, 1.08, .06, 3, 2.01, 5.01, 4.09, 2.06, 2, 1, 1.06, 4.03, 4.03, .08, 2000000, 1, 1.05, .04

3.06, 3.02, 1, 5.01, 4.09, 6.02, 3, 4, 1.06, 4.01, 4.03, 3008, 2.01, 1.06, 1.06, .08, 7.2, 6.06, 3.04, 3.01, 2.01, 5.08, 5.01, 2.01, 1, 2000000, .05, .04

4.43, .05, 5, 6.01, 5.01, 6.05, 3, 3.09, 2.1, 4.05, 5, 4.02, 3, 1.09, 1.02, 1.01, .07, 8, 7.03, 6.08, 4.03, 3.07, 3.06, 1.06, 6.01, 5.01, 2.01, 1.05, .05, 2000000, .08

3.08, 3.02, 5.01, 6.5, 6.04, 3.01, 4.01, 1.05, 4.01, 4.08, 3.08, 2.06, 1.07, 2.02, .09, 7, 6.06, 6, 3.02, 3, 3.06, 5.06, 5.06, 2, .04, .04, .08, 2000000.

The shortest paths from one vertex to another vertex and the shortest lengths has been obtained . Length of shortest path between vertex 28 and vertex 29 is .08, length of shortest path between vertex 28 and 30 is .12, length of shortest path between vertex 28 and 31 is .04.

The path of the shortest spanning tree is (Starting vertex 28) :

V_{28} To V_9; V_9 To V_{27}; V_{27} To V_{26}; V_{28} To V_{31}; V_{31} To V_{29}; V_{29} To V_{30}; V_{31} To V_{24}; V_{28} To V_{14}; V_{30} To V_{17}; V_{27} To V_{23}; V_{23} To V_{22} To V_{21}; V_{23} To V_{12}; V_{12} To V_{10}; V_{10} To V_1; V_{10} To V_{11}; V_{11} To V_5; V_1 To V_2; V_2 To V_7; V_5 To V_4; V_4 To V_6; V_1 To V_{13}; V_{23} To V_3, V_{17} To V_{16}; V_{16} To V_{15}; V_3 To V_8; V_{11} To V_{25}, V_{25} To V_{20}; V_{20} To V_{19}; V_{19} To V_{18};

The length of the shortest spanning tree is = 7.54

Conclusion : Firstly by drawing the graph of aproblem and then by the knowledge of the shortest paths and shortest length from one vertex to another vertex we can go from one place to another place in shortest time by following that shortest path and we can also calculate the shortest time to go from the said place to another said place. This is regarding Telecommunication and

Railway, Road etc. connections. Connections between different places by this method is economic also.

This is economic also. Regarding connections in brain the result can be applied. We know memory can be increased the result can be applied. We know memory can be increased by associating one thing with another thing or things. By associating one vertex with it's nearest vertex by following shortest path or by associating one vertex with another vertices by following the path of the shortest spanning tree of all these vertices which are to be associated memory of that vertex can be increased and that vertex can be remembered in a minimum time.Following these structures I.Q. and Memory of a computer can be increased.

If the graph of the solution of a problem can be drawn by some vertices and by some edges then draw all graphs of all possible solutions. Then find out the shortest path (shortest spanning tree in case of a solution having more than one part) of the starting vertex from the vertex of final solution. If we follow that shortest path for the solution of the problem then we will be able to solve that problem in a minimum time. This is more fruitful when we solve same type of problems repeatedly. If we follow this method for all problems then not only we can solve a problem in a minimum time, we shall also be able to increase our I.Q at the same time. First of all by electrical waves from outside and by some mental exercise all vertices and all edges in the brain should be made most active (all connections between all vertices should be made) and then following the above method we can reach to maximum I.Q. Computer brain in respect of these problems can be improved to the maximum level (by minimising the execution time) by the same method and by following the same structure in human brain.

REFERENCE

----

1. Deo,N.- Graph theory