Description : *Variable Type* : *Variable Name*

- **First Record: General Information**

  1. Number of busbars : *integer* : *no_bus*
  2. Number of transmission lines (feeder) : *integer* : *no_fd*
  3. Number of transformers : *integer* : *no_tr*
  4. Number of pv buses : *integer* : *no_pv*
  5. Number of shunt loads : *integer* : *no_shunt*
  6. Base MVA : *float* : *base_MVA*

- **Second Record: Bus Data** (dimension of each vector is no_bus × 1)

  1. Bus code : *integer* : *bus_code*
  2. Active power generation in MW : *float* : *Pg*
  3. Reactive power generation in MVAR : *float* : *Qg*
  4. Active power demand in MW : *float* : *Pd*
  5. Reactive power demand in MVAR : *float* : *Qd*
  6. Bus type (1: Slack bus, 2: PV bus, 3: PQ bus) : *integer* : *bus_type*

- **Third Record: Transmission Line Data** (dimension of each vector is no_fd × 1)

  1. Transmission line code : *integer* : *fd_code*
  2. From bus code : *integer* : *fd_frombus*
  3. To bus code : *integer* : *fd_tobus*
  4. Resistance in p.u. : *float* : *fd_r*
  5. Reactance in p.u. : *float* : *fd_x*
  6. Full line charging admittance in p.u. : *float* : *fd_ys*
  7. Reactance connected to From-bus in p.u. : *float* : *fd_reac_frombus*
  8. Reactance connected to To-bus in p.u. : *float* : *fd_reac_tobus*
  9. Line status (1: connected, 0: open) : *integer* : *fd_status*

- **Fourth Record: Transformer Data** (dimension of each vector is no_tr × 1)

  1. Transformer code : *integer* : *tr_code*
  2. From bus code : *integer* : *tr_frombus*

3. To bus code : *integer* : *tr_tobus*

4. Resistance in p.u. : *float* : *tr_r*

5. Reactance in p.u. : *float* : *tr_x*

6. Off-nominal tap ratio : *float* : *tr_alpha*

7. Transformer status (1: connected, 0: open) : *integer* : *tr_status*

- **Fifth Record: PV Bus Data** (dimension of each vector is no_pv $\times$ 1)

  1. PV bus number : *integer* : *pv_no*

  2. PV bus code : *integer* : *pv_buscode*

  3. Minimum active power limit (in MW) : *float* : *pv_pmin*

  4. Maximum active power limit (in MW) : *float* : *pv_pmax*

  5. Minimum reactive power limit (in MVAR) : *float* : *pv_qmin*

  6. Maximum reactive power limit (in MVAR) : *float* : *pv_qmax*

  7. PV bus specified voltage : *float* : *pv_Vsp*

- <u>**Sixth Record: Slack Bus Data**</u>

  1. Slack bus code : *integer* : *slack_buscode*

  2. Minimum active power limit (in MW) : *float* : *slack_pmin*

  3. Maximum active power limit (in MW) : *float* : *slack_pmax*

  4. Minimum reactive power limit (in MVAR) : *float* : *slack_qmin*

  5. Maximum reactive power limit (in MVAR) : *float* : *slack_qmax*

  6. Slack bus specified voltage : *float* : *slack_Vsp*

- **Seventh Record: Shunt Load Data** (dimension of each vector is no_shunt $\times$ 1)

  1. Shunt load number : *integer* : *shunt_no*

  2. Shunt load bus code : *integer* : *shunt_buscode*

  3. Shunt load conductance (in p.u.) : *float* : *shunt_g*

  4. Shunt load susceptance (in p.u.) : *float* : *shunt_b*

  5. Shunt load status (1: connected, 0: open) : *integer* : *shunt_status*

<u>REMARKS</u>

- Read first record and store in appropriate variables.

- From the second record onward, declare memory for each variable as per dimension.

- Read using *for* loops.