Laser Photocopy Advanced Version...

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Abstract:

The world is now of experts and the user do desire to get fine printing from printer at economical rates. The presentations of people, in today's world do represent their identities , taste of art etc. The project of mine is based on laser printer concept through which one can increase printer's performance , efficiency and quality as well.

Introduction:

We know that laser photocopies are based on the laser beam concept.

The Working Principle:

The quality of the picture printed depends on the digital binary signals. [DBS] If the digital binary signal input is 4, then the drum is divided into 16 sectors (i.e. 2 ^4 = 16)

And if DBS=10, then 2^10=1024 sectors. Thus Quality increases.

So, by adjusting the DBS, quality can vary.

Now, for present instance consider DBS = 4 then sectors=16.

Suppose,

Conducting - sector =0

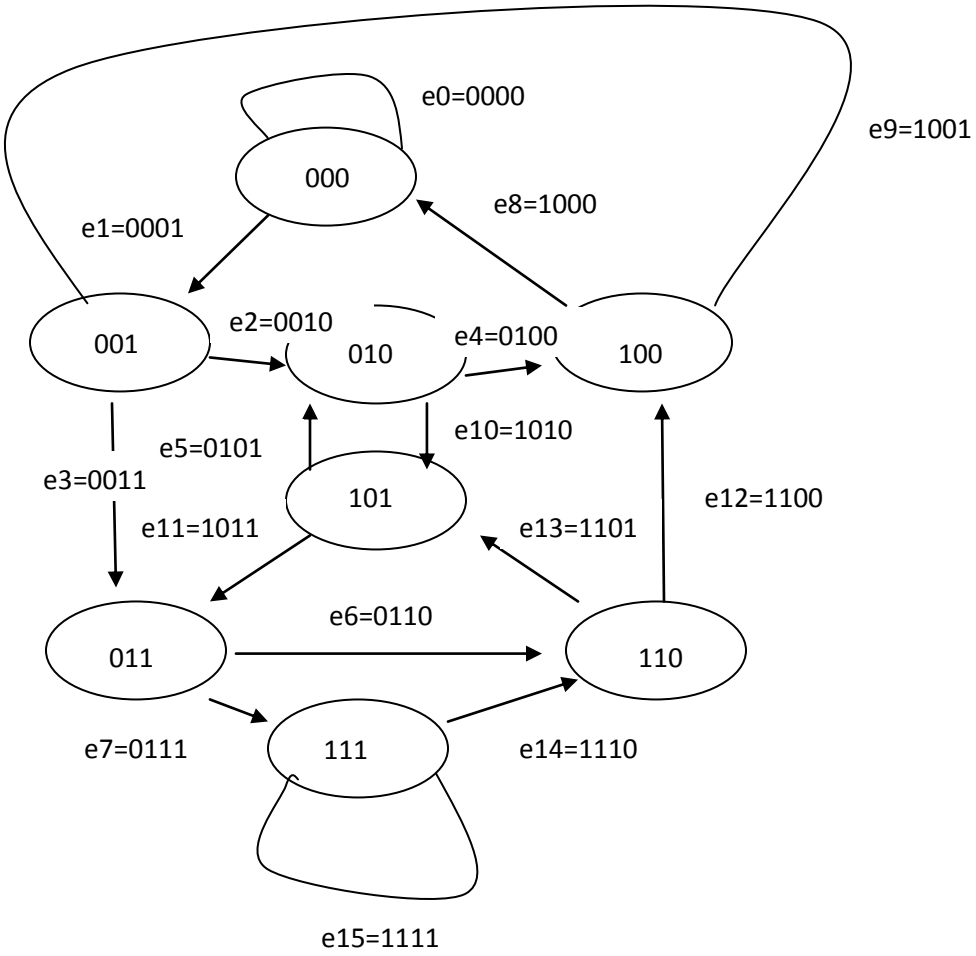
non-conducting sector =1

The information of printable regions is being specified by the conducting sector regions , the color information is being controlled by printing software.

Now , among these 16 sector we do have to decide the conducting and non - conducting sectors depending upon the input string.

The input string is being decided by scanning the paper information to be printed, by passing them under a strong light and a lens system, which differentiates light(no ink) from inked areas and a logical system which attempts to determine which of the possible characters is being examined. Thus no ink area input-> 0 & 1 for ink area vice versa.

Now , our aim is to determine the conducting and non conducting sectors among 16 sectors. Thus, the possible states = 16/2 = 8 states from 0 -7 in binary form



From a vertex labeled q1q2q3 , there is an edge to the vertex labeled q2q30 and an edge to the vertex labeled q2q31.

In particular, the edge from the vertex q1q2q3 to the vertex q2q30 is labeled q1q2q30 and the edge from the vertex q1q2q3 to the vertex q2q31 is labeled q1q2q31.

Since, the vertices are labeled with eight distinct 3 digit binary numbers, the edges will be labeled with 16 distinct 4 digit binary numbers.

In the path of the graph, the labels for any two consecutive edges must be of the form q1q2q3q4 and q2q3q4q5 namely , the three trailing digits of the label of the first edge are identical to the three leading digits of the label of the second edge.

Since the 16 edges in the graph are labeled with distinct binary numbers, it follows that corresponding to an eulerian circuit of the graph, there is a circular arrangement of the 16 binary digits in which all sequence of 4 consecutive digits are distinct.

For instance, corresponding to the eulerian circuit (e0,e1,e5,e10,e4,e9,e3,e6,e13,e11,e7,e15,e14,e12,e8), the sequence of 16 binary digit is 0000101001101111

Note: The path must be eulerian, to avoid overwriting.

The Transition Table:

	0	1
000	000	001
001	010	011
010	100	101
011	110	111
100	000	001
101	010	011
110	100	101
111	110	111