

CHAPTER IV  
INPUT PROGRAMME



This input programme is built up to keep a data preparation as simplest as the limitation of the I.B.M. 1620 computer allow.

The shunt susceptances of the line constant network connected to any particular busbar are added together making only one nodal admittance including the nodal capacitor if there is any.

Since the admittance matrix is symmetrical,

$$A(2,1) = A(1,2)$$

One half of the mutual components along the diagonal matrix including the diagonal components is sufficient for computation.

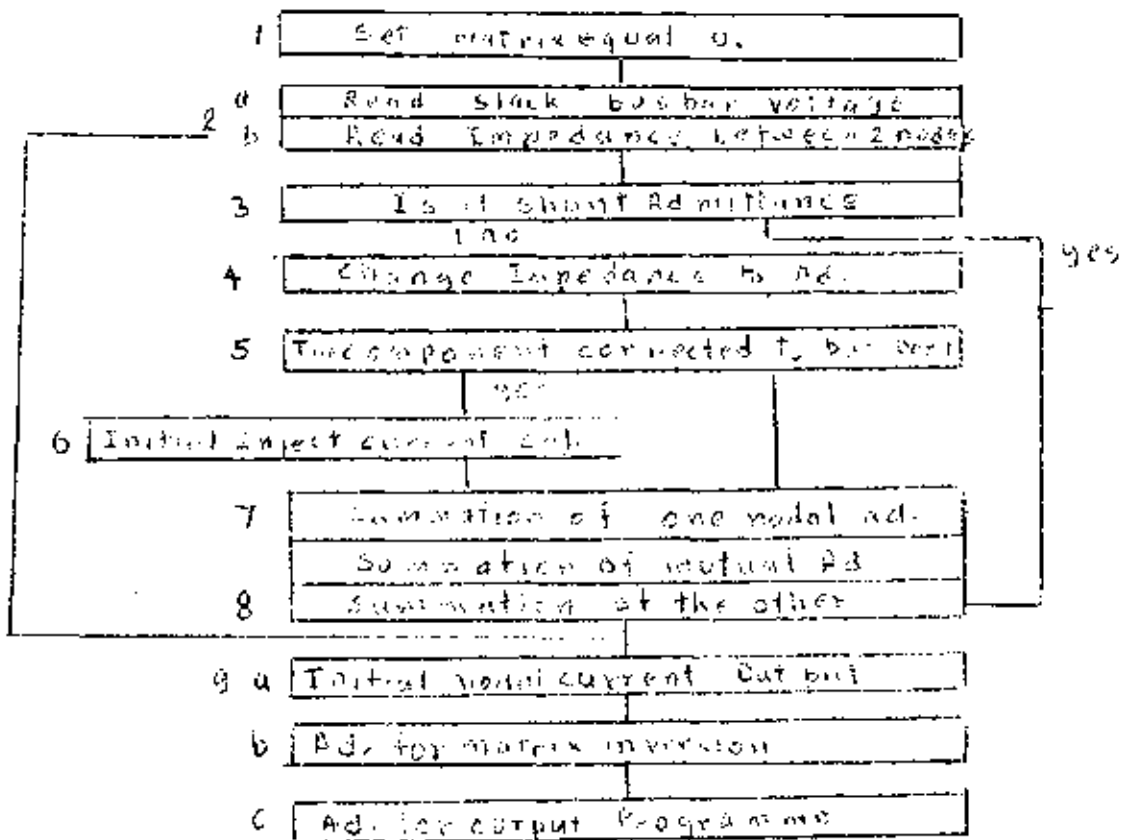


Figure 7 Flow Diagram of Input Programme

The input programme consists of 10 steps;

1. System admittance and initial nodal current are set zero.
- 2.a. Slack busbar voltage are read.
- b. Line impedances with its terminals are read.
3. If it is a shunt admittance, step 8 is chosen.
4. After each data in 2b. has been read, it is turned to be an admittance  $Y = 1/Z$
- 5-6. If the input just read is connected to 1<sup>st</sup> busbar, the initial current will be calculated and stored.

$$I_{m(n)} = -Y_{1,n} \times V_1$$

7. Line admittance will be added to the both nodal admittance terminals and subtracted from the mutual admittance.
8. Nodal impedance input will be added only to its own terminal.

Line characteristic will be read until the last one which is defined by zero terminals.

- 9.a. Initial nodal current,  $I_{m(n)}$  which is an input of the voltage solution programme will be punched and typed.
- b. Admittance matrix with-out 1<sup>st</sup> row and 1<sup>st</sup> col. will be punched for the matrix inversion programme.
10. A complete admittance matrix will be punched and printed for the output programme.