TEPB

GIS Programming Manual

Preliminary Version 26.08.98

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PREP / SOPAC

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Introduction

The Geographical Information System for TEPB was designed for asset management, optimised planning, improved work progress monitoring and for better customer service. The GIS is used by management and staff to improve work achievements and quick response to customers.

This program documentation has different chapters containing the:

- Structure of the program
- How to access information
- Documentation of the sup programs

This GIS programming manual does not replace the MapInfo or the MapBasic User's Guide or Reference Guide. It is designed to maintain and update the MapBasic add on to the normal MapInfo menu bar. The add on shortcuts the normal MapInfo queries and other procedures and allows a non GIS trained person to access spatial and non spatial information through just a click on a button.

The structure of the documentation allows permanent update whenever a program is added or modified. This will enable program understanding and maintenance merely by inexperienced users. This will also allow adapting parts of these programs to other utility e.g. Tonga Water Board.

Structure of Program

TFPR0898.MRX

TFPRMAIN.MBO

- PASSWORD.MBO
- CRMEPOLE.MBO
  - LOCAPOLE.MBO
  - POLECONS.MBO
  - POLETYPE.MBO
  - STRELGHT.MBO
- CRMELINE.MBO
  - LIN_CUT2.MBO
  - FEEDERSL.MBO
  - LINESVOL.MBO
  - LINEPROT.MBO
- CRMECUST.MBO
  - LOCACUST.MBO
  - LOCCUSTM.MBO
  - LOCCUSTI.MBO
  - LOCCUSTP.MBO
  - CUSTCOND.MBO
  - PHASTYPE.MBO
  - CUSTCLAS.MBO
  - ALLCCLAS.MBO
  - ALLPTYPE.MBO
- CRMETRAN.MBO
  - INSMONT.MBO
  - LOCATRAN.MBO
  - NRCONSTR.MBO
  - MAXPOWTR.MBO
  - AGETRANS.MBO
  - TYPINSTR.MBO
  - HVTYPETR.MBO
  - LVTYPETR.MBO
  - CONSTRAN.MBO
- CRMEMETR.MBO
  - INSMONM.MBO
  - LOCAMETR.MBO
  - TYPEMETR.MBO
  - LOCMETTP.MBO
  - METNOCON.MBO

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How to Access Information

TEPB Spatial database is object oriented. Thus enabling users to have access to any information through the objects:

- Poles
- Lines
- Customer
- Transformers

For any information requirement for purposes such as, asset management, planning, projects monitoring or customer service, the user will have to address one of the above mentioned objects. These objects have drop down menus that are added to the existing MapInfo Menu Bar.

Drop Down Menu – Poles

Currently the Drop down menu Poles contains four different programs.

Construction in Month...
This program allows the user to display all poles constructed in a particular month. The program asks the user to type in the year and the month. Then it displays all poles constructed during this month in red and all others in black. [PoleCons.MBO]
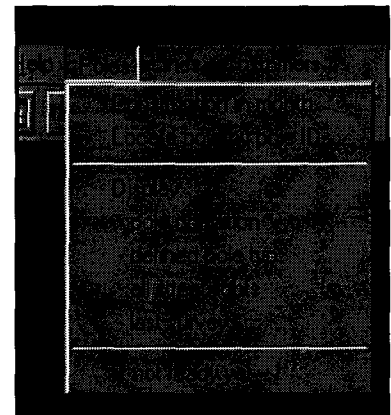
Locate a Pole
This program will enable the user to locate a pole by typing in the Pole number or Id. This information is required from the user by the program. Then the identified pole is centred and zoomed in on the screen. The identified pole is displayed in red, all others in black. Clicking on the Pole allows the user to access all information about this Pole, such as Pole type, Voltage, etc. [LocaPole.MBO]

Pole Condition
This program is not ready yet. It will later display the pole condition registered by the last GPS survey. During such surveys the teams will store information about the pole condition into the data dictionary of the GPS rover.

Defined Pole Type
For this program the operator has to select a pole type from a drop down list. Then the program displays all pole of this type in red and poles of all other type in black. [PoleType.MBO]

Street Lights
This program displays the poles with streetlights in different colours due to type of the mounted street light. All poles without street light it displays in black. [StreLght.MBO]

Last Survey
This program is not ready yet. When the GPS survey will take place regularly, this program will provide an overview which poles have been surveyed in which period.

Drop Down Menu – Lines

Currently the Drop down menu lines contains five different programs so far (Edwin will add a lot!).

Cut a Line

The program "cut a line" provides a scissors for the user. First the user has to zoom into the part of the map where he wants to simulate a line cut. Then he clicks on the scissors tool bar and afterwards on the point of cut on the line. The program shows the part of the line network, which is without electricity in red the rest in black. [Lin_Cut2.MBO]
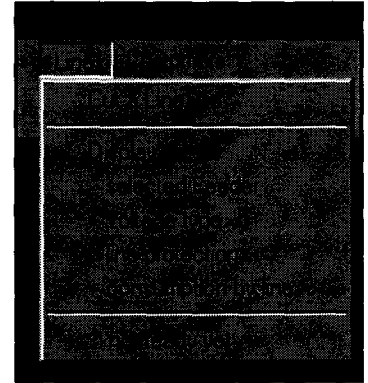
Selected Feeder

The program let the operator select a feeder by its name from a drop down list. Then the program shows this particular feeder in red whereas the other feeders are displayed in black. [FeedersL.MBO]

Voltage Type

This program displays all lines in different colours according to their voltage. Note: the upper table information is displayed, there may be two or more lines on one pole and the top GIS layer is displayed! [LinesVol.MBO]

Consumption by Line

This program is not ready yet. It will display the calculated consumption on the line.

Drop Down Menu – Customer

The drop down menu customer provides the access to programs related to customers and meters. [CrMeCust.MBO]

Customer Connection in Month…

This program allows monitoring the progress of work in TEPB. After typing in the month and year the program displays all customer connected during this particular period in red and the rest in black. [CustCond.MBO]

Customer Identification by Meter Number

This program asks the operator for typing in the meter number and then display the corresponding customer. The display centralises the particular customer in red and zooms in at the same time. [LocCustM.MBO]
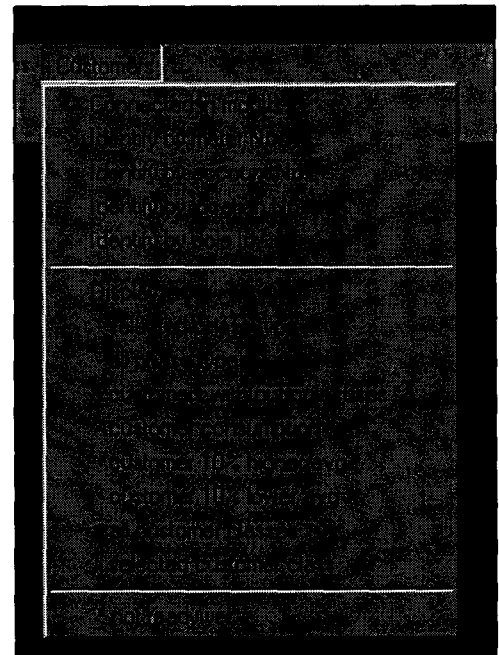
Customer Identification by Account Number

This program asks the operator for typing in the account number and then display the corresponding customer. The display centralises the particular customer in red and zooms in at the same time. [LocaCust.MBO]

Customer Identification by Location Number

This program asks the operator for typing in the location number and then display the corresponding customer. The display centralises the particular customer in red and zooms in at the same time. [LocCustL.MBO]

Customer Identification by Pole Number

This program asks the operator for typing in the number of the next pole and then display the corresponding customer. The display centralises the particular customer in red and zooms in at the same time. [LocCustP.MBO]

Phase Type

The program let the operator select a phase type. Then the program shows all customers connected to this corresponding phase in red whereas the other customers are displayed in black. [PhasType.MBO]

All Phase Types

This program displays all customers due to their connected phase type in different colours. [AllPType.MBO]

Customer with and without Pole Fuse

The program is not ready yet. The program will displays the customers connected without pole fuse in black and the ones connected with pole fuse in red.

Customer Consumption

Program not ready yet

Customer Consumption 10% higher than Average

Program not ready yet

Customer Consumption 10% lower than Average

Program not ready yet

All Customers grouped by Class

The program displays all customers grouped according to following customer types:
- Domestic
- Commercial
- Church
- Hotel
- Industrial

[AllCclas.MBO]

Selected Customer Class

The program asks the operator (Paula) for selecting a customer class. Then it displays the selected customer group in red and all other customers in black. [CustClas.MBO]

Drop Down Menu – Transformers

The drop down menu transformers provides the access to programs related to load management, transformer monitoring etc. The drop down menu allows the access to nine different programs so far.

Installation Month

The program installation month allows the user to display all transformers installed in a particular month. The program asks the user to type in the year and the month. Then it displays all transformers installed during this month in red and all others in black. [InsMonT.MBO]
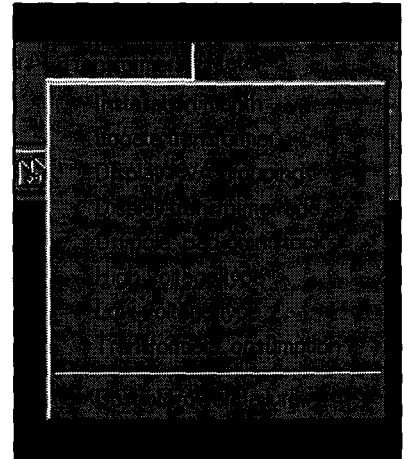
Locate Transformers

This program will enable the user to locate a transformer by typing in the transformer location number. Then it centres the identified transformer and zooms in. The identified transformer is displayed in red, all others in black. Clicking on the transformer allows the user to access all information about this transformer, such as transformer type, voltage, load, etc. [LocaTran.MBO]

Display KVA Groupings

The program displays all transformers grouped according to following KVA ranges:
- 1 - 15
- 15 - 30
- 30 - 50
- 50 - 100
- 100 - 200
- 200 - 500
- 500 - 1000

[MaxPowTr.MBO]

Display Transformer Age

This program displays all transformers in different colour according to their age. The grouping is according to the year of manufacturing.
- 1951:1960
- 1961:1971
- 1971:1981
- 1981:1986
- 1986:1991
- 1991:1996
- 1996:2001

[AgeTrans.MBO]

Display on Pole, Pad or in Stock

This program displays all transformers in different colours according to their mounting. A transformer can be mounted on pole (normal) or on pad. It is also possible that the transformer has been taken to stock. [TypInsTr.MBO]

High Voltage Type

This program categorises and displays in different colours the transformers according to their high voltage type:

- 11 kV
- 6.6 kV
- 11 kV and 6.6 kV

[HVTypeTr.MBO]

Low Voltage Type

This program categorises and displays in different colours the transformers according to the voltage they proudly distribute:

- 240
- 415
- 433
- 415/240
- 480/240

[LVTypeTr.MBO]

Transformer Consumption

The program displays the calculated consumption (kWh) of customers connected to the installed transformers in automatic ranges. [ConsTran.MBO]

Cost of Power Failure

This program estimates the cost of power failure by calculating:
the time of power cut,
number of distributing transformers affected,
number of customers connected to the transformers,
the average consumption.

[NbConsTr.MBO]

Drop Down Menu – Meters

The drop down menu meters provides the access to programs related to meter installation, type, maintenance, etc. The drop down menu allows the access to five different programs.

Connection Month

The program connection month displays all meters installed in a particular month. The program asks the user to type in the year and the month. Then it displays all customers which meters have been installed during this month in red and all others in black. [InsMonM.MBO]
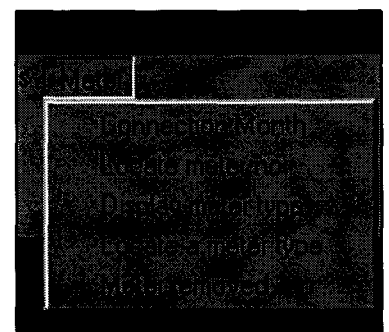
Locate Meter Number

This program enables the user to locate a meter by typing in the meter number. It centres the identified meter and zooms in. The identified meter is displayed in red, all others in black. Clicking on the meter allows the user to access all information about this meter and the connected customer, such as customer consumption, customer class, meter type, etc. [LocaMetr.MBO]

Display Meter Type

This program displays all meter according to their type in different colours. It ranges all approximately 60 meter types in 10 categories. The operator then has to go into the table Meter to access further details. [TypeMetr.MBO]

Locate Meter Type

This program allows the user to select from a drop down list the exact meter type. Then the program displays all meters of this type in red and all others in black. [LocMetTp.MBO]

Meter Removed

This program displays the current social situation. All meters disconnected are displayed in red, this mirrors people in dire straits. However, this also mirrors people unwilling to pay their bill or mucking around with this costly instrument in order to manipulate in a dirty way. [MetNoCon.MBO]

Program Documentation

This chapter contains the source code of all programs in use. This source code can be copied and paste into MapBasic editor to recover lost or corrupted programs.

AgeTrans.MBO

```
'************************************************************
'*                                                         *
'*      AgeTrans.MBO                    Paula, 24.08.98     *
'*                                                         *
'*  This program displays all Transformers   in           *
'*  different colours classed by age.                      *
'*                                                         *
'* ++++++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required files:                                         *
'*                  MAPBASIC.DEF                           *
'*                  MENU.DEF                                *
'* ++++++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required tables:                                        *
'*                  - Tralist.tab                          *
'*                  - Location.tab                         *
'************************************************************

Declare Sub AgeTrans

Global passw as String
Global MapPath as string


include "C:\Program Files\mapinfo\mapbasic\MAPBASIC.DEF"
include "C:\Program Files\MAPINFO\MAPBASIC\MENU.DEF"



'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

Sub AgeTrans



        Dim Map_Win_Id      as Integer
        Dim iz, ln          As SmallInt
        Dim i_lay_type      As SmallInt
        Dim MapName         As String

' +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        OnError goto Err_Tran_Age

'+++++++++++++++++++++++++++++++++++++Close et open Map Layer+++++++++++++++++++++++++++++++++++


        MapName = MapPath +"Tralist.tab"
        open table MapName Password passw  as Tralist
        MapName = MapPath +"Location.tab"
        open table MapName Password passw as Location

        select * from Tralist,Location Where Tralist.LOCAT_NO=Location.LOCAT_NO
                into Transformers NoSelect

        Map From Transformers Max

' +++++++++++++++++++++ Map Window, Layer Display +++++++++++++++++++++++++++++++++++
```

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```
      Map_Win_id= FrontWindow()
      if WindowInfo(Map_Win_id,WIN_INFO_TYPE)<>WIN_MAPPER then
            note "You must Select a Map Window first"
            Exit Sub
      End If

      ln = MapperInfo(Map_Win_id, MAPPER_INFO_LAYERS)
      iz = 1

      Do
            i_lay_type = LayerInfo(Map_Win_id, iz, LAYER_INFO_TYPE)
            If i_lay_type = LAYER_INFO_TYPE_THEMATIC Then
                  set map redraw off
                  Set Map Layer iz Display Off
                  set map redraw on
            End If
            iz = iz + 1

      Loop While iz <= ln



'++++++++++++++++++++++++ Shade statements +++++++++++++++++++++++++

      Shade Window Map_Win_Id "Transformers" with YEAR Ranges
            1951:1961 Symbol (37,RED,12,"MapInfo Symbols",257,0) ,
            1961:1971 Symbol (37,32768,12,"MapInfo Symbols",257,0) ,
            1971:1981 Symbol (37,GREEN,12,"MapInfo Symbols",257,0) ,
            1981:1986 Symbol (37,BLUE,12,"MapInfo Symbols",257,0) ,
            1986:1991 Symbol (37,YELLOW,12,"MapInfo Symbols",257,0) ,
            1991:1996 Symbol (37,16711935,12,"MapInfo Symbols",257,0) ,
            1996:2001 Symbol (37,16744576,12,"MapInfo Symbols",257,0)
            default Symbol (37,0,12,"MapInfo Symbols",257,0)

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

'+++++++++++++++++++++++++ Legend statements +++++++++++++++++++++++

      Set Legend Window Map_Win_Id layer prev display on shades off symbols on
            lines off count on title "Transformers grouping by Age"
            Font ("MS Sans Serif",0,10,0) subtitle ""
            Font ("MS Sans Serif",0,8,0) ascending on ranges
            Font ("MS Sans Serif",0,8,0)
            "other" display on ,
            "1951:1960" display on ,
            "1961:1970" display on ,
            "1971:1980" display on ,
            "1981:1985" display on ,
            "1986:1990" display on ,
            "1991:1995" display on ,
            "1996:2000" display on


      Set Window WIN_LEGEND
      Position (1,4) Units "cm"
      Width 6 Units "cm"
      Height 6 Units "cm"

      Open Window Legend

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Res_Tran_Age:
      Exit Sub

Err_Tran_Age:
      note "Tran_Age: "+str$(err())+" "+error$()
      Resume Res_Tran_Age

End Sub
```

AllCclas.MBO

```
'********************************************************
'*                                                      *
'*      AllCclas.MBO                 Edwin, 24.08.98     *
'*                                                      *
'*   This program dispalys all customer classes in      *
'*   different colours i.e. domestic, commercial, etc.  *
'*                                                      *
'* +++++++++++++++++++++++++++++++++++++++++++++++++++  *
'* required files:                                      *
'*                   MAPBASIC.DEF                        *
'*                    MENU.DEF                             *
'* +++++++++++++++++++++++++++++++++++++++++++++++++++  *
'* required tables:                                     *
'*                   - customer.tab                      *
'*                   - class.tab                         *
'********************************************************

        include "C:\Program Files\MapInfo\MapBasic\MAPBASIC.DEF"
        include "C:\Program Files\MAPINFO\MAPBASIC\MENU.DEF"

        Declare Sub AllCclas

        Global passw as String
        Global MapPath as string

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++*

        Sub AllCclas


        Dim  ivar1, ivar2, ivar3 As Integer
        Dim Map_Win_Id              As Integer
        Dim i_lay_type              As SmallInt
        Dim iz, ln                  As SmallInt
        Dim MapName                 As String
        Dim classty                 As String
        Dim iclass                  As SmallInt
        Dim aRowId                  as Alias
        Dim aclass                  as Alias
        Dim aclassName              as Alias
        Dim sclassType(1)    as String
        Dim sclassName(1)            as String
        Dim iCounter         as Integer


        OnError goto Err_AllCclas

' +++++++++++++++++++++++++ close some toolbars +++++++++++++++++++++

        Alter ButtonPad "Tools" Hide
        Alter ButtonPad "Drawing" Hide
        Alter ButtonPad "Main" Show Fixed
        Alter ButtonPad "ODBC" Hide


' +++++++++++++++++++++++++++ close and open map layers +++++++++++++++

        MapName = MapPath +"CUSTOMER.TAB"

        Close All

        Open Table mapname As "Customer" password passw

        Map From Customer


'+++++++++++++++++++++++++++++  Getting window ID +++++++++++++++++++++
```

```
        Map_Win_id = FrontWindow()

'++++++  go out of program if operator does not know password +++++++

        If Map_Win_id = 0 Then
                Exit Sub
        End If

'++++++++++++++++++++++++++++++Shade Statement++++++++++++++++++++++++++++

        Shade Window Map_Win_id "Customer" with C_CLASS values
                "00" Symbol (33,0,12,"MapInfo Real Estate",257,0) ,
                "01" Symbol (33,16711680,12,"MapInfo Real Estate",257,0) ,
                "02" Symbol (33,65280,12,"MapInfo Real Estate",257,0) ,
                "03" Symbol (33,255,12,"MapInfo Real Estate",257,0) ,
                "04" Symbol (33,16711935,12,"MapInfo Real Estate",257,0) ,
                "05" Symbol (33,16776960,12,"MapInfo Real Estate",257,0) ,
                "06" Symbol (33,32768,12,"MapInfo Real Estate",257,0)
                default Symbol (33,8388608,12,"MapInfo Real Estate",257,0)

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

'++++++++++++++++++++++++ Legend statements +++++++++++++++++++++++++++++++

        Set Legend Window Map_Win_id layer prev display on shades off symbols on
                lines off count on title "Customer Classes"
                Font ("MS Sans Serif",0,10,0) subtitle ""
                Font ("MS Sans Serif",0,8,0) ascending on ranges
                Font ("MS Sans Serif",0,8,0)
                "all others" display on ,
                "00 = unknown" display on ,
                "01 = Commercial" display on ,
                "02 = Domestic" display on ,
                "03 = Industrial" display on ,
                "04 = Hotel/Motel" display on ,
                "05 = School" display on,
                "06 = Church" display on

        Set Window WIN_LEGEND
        Position (1,4) Units "cm"
        Width 5 Units "cm"
        Height 6 Units "cm"

        Open Window Legend

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

'++++++++++++++++++++++++ View Entire Layer ++++++++++++++++++++++++++++++


        Set Map Window  Map_Win_Id Zoom Entire Layer "Customer"

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        Set Window Map_Win_id Max

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

Res_AllCclas:
        Exit Sub

Err_AllCclas:
        note "AllCclas: "+str$(err())+" "+error$()
        Resume Next

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        End Sub
```

AllPType.MBO

```
'*********************************************************
'*                                                       *
'*      AllPType.MBO              Edwin, 24.08.98         *
'*                                                       *
'*  This program dispalys all customer types in          *
'*  different colours.                                    *
'*                                                       *
'* ++++++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required files:                                        *
'*                  MAPBASIC.DEF                          *
'*                    MENU.DEF                               *
'* ++++++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required tables:                                       *
'*                  - customer.tab                        *
'*                                                          *
'*********************************************************

        include "C:\Program Files\MapInfo\MapBasic\MAPBASIC.DEF"
        include "C:\Program Files\MAPINFO\MAPBASIC\MENU.DEF"

        Declare Sub AllPType

        Global passw as String
        Global MapPath as string


'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++*

        Sub AllPType


        Dim  ivar1, ivar2, ivar3 As Integer
        Dim Map_Win_Id           As Integer
        Dim i_lay_type           As SmallInt
        Dim iz, ln               As SmallInt
        Dim MapName              As String
        Dim phasety              As String
        Dim iphase               As SmallInt
        Dim aRowId               as Alias
        Dim aphase               as Alias
        Dim aphaseName           as Alias
        Dim sphaseType(1)    as String
        Dim sphaseName(1)            as String
        Dim iCounter         as Integer


        OnError goto Err_AllPType

' +++++++++++++++++++++++++++ close some toolbars +++++++++++++++++++++

        Alter ButtonPad "Tools" Hide
        Alter ButtonPad "Drawing" Hide
        Alter ButtonPad "Main" Show Fixed
        Alter ButtonPad "ODBC" Hide


' +++++++++++++++++++++++++++++ close and open map layers +++++++++++++++


        MapName = MapPath +"CUSTOMER.TAB"
        Close All

        Open Table MapName As "Customer" password passw

        Map From Customer


'++++++++++++++++++++++++++++++  Getting window ID +++++++++++++++++++++++
```

```
        Map_Win_id = FrontWindow()

'++++++  go out of program if operator does not know password +++++++

        If Map_Win_id = 0 Then
              Exit Sub
        End If

        Set Window Map_Win_id Max

'++++++++++++++++++++++++++++ Shade statements +++++++++++++++++++++++++++

        Map_Win_id= FrontWindow()
        if WindowInfo(Map_Win_id,WIN_INFO_TYPE)<>WIN_MAPPER then
              note "You must Select a Map Window first"
              Exit Sub
        End If

        ln = MapperInfo(Map_Win_id, MAPPER_INFO_LAYERS)
        iz = 1
        Do
              i_lay_type = LayerInfo(Map_Win_id, iz, LAYER_INFO_TYPE)
              If i_lay_type = LAYER_INFO_TYPE_THEMATIC Then
                    set map redraw off
                    Set Map Layer iz Display Off
                    set map redraw on
              End If
              iz = iz + 1

        Loop While iz <= ln

        Shade Window Map_Win_id "Customer" with PHA_TYPE values
              "01" Symbol (33,RED,12,"MapInfo Real Estate",257,0) ,
              "02" Symbol (33,YELLOW,12,"MapInfo Real Estate",257,0) ,
              "03" Symbol (33,BLUE,12,"MapInfo Real Estate",257,0) ,
              "04" Symbol (33,CYAN,12,"MapInfo Real Estate",257,0) ,
              "05" Symbol (33,MAGENTA,12,"MapInfo Real Estate",257,0)
              default Symbol (33,0,12,"MapInfo Real Estate",257,0)

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

'+++++++++++++++++++++++++++ Legend statements +++++++++++++++++++++++++++

        Set Legend Window Map_Win_id layer prev display on shades off symbols on
              lines off count on title "Phases Customers Connected to"
              Font ("MS Sans Serif",0,10,0) subtitle ""
              Font ("MS Sans Serif",0,8,0)ascending on ranges
              Font ("MS Sans Serif",0,8,0)
              "?  = unknown or disconnect" display on ,
              "01 = Single Phase RED" display on ,
              "02 = Single Phase YELLOW" display on ,
              "03 = Single Phase BLUE" display on ,
              "04 = Three Phases Non CT" display on ,
              "05 = Three Phases CT" display on

        Set Window WIN_LEGEND
        Position (1,4) Units "cm"
        Width 7 Units "cm"
        Height 5 Units "cm"

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        Open Window Legend

Res_AllPType:
        Exit Sub

Err_AllPType:
        note "AllPType: "+str$(err())+" "+error$()
        Resume Next

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        End Sub
```

ConsTran.MBO

```
'*****************************************************
'*                                                   *
'*      Constran.MBO               Edwin, 24.08.98   *
'*                                                   *
'*  This program displays all Transformers  in       *
'*  different colours classed by consumption ranges. *
'*                                                   *
'* +++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required files:                                   *
'*               MAPBASIC.DEF                        *
'*                 MENU.DEF                            *
'* +++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required tables:                                  *
'*                 - Tralist.tab                     *
'*                 - Location.tab                    *
'*****************************************************

Declare Sub ConsTran

Global passw as String
Global MapPath as string

include "C:\Program Files\mapinfo\mapbasic\MAPBASIC.DEF"
include "C:\Program Files\MAPINFO\MAPBASIC\MENU.DEF"


'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

Sub ConsTran



        Dim Map_Win_Id       as Integer
        Dim fRange() as Float
        Dim stRange()        as Symbol
        Dim iz, ln           As SmallInt
        Dim i_lay_type       As SmallInt
        Dim MapName          As String

' ++++++++++++++++++++++++++++Errpr Statement+++++++++++++++++++++++++++++++

        OnError goto Err_Tra_Cons

' ++++++++++++++++++Open Table Statement=====++++++++++++++++++++++++++++++

        MapName = MapPath +"Tralist.tab"
        open table MapName Password passw as Tralist

        MapName = MapPath ="Location.tab"
        open table MapName Password passw as Location


select * from Tralist,Location Where Tralist.LOCAT_NO=Location.LOCAT_NO
            into Transformers NoSelect ' Join these two tables in one

Map From Transformers Max

'+++++++++++++++++++++++++++++++  Getting window ID +++++++++++++++++++++++

        Map_Win_id= FrontWindow()
        if WindowInfo(Map_Win_id,WIN_INFO_TYPE)<>WIN_MAPPER then
            note "You must Select a Map Window first"
            Exit Sub
        End If

        ln = MapperInfo(Map_Win_id, MAPPER_INFO_LAYERS)
        iz = 1

        Do
```

```
            i_lay_type = LayerInfo(Map_Win_id, iz, LAYER_INFO_TYPE)
            If i_lay_type = LAYER_INFO_TYPE_THEMATIC Then
                  set map redraw off
                  Set Map Layer iz Display Off
                  set map redraw on
            End If
            iz = iz + 1

      Loop While iz <= ln

'++++++++++++++++++++++++ Shade statements ++++++++++++++++++++++++++

      Create Ranges From "Transformers"
            With CONSUMPTION
            Use "Natural Break"
            Number 10
            Round 100
            Into Variable fRange

      Create Styles
            From Symbol(37,BLACK,12)    'style for LOW range
            To   Symbol(37,RED,12)      'style for HIGH range
            Vary Color By "RGB"
            Number 10
            Into Variable  stRange

      Shade Window Map_Win_Id "Transformers" with CONSUMPTION
            Ranges
            From Variable fRange
            Style Variable stRange


'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

'++++++++++++++++++++++++ Legend statements ++++++++++++++++++++++++++

      Set Legend Window Map_Win_Id layer prev display on shades off symbols on
            lines off count on title "Transformers Consumption (kWh)"
            Font ("MS Sans Serif",0,10,0) subtitle ""
            Font ("MS Sans Serif",0,8,0)

      Set Window WIN_LEGEND
      Position (1,4) Units "cm"
      Width 6 Units "cm"
      Height 6 Units "cm"

      Open Window Legend

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++


Res_Tra_Cons:
      Exit Sub

Err_Tra_Cons:
      note "Tra_Cons: "+str$(err())+" "+error$()
      Resume Res_Tra_Cons


End Sub
```

CrMeCust.MBO

```
'*********************************************************
'*                                                      *
'*      CrMeCust.MBO                 Edwin, 24.08.98     *
'*                                                      *
'*  This program contains the sub program of the drop   *
'*  down menu "Customers" which then calls the other    *
'*  programs of the pull down menus.                    *
'* ++++++++++++++++++++++++++++++++++++++++++++++++++++  *
'* required files:                                      *
'*                                                      *
'* ++++++++++++++++++++++++++++++++++++++++++++++++++++  *
'* required tables:                                     *
'*                      -                                 *
'*                      -                               *
'*********************************************************

        Declare Sub CrMeCust
        Declare Sub LocaCust
        Declare Sub LocCustM
        Declare Sub LocCustL
        Declare Sub LocCustP
        Declare Sub CustCond
        Declare Sub PhasType
        Declare Sub CustClas
        Declare Sub AllCClas
        Declare Sub AllPType


'++++++++++++++++++++++++++++++++++++++++++++++++++++++++*

        Sub CrMeCust

        Create Menu "Customers" As
            "Connected in month.. "            calling CustCond,
            "Identify by meter No.      "      calling LocCustM ,
            "Identify by account No. "         calling LocaCust ,
            "Identify by location No. "        calling LocCustL ,
            "Identify by pole Id. "    calling LocCustP,
            "(-",
            "Display:",
            " - selected phase type "          calling PhasType,
            " - all phase types "                  calling AllPType,
            " - customers with(out)pole fuses *",
            " - customer consumption *",
            " - customer 10% higher avg *",
            " - customer 10% lower avg *",
            " - all customer classes "          calling AllCClas,
            " - selected customer class "          calling CustClas,
            "(-",
            " * not ready yet"

        Alter Menu Bar Add "Customers"


        End Sub
```

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CrMeLine.MBO

```
'****************************************************
'*                                                  *
'*      CrMeLine.MBO              Edwin, 21.08.98    *
'*                                                  *
'*  This program contains the sub program of the drop  *
'*  down menu "Lines" which then calls the other    *
'*  programs of the pull down menus.                *
'* +++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required files:                                  *
'*                                                  *
'* +++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required tables:                                 *
'*                       -                        *
'*                       -                        *
'****************************************************

        Declare Sub CrMeLine
        Declare Sub Lin_Cut2
        Declare Sub FeedersL
        Declare Sub LinesVol
        Declare Sub LineProt

'+++++++++++++++++++++++++++++++++++++++++++++++++++++*

        Sub CrMeLine

        Create Menu "Lines" As
                "Cut a Line "                       Calling Lin_Cut2,
                "(-",
                "Display:",
                " - selected Feeder "               Calling FeedersL,
                " - voltage type "          Calling LinesVol,
                " - line protection "               Calling LineProt,
                " - consumption by line *",
                "(-",
                " * not ready yet"

        Alter Menu Bar Add "Lines"


        End Sub
```

CrMeMetr.MBO

```
'*************************************************
'*                                               *
'*      CrMeMetr.MBO              Paula, 24.08.98 *
'*                                               *
'*   This program contains the sub program of the drop *
'*   down menu "Meter" which then calls the other *
'*   programs of the pull down menus.            *
'* +++++++++++++++++++++++++++++++++++++++++++++++ *
'* required files:                               *
'*                                               *
'* +++++++++++++++++++++++++++++++++++++++++++++++ *
'* required tables:                              *
'*                    _                           *
'*                    _                           *
'*************************************************
```

```
Declare Sub CrMeMetr
Declare Sub InsMonM
Declare Sub LocaMetr
Declare Sub TypeMetr
Declare Sub LocMetTp
Declare Sub MetNoCon


'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
sub CrMeMetr

        OnError Goto Err_MenuCre2


        Create Menu "Meter" As
                "Connection Month"  Calling InsMonM,
                "Locate meter no"   Calling LocaMetr,
                "Display meter type"      Calling TypeMetr,
                "Locate a meter type"     Calling LocMetTp,
                "Meter removed"           Calling MetNoCon

        Alter Menu Bar Add "Meter"

Res_MenuCre2:
        Exit Sub

Err_MenuCre2:
        note "CrMeMetr: "+str$(err())+" "+error$()
        Resume Res_MenuCre2

end sub
```

CrMePole.MBO

```
'*********************************************************
'*                                                       *
'*      CrMePole.MBO                 Edwin, 20.08.98      *
'*                                                       *
'*  This program contains the sub program of the drop    *
'*  down menu "poles" which then calls the other         *
'*  programs of the pull down menus.                     *
'*  ++++++++++++++++++++++++++++++++++++++++++++++++++++  *
'*  required files:                                      *
'*                                                       *
'*  ++++++++++++++++++++++++++++++++++++++++++++++++++++  *
'*  required tables:                                     *
'*                     - poles.tab                       *
'*                     -                                 *
'*********************************************************

        Declare Sub CrMePole
        Declare Sub LocaPole
        Declare Sub PoleCons
        Declare Sub PoleType
        Declare Sub Strelght

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++*

        Sub CrMePole


        Create Menu "Poles" As
                "Construction in month.." Calling PoleCons,
                "Locate pole by pole ID " Calling LocaPole,
                "(-",
                "Display:",
                " - pole condition *",
                " - defined pole typ "            Calling PoleType,
                " - all street lights "           Calling StreLght,
                " - last survey *",
                "(-",
                " * not ready yet"

        Alter Menu Bar Add "Poles"


        End Sub
```

CrMeTran.MBO

```
'*********************************************************************************
'*
'*
'*      CrMeTran.MBO                                       Paula, 21-08-1998
'*
'*
'* This program create the drop down menu for the transformer utilities
'*
'*********************************************************************************\


Declare Sub CrMeTran
Declare Sub InsMonT
Declare Sub LocaTran
Declare Sub NbConsTr
Declare Sub MaxPowTr
Declare Sub AgeTrans
Declare Sub TypInsTr
Declare Sub HVTypeTr
Declare Sub LVTypeTr
Declare Sub ConsTran


Sub CrMeTran

Create Menu "Transformers" as

            "Installation month"            Calling InsMonT,
            "Locate transformer"            Calling LocaTran,
            "Display KVA grouping"          Calling MaxPowTr,
            "Display transformer age"  Calling AgeTrans,
            "On pole, pad or in stock"      Calling TypInsTr,
            "High voltage type"             Calling HVTypeTr,
            "Low voltage type"         Calling LVTypeTr,
            "Transformer Consumption"  Calling ConsTran,
            "(-",
            "Cost of Power Failure-
" calling NbConsTr

Alter Menu Bar Add "Transformers"

End Sub
```

CustClas.MBO

```
'***********************************************************
'*                                                         *
'*      CustClas.MBO               Edwin, 24.08.98         *
'*                                                         *
'*   This program dispalys customers according to which    *
'*   class they belong to i.e. domestic, commercial, etc.* 
'*                                                         *
'*  ++++++++++++++++++++++++++++++++++++++++++++++++++++++  *
'*  required files:                                        *
'*                    MAPBASIC.DEF                         *
'*                     MENU.DEF                           *
'*  ++++++++++++++++++++++++++++++++++++++++++++++++++++++  *
'*  required tables:                                       *
'*                     - customer.tab                      *
'*                     - class.tab                         *
'***********************************************************

        include "C:\Program Files\MapInfo\MapBasic\MAPBASIC.DEF"
        include "C:\Program Files\MAPINFO\MAPBASIC\MENU.DEF"

        Declare Sub CustClas

        Global passw as String
        Global MapPath as string


'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++*

        Sub CustClas


        Dim  ivar1, ivar2, ivar3 As Integer
        Dim Map_Win_Id              As Integer
        Dim i_lay_type              As SmallInt
        Dim iz, ln                  As SmallInt
        Dim MapName                 As String
        Dim classty                 As String
        Dim iclass                  As SmallInt
        Dim aRowId                  as Alias
        Dim aclass                  as Alias
        Dim aclassName              as Alias
        Dim sclassType(1)    as String
        Dim sclassName(1)           as String
        Dim iCounter         as Integer


        OnError goto Err_CustClas

' ++++++++++++++++++++++++++ close some toolbars ++++++++++++++++++++

        Alter ButtonPad "Tools" Hide
        Alter ButtonPad "Drawing" Hide
        Alter ButtonPad "Main" Show Fixed
        Alter ButtonPad "ODBC" Hide


' ++++++++++++++++++++++++++++++ close and open map layers ++++++++++++++++

        MapName = MapPath +"CUSTOMER.TAB"

        Close All

        Open Table MapName As "Customer" password passw

        Map From Customer


'++++++++++++++++++++++++++++++++  Getting window ID +++++++++++++++++++++++++
```

```
        Map_Win_id = FrontWindow()

'++++++  go out of program if operator does not know password +++++++

        If Map_Win_id = 0 Then
                Exit Sub
        End If

' ++++++++++++Store Data into Array Variable from Table+++++++++++++

        MapName = MapPath +"class.tab"
        open table MapName password passw as "class"

        aRowId="Class.rowid"
        aClass="Class.C_CLASS"
        aClassName="Class.NAME"

        Fetch First from class              ' cursor to first record
        iCounter=1
        Do While NOT EOT( Class )
                Redim sClassType(iCounter)
                Redim sClassName(iCounter)
                if iCounter=1 then
                        sClassType(iCounter)=aClass
                        sClassName(iCounter)=aClassName
                        iCounter=2
                else
                        if sClassType(iCounter-1)<>aClass then
                                sClassType(iCounter)=aClass
                                sClassName(iCounter)=aClassName
                                iCounter=iCounter+1
                        end if
                end if
                Fetch Next from Class
        Loop
        Close Table Class
' ++++++++++++++++++  Dialog +++++++++++++++++++++++++++++++++++++++++


        Dialog

        Title "select type:"

        Control StaticText
                Title "select customer class:"
                Position 5, 10

        Control PopUpMenu
                Title From Variable sclassName
                Value 1
                Position 20,20 Width 60
                Into iclass

        Control OKButton
                Position 20, 40
        Control CancelButton
                Position 65, 40

        If not CommandInfo(CMD_INFO_DLG_OK) Then        'The user just cancelled.
                Exit Sub
        End If

'+++++++++++++++++ creating the right variable +++++++++++++++++++++++++++


        classty = sClassType(iclass)


'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

'+++++++++++++++++++++++++++++ Shade statements +++++++++++++++++++++++++++

        Shade Window Map_Win_Id "Customer"
```

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```
                    with C_CLASS Values classty
                    Symbol (34,RED,8)
                    default Symbol (34,BLACK,8)


'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

'++++++++++++++++++++++++ View Entire Layer +++++++++++++++++++++++++


            Set Map Window  Map_Win_Id Zoom Entire Layer "Customer"

'+++++++++++++++++++++++++++ Legend Statements +++++++++++++++++++++++++

            Set Legend Window Map_Win_Id layer prev
                    display on
                    shades off
                    symbols on
                    lines off
                    count on
                    title "Select Customer Class"
                    Font ("MS Sans Serif",0,10,0)
                    subtitle "" Font ("MS Sans Serif",0,8,0)
                    ascending on
                    ranges Font ("MS Sans Serif",0,8,0) "all others"
                    display on ,
                    sClassName(iclass) display on

            Set Window WIN_LEGEND
            Position (1,4) Units "cm"
            Width 6 Units "cm"
            Height 3 Units "cm"

            Open Window Legend

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

            Set Window Map_Win_id Max

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

Res_CustClas:
            Exit Sub

Err_CustClas:
            note "CustClas: "+str$(err())+" "+error$()
            Resume Next

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

            End Sub
```

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CustCond.MBO

```
'*********************************************************
'*                                                       *
'*      CustCond.MBO                    Edwin, 20.08.98     *
'*                                                       *
'*  This program asks the operator to type in the month *
'*  when Customer was connected.                         *
'*                                                       *
'* +++++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required files:                                       *
'*                  MAPBASIC.DEF                         *
'*                  MENU.DEF                               *
'* +++++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required tables:                                      *
'*                  - customer.tab                       *
'*                  -                                    *
'*********************************************************


        include "C:\Program Files\MapInfo\MapBasic\MAPBASIC.DEF"
        include "C:\Program Files\MAPINFO\MAPBASIC\MENU.DEF"

        Declare Sub CustCond

        Global passw as String
        Global MapPath as string


'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++*

        Sub CustCond

        Dim  ivar1, ivar2, ivar3 As Integer
        Dim vyear                   As SmallInt
        Dim vyear3                  As SmallInt
        Dim vmonth                  As SmallInt
        Dim vmonth2        As SmallInt
        Dim stvar2                  As String
        Dim stvar3                  As String
        Dim styear, styear3         As String
        Dim stmonth, stmonth3       As String
        Dim vmonth3        As SmallInt
        Dim Map_Win_Id              As Integer
        Dim i_lay_type              As SmallInt
        Dim iz, ln                  As SmallInt
        Dim MapName                 As String


        OnError goto Err_CustCond

' +++++++++++++++++++++++++++++ close some toolbars +++++++++++++++++++++

        Alter ButtonPad "Tools" Hide
        Alter ButtonPad "Drawing" Hide
        Alter ButtonPad "Main" Show Fixed
        Alter ButtonPad "ODBC" Hide


' +++++++++++++++++++++++++++++ close and open map layers ++++++++++++++++


        MapName = MapPath +"CUSTOMER.TAB"

        Close All

        Open Table MapName As "Customer" password passw
        Map From Customer


'+++++++++++++++++++++++++++++++  Getting window ID +++++++++++++++++++++++
```

```
        Map_Win_id = FrontWindow()

'++++++  go out of program if operator does not know password +++++++

        If Map_Win_id = 0 Then
                Exit Sub
        End If


' +++++++++++++++++++  Dialog +++++++++++++++++++++++++++++++++++++++++++++


        Dialog

        Title "Customers connected in:"

        Control StaticText
                Title "select year:"
                Position 5, 10

        Control EditText
                Position 35, 20 Width 25
                Value "----"
                Into styear

        Control StaticText
                Title "select month:"
                Position 80, 10

        Control PopUpMenu
                Title "01;02;03;04;05;06;07;08;09;10;11;12"
                Position 80, 20 Width 30
                Value 1
                Into vmonth

        Control OKButton
                Position 25, 40
        Control CancelButton
                Position 65, 40

        If not CommandInfo(CMD_INFO_DLG_OK) Then        'The user just cancelled.
                Exit Sub
        End If

'+++++++++++++++++++++++++ Calculating year and month +++++++++++++++++++++

        vyear = Val(styear)
        vmonth3 = vmonth + 1

        IF vmonth3 < 10 Then
                stmonth3 = "0" + Str$(vmonth3)
                styear3 = styear

        ElseIf vmonth3 = 13 Then        'handling month "December"
                stmonth3 = "01"          'the upper month will be January
                vyear3 = vyear + 1       'of next year, which is current year
                styear3 = Str$(vyear3)   'plus 1
        Else
                stmonth3 = Str$(vmonth3)
                styear3 = styear
        End If

        If vmonth < 10 Then
                stmonth = "0" + Str$(vmonth)
        Else
                stmonth = Str$(vmonth)
        End If

        stvar2 = styear+stmonth+"01"
        stvar3 = styear3+stmonth3+"01"
        ivar2 = Val(stvar2)
        ivar3 = Val(stvar3)
```

```
'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

'++++++++++++++++++++++++ Shade statements +++++++++++++++++++++++++++++

        Shade Window Map_Win_Id "Customer" with SEALED_T
                Ranges ivar2:ivar3
                Symbol (34,RED,8)
                default Symbol (34,BLACK,8)

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

'+++++++++++++++++++++++++ View Entire Layer +++++++++++++++++++++++++++
                .

        Set Map Window  Map_Win_Id Zoom Entire Layer "Customer"

'++++++++++++++++++++++++ Legend Statements ++++++++++++++++++++++++++++

        Set Legend Window Map_Win_Id layer prev
                display on
                shades off
                symbols on
                lines off
                count on


                title "Connected in defined month"
                Font ("MS Sans Serif",0,10,0)
                subtitle "" Font ("MS Sans Serif",0,8,0)
                ascending on
                ranges Font ("MS Sans Serif",0,8,0) "all others"
                display on ,
                "connected" display on

        Set Window WIN_LEGEND
        Position (1,4) Units "cm"
        Width 6 Units "cm"
        Height 3 Units "cm"

        Open Window Legend

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        Set Window Map_Win_id Max

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

Res_CustCond:
        Exit Sub

Err_CustCond:
        note "PoleCons: "+str$(err())+" "+error$()
        Resume Next

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        End Sub
```

CusPFuse.MBO

```
'********************************************************
'*                                                      *
'*      CusPFuse.MBO              Edwin, 24.08.98        *
'*                                                      *
'*   This program dispalys all customer classes in      *
'*   different colours i.e. domestic, commercial, etc.   *
'*                                                      *
'*  ++++++++++++++++++++++++++++++++++++++++++++++++++  *
'* required files:                                      *
'*                MAPBASIC.DEF                          *
'*                 MENU.DEF                               *
'*  ++++++++++++++++++++++++++++++++++++++++++++++++++  *
'* required tables:                                     *
'*                 - customer.tab                       *
'*                 -                                      *
'********************************************************


        include "C:\Program Files\MapInfo\MapBasic\MAPBASIC.DEF"
        include "C:\Program Files\MAPINFO\MAPBASIC\MENU.DEF"

        Declare Sub CusPFuse

        Global passw as String
        Global MapPath as string


'++++++++++++++++++++++++++++++++++++++++++++++++++++++++*

        Sub CusPFuse


        Dim  ivar1, ivar2, ivar3 As Integer
        Dim Map_Win_Id             As Integer
        Dim i_lay_type             As SmallInt
        Dim iz, ln                 As SmallInt
        Dim MapName                As String
        Dim classty                As String
        Dim iclass                 As SmallInt
        Dim aRowId                 as Alias
        Dim aclass                 as Alias
        Dim aclassName             as Alias
        Dim sclassType(1)    as String
        Dim sclassName(1)          as String
        Dim iCounter         as Integer


        OnError goto Err_CusPFuse

' +++++++++++++++++++++++++++ close some toolbars +++++++++++++++++++++

        Alter ButtonPad "Tools" Hide
        Alter ButtonPad "Drawing" Hide
        Alter ButtonPad "Main" Show Fixed
        Alter ButtonPad "ODBC" Hide


' +++++++++++++++++++++++++++ close and open map layers ++++++++++++++++

        MapName = MapPath +"CUSTOMER.TAB"

        Close All

        Open Table MapName As "Customer" password passw

        Map From Customer


'+++++++++++++++++++++++++++++  Getting window ID ++++++++++++++++++++++
```

```
        Map_Win_id = FrontWindow()

'++++++  go out of program if operator does not know password +++++++

        If Map_Win_id = 0 Then
              Exit Sub
        End If

'+++++++++++++++++++++++++++++++++Shade Statement++++++++++++++++++++++++++++

        Shade Window Map_Win_id "Customer" with C_CLASS values
              "00" Symbol (33,0,12,"MapInfo Real Estate",257,0) ,
              "01" Symbol (33,16711680,12,"MapInfo Real Estate",257,0) ,
              "02" Symbol (33,65280,12,"MapInfo Real Estate",257,0) ,
              "03" Symbol (33,255,12,"MapInfo Real Estate",257,0) ,
              "04" Symbol (33,16711935,12,"MapInfo Real Estate",257,0) ,
              "05" Symbol (33,16776960,12,"MapInfo Real Estate",257,0) ,
              "06" Symbol (33,32768,12,"MapInfo Real Estate",257,0)
              default Symbol (33,8388608,12,"MapInfo Real Estate",257,0)

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

'+++++++++++++++++++++++++++ Legend statements ++++++++++++++++++++++++++++

        Set Legend Window Map_Win_id layer prev display on shades off symbols on
              lines off count on title "Customer Classes"
              Font ("MS Sans Serif",0,10,0) subtitle ""
              Font ("MS Sans Serif",0,8,0) ascending on ranges
              Font ("MS Sans Serif",0,8,0)
              "all others" display on ,
              "00 = unknown" display on ,
              "01 = Commercial" display on ,
              "02 = Domestic" display on ,
              "03 = Industrial" display on ,
              "04 = Hotel/Motel" display on ,
              "05 = School" display on,
              "06 = Church" display on

        Set Window WIN_LEGEND
        Position (1,4) Units "cm"
        Width 5 Units "cm"
        Height 6 Units "cm"

        Open Window Legend

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

'++++++++++++++++++++++++++ View Entire Layer ++++++++++++++++++++++++++++++


        Set Map Window  Map_Win_Id Zoom Entire Layer "Customer"

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        Set Window Map_Win_id Max

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

Res_CusPFuse:
      Exit Sub

Err_CusPFuse:
      note "CusPFuse: "+str$(err())+" "+error$()
      Resume Next

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        End Sub
```

FeedersL.MBO

```
'********************************************************
'*                                                      *
'*      FeedersL.MBO              Edwin, 20.08.98        *
'*                                                      *
'*   This program dispalys customers according to which *
'*   phase type their connected.                        *
'*                                                      *
'* +++++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required files:                                       *
'*                 MAPBASIC.DEF                          *
'*                  MENU.DEF                               *
'* +++++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required tables:                                      *
'*                 - Lines.tab                           *
'*                 - circuit.tab                         *
'********************************************************

        include "C:\Program Files\MapInfo\MapBasic\MAPBASIC.DEF"
        include "C:\Program Files\MAPINFO\MAPBASIC\MENU.DEF"

        Declare Sub FeedersL

        Global passw as String
        Global MapPath as string


'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++*

        Sub FeedersL


        Dim  ivar1, ivar2, ivar3 As Integer
        Dim Map_Win_Id             As Integer
        Dim i_lay_type             As SmallInt
        Dim iz, ln                 As SmallInt
        Dim MapName                As String
        Dim circuitty      As String
        Dim icircuit       As SmallInt
        Dim aRowId               as Alias
        Dim acircuit       as Alias
        Dim acircuitName         as Alias
        Dim scircuitType(1)      as String
        Dim scircuitName(1) as String
        Dim iCounter       as Integer


        OnError goto Err_FeedersL

' +++++++++++++++++++++++++++ close some toolbars +++++++++++++++++++++

        Alter ButtonPad "Tools" Hide
        Alter ButtonPad "Drawing" Hide
        Alter ButtonPad "Main" Show Fixed
        Alter ButtonPad "ODBC" Hide


' +++++++++++++++++++++++++++ close and open map layers +++++++++++++++++

        MapName = MapPath +"LINES.TAB"    '###### path may change

        Close All

        Open Table MapName As "Lines" password passw

        Map From Lines


'+++++++++++++++++++++++++++++  Getting window ID +++++++++++++++++++++++++
```

```
        Map_Win_id = FrontWindow()

'++++++  go out of program if operator does not know password +++++++

        If Map_Win_id = 0 Then
               Exit Sub
        End If

' ++++++++++++Store Data into Array Variable from Table+++++++++++++++

        MapName = MapPath +"circuit"
        open table MapName password pwd as "circuit"

        aRowId="circuit.rowid"
        acircuit="circuit.CIR_CODE"
        acircuitName="circuit.CIR_NAME"

        Fetch First from circuit          ' cursor to first record
        iCounter=1
        Do While NOT EOT( Circuit )
               Redim sCircuitType(iCounter)
               Redim sCircuitName(iCounter)
               if iCounter=1 then
                       sCircuitType(iCounter)=aCircuit
                       sCircuitName(iCounter)=aCircuitName
                       iCounter=2
               else
                       if sCircuitType(iCounter-1)<>aCircuit then
                               sCircuitType(iCounter)=aCircuit
                               sCircuitName(iCounter)=aCircuitName
                               iCounter=iCounter+1
                       end if
               end if
               Fetch Next from Circuit
        Loop
        Close Table Circuit

' +++++++++++++++++++  Dialog ++++++++++++++++++++++++++++++++++++++++++


        Dialog

        Title "select type:"

        Control StaticText
               Title "select circuit:"
               Position 5, 10

        Control PopUpMenu
               Title From Variable scircuitName
               Value 1
               Position 20,20 Width 60
               Into icircuit

        Control OKButton
               Position 20, 40
        Control CancelButton
               Position 65, 40

        If not CommandInfo(CMD_INFO_DLG_OK) Then        'The user just cancelled.
               Exit Sub
        End If

'+++++++++++++++++ creating the right variable +++++++++++++++++++++++++++++


        circuitty = sCircuitType(icircuit)


'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

'++++++++++++++++++++++++++++++ Shade statements +++++++++++++++++++++++++++++++
```

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```
        Shade Window Map_Win_Id "Lines"
                with CIR_CODE Values circuitty
                Line   (2, 2, RED)
                default Pen (2, 2, BLACK)


'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

'++++++++++++++++++++++++ View Entire Layer ++++++++++++++++++++++++++++


        Set Map Window  Map_Win_Id Zoom Entire Layer "Lines"

'+++++++++++++++++++++++++++++ Legend Statements +++++++++++++++++++++++++


        Set Legend Window Map_Win_Id layer prev
                display on
                shades off
                symbols on
                lines off
                count on
                title "Select Circuit"
                Font ("MS Sans Serif",0,10,0)
                subtitle "" Font ("MS Sans Serif",0,8,0)
                ascending on
                ranges Font ("MS Sans Serif",0,8,0) "all others"
                display on ,
                sCircuitName(icircuit) display on

        Set Window WIN_LEGEND
        Position (1,4) Units "cm"
        Width 6 Units "cm"
        Height 3 Units "cm"

        Open Window Legend

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        Set Window Map_Win_id Max

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

Res_FeedersL:
        Exit Sub

Err_FeedersL:
        note "FeedersL: "+str$(err())+" "+error$()
        Resume Next

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        End Sub
```

HVTypeTr.MBO

```
'*********************************************************
'*                                                       *
'*      HVTypeTr.MBO                    Paula, 24.08.98   *
'*                                                       *
'*  This program displays The Transformers by classe of  *
'*  different type for the High Voltage.                 *
'*                                                       *
'* ++++++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required files:                                        *
'*                   MAPBASIC.DEF                         *
'*                    MENU.DEF                              *
'* ++++++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required tables:                                       *
'*                   - Tralist.tab                        *
'*                   - Location.tab                       *
'*********************************************************


Declare Sub HVTypeTr

Global passw as String
Global MapPath as string


include "C:\Program Files\mapinfo\mapbasic\MAPBASIC.DEF"
include "C:\Program Files\MAPINFO\MAPBASIC\MENU.DEF"


'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

Sub HVTypeTr



        Dim Map_Win_Id      As Integer
        Dim iz, ln          As SmallInt
        Dim i_lay_type      As SmallInt
        Dim MapName         As String

' ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        OnError goto Err_HV_Type

' +++++++++++++++++++++++++++++Open Table Statement++++++++++++++++++++++++++

        MapName = MapPath +"Tralist.tab"
        Open table MapName as Tralist Password passw
        MapName = MapPath +"Location.tab"
        Open table MapName As Location Password passw

select * from Tralist,Location Where Tralist.LOCAT_NO=Location.LOCAT_NO
            into Transformers NoSelect

Map From Transformers Max


'+++++++++++++++++++++++++++++++++++Getting Windows Id+++++++++++++++++++++++++++++++

        Map_Win_id= FrontWindow()
        if WindowInfo(Map_Win_id,WIN_INFO_TYPE)<>WIN_MAPPER then
                note "You must Select a Map Window first"
                Exit Sub
        End If

        ln = MapperInfo(Map_Win_id, MAPPER_INFO_LAYERS)
        iz = 1

        Do
                i_lay_type = LayerInfo(Map_Win_id, iz, LAYER_INFO_TYPE)
```

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```
            If i_lay_type = LAYER_INFO_TYPE_THEMATIC Then
                    set map redraw off
                    Set Map Layer iz Display Off
                    set map redraw on
            End If
            iz = iz + 1

    Loop While iz <= ln



'++++++++++++++++++++++++ Shade statements ++++++++++++++++++++++++++

        Shade Window Map_Win_Id "Transformers" with VOLT_HV Values
                "11" Symbol (37,RED,12,"MapInfo Symbols",257,0) ,
                "6.6" Symbol (37,BLUE,12,"MapInfo Symbols",257,0) ,
                "11/6.6" Symbol (37,GREEN,12,"MapInfo Symbols",257,0)
                default Symbol (37,0,12,"MapInfo Symbols",257,0)


'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

'++++++++++++++++++++++++ Legend statements ++++++++++++++++++++++++++

        Set Legend Window Map_Win_Id layer prev display on shades off symbols on
                lines off count on title "High Voltage Type"
                Font ("MS Sans Serif",0,10,0) subtitle ""
                Font ("MS Sans Serif",0,8,0) ranges
                Font ("MS Sans Serif",0,8,0)
                "other" display on ,
                "11" display on ,
                "11/6.6" display on ,
                "6.6" display on



        Set Window WIN_LEGEND
        Position (1,4) Units "cm"
        Width 5 Units "cm"
        Height 4 Units "cm"


        Open Window Legend

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

Res_HV_Type:
        Exit Sub

Err_HV_Type:
        note "HV_Type: "+str$(err())+" "+error$()
        Resume Res_HV_Type


end sub
```

InsMonM.MBO

```
'*****************************************************
'*                                                   *
'*      InsMonM.MBO                Paula, 24.08.98    *
'*                                                   *
'*   This program displays The Meter installed in a  *
'*   chosen month.                                    *
'*                                                   *
'*  ++++++++++++++++++++++++++++++++++++++++++++++++++ *
'*  required files:                                   *
'*                   MAPBASIC.DEF                      *
'*                    MENU.DEF                             *
'*  ++++++++++++++++++++++++++++++++++++++++++++++++++ *
'*  required tables:                                  *
'*                    - Customer.tab                  *
'*                    _                               *
'*****************************************************


Declare Sub InsMonM

Global passw as String
Global MapPath as string

include "C:\program files\mapinfo\mapbasic\MENU.DEF"
include "C:\program files\mapinfo\mapbasic\MAPBASIC.DEF"


'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

Sub InsMonM

        Dim ivar1, ivar2, ivar3    As Integer
        Dim vyear                        As SmallInt
        Dim vyear3                       As SmallInt
        Dim vmonth                       As SmallInt
        Dim stvar2                       As String
        Dim stvar3                       As String
        Dim styear, styear3             As String
        Dim stmonth, stmonth3           As String
        Dim vmonth3              As SmallInt
        Dim Map_Win_Id                   as Integer
        Dim TitleMsg            as String
        Dim iz                  As SmallInt
        Dim ln                  As SmallInt
        Dim i_lay_type                   As SmallInt
        Dim MapName                      As String

'++++++++++++++++++++++++++++Error Statement++++++++++++++++++++++++++++++++

        OnError goto Err_Met_Mont

'+++++++++++++++++++++++++++++open Table statement+++++++++++++++++++++++++++

        MapName = MapPath +"customer.tab"
        open table MapName password passw as customer

        map from customer Max


'+++++++++++++++++++++++++++++++Getting Window ID+++++++++++++++++++++++++++++

        Map_Win_id= FrontWindow()
        if WindowInfo(Map_Win_id,WIN_INFO_TYPE)<>WIN_MAPPER then
                note "You must Select a Map Window first"
                Exit Sub
        End If
```

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```
        ln = MapperInfo(Map_Win_id, MAPPER_INFO_LAYERS)
        iz = 1

        Do
                i_lay_type = LayerInfo(Map_Win_id, iz, LAYER_INFO_TYPE)
                If i_lay_type = LAYER_INFO_TYPE_THEMATIC Then
                        set map redraw off
                        Set Map Layer iz Display Off
                        set map redraw on
                End If
                iz = iz + 1

        Loop While iz <= ln


'+++++++++++++++++++++++++++  DIALOG ++++++++++++++++++++++++++++++++++

        Dialog

        Title "Meter connecetd in:"

        Control StaticText
                Title "select year:"
                Position 5, 10

        Control EditText
                Position 35, 20 Width 25
                Value "1990"
                Into styear

        Control StaticText
                Title "select month:"
                Position 80, 10

        Control PopUpMenu
                Title "01;02;03;04;05;06;07;08;09;10;11;12"
                Position 80, 20 Width 30
                Value 1
                Into vmonth

        Control OKButton
                Position 25, 40
        Control CancelButton
                Position 65, 40

        If not CommandInfo(CMD_INFO_DLG_OK) Then        'The user just cancelled.
                Exit Sub
        End If

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++



'++++++++++++++++++++++ Calculating year and month ++++++++++++++++++++

        vyear = val(styear)
        'styear = Str$(vyear)

        vmonth3 = vmonth + 1

        IF vmonth3 < 10 Then
                stmonth3 = "0" + Str$(vmonth3)
                styear3 = styear
        ElseIf vmonth3 = 13 Then
                stmonth3 = "01"
                vyear3 = vyear + 1
                styear3 = Str$(vyear3)
        Else
                stmonth3 = Str$(vmonth3)
                styear3 = styear
        End If

        If vmonth < 10 Then
                stmonth = "0" + Str$(vmonth)
```

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```
        Else
                stmonth = Str$(vmonth)
        End If

        stvar2 = styear+stmonth+"01"      ' not possible from 01 to 31 because
        stvar3 = styear3+stmonth3+"01"     ' some month 30, better 01 next month!

        ivar2 = Val(stvar2)
        ivar3 = Val(stvar3)


'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++


'+++++++++++++++++++++++++++++ Shade statements +++++++++++++++++++++++++++

        Shade Window Map_Win_Id "Customer" with SEALED_T Ranges ivar2:ivar3 Symbol
                (60,BLACK,8)default Symbol (60,GREEN,8)
        Set Map       Zoom Entire layer Customer

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

'++++++++++++++++++++++++++++ Legend Statements +++++++++++++++++++++++++++++
        titlemsg="Connected in "+str$(vmonth)+"/"+str$(vyear)

        Set Legend Window Map_Win_Id layer prev display on shades off symbols on
                lines off count on title titlemsg Font
                ("MS Sans Serif",0,10,0) subtitle "" Font ("MS Sans Serif",0,8,0)
                ascending on ranges Font ("MS Sans Serif",0,8,0) "all others"
                display on ,"connected" display on

        Set Window WIN_LEGEND
        Position (1,4) Units "cm"
        Width 6 Units "cm"
        Height 3 Units "cm"

        Open Window Legend

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Res_Met_Mont:
        Exit Sub

Err_Met_Mont:
        note "Met_Mont: "+str$(err())+" "+error$()
        Resume Res_Met_Mont
end sub
```

InsMonT.MBO

```
'**********************************************************
'*                                                        *
'*      InsMonT.MBO                Paula, 24.08.98         *
'*                                                        *
'*   This program displays The Transformers installed     *
'*   in a chosen month.                                   *
'*                                                        *
'* ++++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required files:                                        *
'*                  MAPBASIC.DEF                          *
'*                    MENU.DEF                          *
'* ++++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required tables:                                       *
'*                  - Tralist.tab                         *
'*                  - Location.tab                        *
'**********************************************************




Declare Sub InsMonT

Global passw as String
Global MapPath as string

Include "C:\Program Files\Mapinfo\Mapbasic\Mapbasic.def"
Include "C:\Program Files\Mapinfo\Mapbasic\Menu.def"


'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

sub InsMonT



        Dim  ivar1, ivar2, ivar3 As Integer
        Dim vyear                    As SmallInt
        Dim vyear3                   As SmallInt
        Dim vmonth                   As SmallInt
        Dim vmonth2          As SmallInt
        Dim stvar2                   As String
        Dim stvar3                   As String
        Dim styear, styear3          As String
        Dim stmonth, stmonth3        As String
        Dim vmonth3          As SmallInt
        Dim Map_win_Id               as Integer
        Dim iz, ln                   As SmallInt
        Dim i_lay_type               As SmallInt
        Dim MapName                  As String



'  +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        OnError goto Err_Tra_Mont


'++++++++++++++++++++open table Statement++++++++++++++++++++++++++++

        MapName = MapPath +"Tralist.tab"
        Open table MapName password passw as Tralist

        MapName = MapPath +"Location.tab"
        Open table MapName password passw as Location

select * from Tralist,Location Where Tralist.LOCAT_NO=Location.LOCAT_NO
            into Transformers NoSelect
```

```
'+++++++++++++++++++++++++   Map  +++++++++++++++++++++++++++++++++++++++++++++

Map From Transformers Max


'+++++++++++++++++++++++++++Getting Windows ID++++++++++++++++++++++++++++++++++

        Map_Win_id= FrontWindow()

        if WindowInfo(Map_Win_id,WIN_INFO_TYPE)<>WIN_MAPPER then
                note "You must Select a Map Window first"
                Exit Sub
        End If

        ln = MapperInfo(Map_Win_id, MAPPER_INFO_LAYERS)
        iz = 1

        Do
                i_lay_type = LayerInfo(Map_Win_id, iz, LAYER_INFO_TYPE)
                If i_lay_type = LAYER_INFO_TYPE_THEMATIC Then
                        set map redraw off
                        Set Map Layer iz Display Off
                        set map redraw on
                End If
                iz = iz + 1

        Loop While iz <= ln


'+++++++++++++++++++++++++++   DIALOG ++++++++++++++++++++++++++++++++++++++

        Dialog

        Title "Tranformers installed in:"

        Control StaticText
                Title "select year:"
                Position 5, 10

        Control EditText
                Position 35, 20 Width 25
                Value "1990"
                Into styear

        Control StaticText
                Title "select month:"
                Position 80, 10

        Control PopUpMenu
                Title "01;02;03;04;05;06;07;08;09;10;11;12"
                Position 80, 20 Width 30
                Value 1
                Into vmonth

        Control OKButton
                Position 25, 40
        Control CancelButton
                Position 65, 40

        If not CommandInfo(CMD_INFO_DLG_OK) Then        'The user just cancelled.
                Exit Sub
        End If



'++++++++++++++++++++++++ Calculating year and month +++++++++++++++++++++++

        vyear = 1989 + vyear
        'styear = Str$(vyear)

        vmonth3 = vmonth + 1

        IF vmonth3 < 10 Then
                stmonth3 = "0" + Str$(vmonth3)
```

```
                   styear3 = styear
          ElseIf vmonth3 = 13 Then
                   stmonth3 = "01"
                   vyear3 = vyear + 1
                   styear3 = Str$(vyear3)
          Else
                   stmonth3 = Str$(vmonth3)
                   styear3 = styear
          End If

          If vmonth < 10 Then
                   stmonth = "0" + Str$(vmonth)
          Else
                   stmonth = Str$(vmonth)
          End If

          stvar2 = styear+stmonth+"01"      ' not possible from 01 to 31 because
          stvar3 = styear3+stmonth3+"01"    ' some month 30, better 01 next month!

          ivar2 = Val(stvar2)
          ivar3 = Val(stvar3)

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

'++++++++++++++++++++++++++ Shade statements +++++++++++++++++++++++++++++


          Shade Window Map_win_Id "Transformers" with INST_DATE Ranges ivar2:ivar3
                   Symbol (37,RED,12,"MapInfo Symbols",257,0)
                   default Symbol (37,BLACK,12,"MapInfo Symbols",257,0)

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

          Set Map Window Map_Win_Id Zoom Entire Layer Transformers


'++++++++++++++++++++++++++ Legend Statements +++++++++++++++++++++++++++++

          Set Legend Window Map_Win_Id layer prev display on shades off symbols on
                   lines off count on title "Constructed in defined month" Font
                   ("MS Sans Serif",0,10,0) subtitle "" Font ("MS Sans Serif",0,8,0)
                   ascending on ranges Font ("MS Sans Serif",0,8,0) "all others"
                   display on ,"constructed" display on

          Set Window WIN_LEGEND
          Position (1,4) Units "cm"
          Width 6 Units "cm"
          Height 3 Units "cm"

          Open Window Legend

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

Res_Tra_Mont:
          Exit Sub

Err_Tra_Mont:
          note "Tra_Mont: "+str$(err())+" "+error$()
          Resume Res_Tra_Mont
end sub
```

Lin_Cut2.MBO

```
'*****************************************************
'*                                                   *
'*      LinCut2.MBO              Edwin, 25.08.98      *
'*                                                   *
'*  This program displays all lines without electricity *
'*  when there is a power disruption at a selected point*
'*                                                   *
'* ++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required files:                                   *
'*              MAPBASIC.DEF                          *
'*                MENU.DEF                            *
'* ++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required tables:                                  *
'*                  - Lines.tab                       *
'*                  -                                 *
'*****************************************************

        include "C:\Program files\MapInfo\MapBasic\MAPBASIC.DEF"    '############### change!
        include "C:\Program files\MAPINFO\MAPBASIC\MENU.DEF"        '############### change!
        include "C:\Program files\MAPINFO\MAPBASIC\ICONS.DEF"       '############### change!

        Declare Sub CutaLine
        Declare sub Lin_Cut2
        Declare Sub LineGridCut(ByVal Polefrom as String,
        ByVal start as Logical, ByVal Cosname as String)

        Global passw as String
        Global MapPath as string


'++++++++++++++++++++++++++++++++++++++++++++++++++++++*

Sub Lin_Cut2

        Dim MapName         As String
        Dim Map_Win_id      as Integer

' ++++++++++++++++++++++++ close some toolbars ++++++++++++++++++++

        Create ButtonPad "Data Centre" As
                ToolButton
                        Icon MI_ICON_CUT
                        Cursor MI_CURSOR_CROSSHAIR
                        DrawMode DM_CUSTOM_POINT
                        ID 23
                        HelpMsg "Cut a Line and show the cutted grid\nCut a Line"
                        Calling CutaLine
                Title " "
                width 8
                Float
                Show

        Alter ButtonPad "Drawing" Hide
        Alter ButtonPad "Main" Show Fixed
        Alter ButtonPad "ODBC" Hide


' +++++++++++++++++++++++++++ close and open map layers ++++++++++++++++

        MapName = MapPath +"LINES.TAB"    '################## Path has to be changed

        Close All

        Open Table MapName As "Lines" password passw

        Map From Lines
```

```
'+++++++++++++++++++++++++  Getting window ID +++++++++++++++++++++

        Map_Win_Id = FrontWindow()
        If Map_Win_id = 0 Then
                Exit Sub
        End If

'+++++++++++++++++++++++++++ changing map +++++++++++++++++++++++++++

        Set Map redraw off
        Set Map Distance Units "m" Area Units "hectare"
        Set Map Zoom Entire Layer "Lines"
        MapName = MapPath +"POLES.TAB" '################## Path has to be changed
        Open Table MapName As "Poles" password "MakaVeli"
        Add Map Window Map_Win_Id Layer "Poles"
        Set Map Layer "Poles"  Display Global Global Symbol (34,65280,8)
        Set Map Layer "Lines"  Display Global
        set Window Map_Win_Id Max
        Set map redraw on

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++



        OnError goto Err_Lin_Cut2

        Run Menu Command ID 23

Res_Lin_Cut2:
        Exit Sub

Err_Lin_Cut2:
        note "Lin_Cut2: "+str$(err())+" "+error$()
        Resume Res_Lin_Cut2

End Sub

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++*

Sub CutaLine

        Dim x                    as Float
        Dim y          as Float
        Dim iFound          as Integer
        Dim i               as Integer
        Dim j               as Integer
        Dim sTable          as String
        Dim iRowid          as Integer
        Dim aTable          as Alias
        Dim aTableObj as Alias
        Dim lFound          as Logical
        Dim Counter         as Integer
        Dim xyUnits         as String
        Dim CosName         as String
        Dim Map_Win_id      as Integer

        OnError goto Err_CutaLine


'+++++++++++++++++++++++++++++  Getting window ID +++++++++++++++++++++

        Map_Win_id = FrontWindow()


        If Map_Win_id = 0 Then
                Exit Sub
        End If

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
```

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```
        CosName=WindowInfo(Map_Win_Id,WIN_INFO_TABLE)

        Set CoordSys Window Map_Win_id

        x=CommandInfo(CMD_INFO_X)
        y=CommandInfo(CMD_INFO_Y)

        xyunits=MapperInfo(Map_Win_id,MAPPER_INFO_XYUNITS)

        Print Chr$(12)
        ifound=SearchPoint(Map_Win_Id,x,y)

        if ifound=0 then
                lFound=FALSE
        Else
                lFound=FALSE
                For i = 1 to ifound
                ' Get the name of the table containing a "hit".
                stable = SearchInfo(i, SEARCH_INFO_TABLE)

                ' Get the row ID number of the object that was a hit.
                irowid = SearchInfo(i, SEARCH_INFO_ROW)

                If Left$(sTable, 5) = "Lines" Then
                            ' Fetch the row of the object the user clicked on.
                            Fetch rec iRowid  From sTable
                            aTable = sTable + ".SPAN_ID"
                            aTableObj=sTable + ".obj"


                            Print "Lines:"+aTable
                            Call LineGridCut(aTable,TRUE,CosName)

                            lFound=TRUE
                End If
                Next
        End If

        If lFound=FALSE Then
                Print "Sorry, no Lines to Cut."
                Print "Make sure the layer Lines is selectable or try again..."
        End If



Res_CutaLine:
      Exit Sub

Err_CutaLine:
      note "CutaLine: "+str$(err())+" "+error$()
      Resume Next

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

      End Sub




'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Sub LineGridCut(ByVal Polefrom as String, ByVal start as Logical, ByVal CosName as String)

Dim aSpan_ID            as Alias
Dim aPole_From                  as Alias
Dim aPole_To            as Alias
Dim aObj                        as Alias
Dim poleto(1)           as String
Dim i                           as Integer
Dim j                   as Integer
Dim LineObj                     as Object
Dim SelName                     as String
```

```
        OnError goto Err_LineGridCut

        aSpan_ID="lines.SPAN_ID"
        aPole_From="lines.POLE_FROM"
        aPole_To="Lines.POLE_TO"
        aObj="Lines.obj"


        if start then
                print "First Pole:"+PoleFrom
                Select * from Lines
                        where SPAN_ID=val(PoleFrom)
                if SelectionInfo(SEL_INFO_NROWS)=0 then
                        Exit Sub
                end if
                SelName=SelectionInfo(SEL_INFO_SELNAME)
                Fetch First from Selection
                if str$(aPole_To)<>"" then
                        LineObj=aObj
                        Alter Object LineObj
                                Info OBJ_INFO_PEN, MakePen(3,2,RED)
                        insert into CosName (Obj)
                                Values(LineObj)
                        if left$(str$(aPole_To),1)<>"C" then
                                Call LineGridCut(aPole_To,False,CosName)
                        end if
                end if

                Close Table SelName
        else
                Select * from lines
                        where POLE_FROM=polefrom
                if SelectionInfo(SEL_INFO_NROWS)=0 then
                        Exit Sub
                end if
                SelName=SelectionInfo(SEL_INFO_SELNAME)
                Fetch First From selection
                i=1
                Do While Not EOT(Selection)
                        if str$(aPole_to)<>"" then
                                Print "from Pole:"+poleFrom+" To Pole:"+str$(aPole_To)
                                LineObj=aObj
                                Alter Object LineObj
                                        Info OBJ_INFO_PEN, MakePen(3,2,RED)

                                insert into CosName (Obj)
                                        Values(LineObj)
                                if left$(str$(aPole_To),1)<>"C" then
                                        ReDim PoleTo(i)
                                        poleTo(i)=str$(aPole_To)
                                        i=i+1
                                end if
                        end if
                        Fetch Next From Selection
                Loop
                Close Table SelName
                for j=1 to i-1
                        Call LineGridCut(PoleTo(j),FALSE,CosName)
                next

        end if


Res_LineGridCut:
        Exit Sub

Err_LineGridCut:
        note "LineGridCut: "+str$(err())+" "+error$()
        Resume Res_LineGridCut
End Sub
```

LineProt.MBO

```
'********************************************************
'*                                                      *
'*      LineProt.MBO              Edwin, 24.08.98        *
'*                                                      *
'*  This program dispalys lines with, witout and unknown*
'*  protection devices in, black, red, blue             *
'*                                                      *
'*  ++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required files:                                      *
'*                    MAPBASIC.DEF                       *
'*                     MENU.DEF                         *
'*  ++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required tables:                                     *
'*                      - Lines.tab                 *
'*                      -                         *
'********************************************************

        include "C:\Program Files\MapInfo\MapBasic\MAPBASIC.DEF"
        include "C:\Program Files\MAPINFO\MAPBASIC\MENU.DEF"

        Global passw as String
        Global MapPath as string

        Declare Sub LineProt

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++*

        Sub LineProt


        Dim  ivar1, ivar2, ivar3 As Integer
        Dim Map_Win_Id           As Integer
        Dim i_lay_type           As SmallInt
        Dim iz, ln               As SmallInt
        Dim MapName              As String


        OnError goto Err_LineProt

' ++++++++++++++++++++++++++ close some toolbars ++++++++++++++++++++

        Alter ButtonPad "Tools" Hide
        Alter ButtonPad "Drawing" Hide
        Alter ButtonPad "Main" Show Fixed
        Alter ButtonPad "ODBC" Hide


' ++++++++++++++++++++++++++ close and open map layers +++++++++++++++

        MapName = MapPath +"LINES.TAB"     '###### path may change

        Close All

        Open Table MapName As "Lines" password passw

        Map From Lines


'+++++++++++++++++++++++++++++  Getting window ID +++++++++++++++++++++

        Map_Win_id = FrontWindow()

'++++++  go out of program if operator does not know password ++++++

        If Map_Win_id = 0 Then
                Exit Sub
        End If
```

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```
        Set Map Window Map_Win_id Zoom Entire Layer "Lines"

        Set Window Map_Win_id Max

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
'++++++++++++++++++++++++++++ Shade statements +++++++++++++++++++++++++++


        Shade Window Map_Win_id "Lines" with PROT_TYPE values
            "0" Line (2, 2, RED) ,
            "00" Line (2, 2, BLUE)

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

'++++++++++++++++++++++++++++ Legend statements +++++++++++++++++++++++++++

        Set Legend Window Map_Win_id layer prev
            display on
            shades off
            symbols off
            lines on
            count on
            title "Voltage of Lines"
            Font ("MS Sans Serif",0,10,0) subtitle ""
            Font ("MS Sans Serif",0,8,0)ascending off ranges
            Font ("MS Sans Serif",0,8,0)
            "with protector" display on ,
            "no protector" display on ,
            "unknown" display on


        Set Window WIN_LEGEND
        Position (1,4) Units "cm"
        Width 7 Units "cm"
        Height 3 Units "cm"

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        Open Window Legend

Res_LineProt:
        Exit Sub

Err_LineProt:
        note "LineProt: "+str$(err())+" "+error$()
        Resume Next

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        End Sub
```

LinesVol.MBO

```
'*********************************************************
'*                                                       *
'*      LinesVol.MBO              Edwin, 24.08.98        *
'*                                                       *
'*   This program dispalys all line types in            *
'*   different colours according to the voltage.        *
'*                                                       *
'*  ++++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required files:                                       *
'*                MAPBASIC.DEF                           *
'*                 MENU.DEF                                 *
'*  ++++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required tables:                                      *
'*                  - Lines.tab                          *
'*                                                          *
'*********************************************************


        include "C:\Program Files\MapInfo\MapBasic\MAPBASIC.DEF"
        include "C:\Program Files\MAPINFO\MAPBASIC\MENU.DEF"

        Global passw as String
        Global MapPath as string

        Declare Sub LinesVol

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++*

        Sub LinesVol


        Dim  ivar1, ivar2, ivar3 As Integer
        Dim Map_Win_Id           As Integer
        Dim i_lay_type           As SmallInt
        Dim iz, ln               As SmallInt
        Dim mapname              As String


        OnError goto Err_LinesVol

' +++++++++++++++++++++++++++ close some toolbars +++++++++++++++++++++

        Alter ButtonPad "Tools" Hide
        Alter ButtonPad "Drawing" Hide
        Alter ButtonPad "Main" Show Fixed
        Alter ButtonPad "ODBC" Hide


' +++++++++++++++++++++++++++++ close and open map layers +++++++++++++++++


        MapName = MapPath +"LINES.TAB"     '###### path may change

        Close All

        Open Table MapName As "Lines" password passw

        Map From Lines


'++++++++++++++++++++++++++++++  Getting window ID +++++++++++++++++++++++

        Map_Win_id = FrontWindow()

'++++++   go out of program if operator does not know password ++++++

        If Map_Win_id = 0 Then
                Exit Sub
        End If
```

```
        Set Window Map_Win_id Max

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
'+++++++++++++++++++++++++++++ Shade statements +++++++++++++++++++++++++++++

        Map_Win_id= FrontWindow()
        if WindowInfo(Map_Win_id,WIN_INFO_TYPE)<>WIN_MAPPER then
                note "You must Select a Map Window first"
                Exit Sub
        End If

        ln = MapperInfo(Map_Win_id, MAPPER_INFO_LAYERS)
        iz = 1
        Do
                i_lay_type = LayerInfo(Map_Win_id, iz, LAYER_INFO_TYPE)
                If i_lay_type = LAYER_INFO_TYPE_THEMATIC Then
                        set map redraw off
                        Set Map Layer iz Display Off
                        set map redraw on
                End If
                iz = iz + 1

        Loop While iz <= ln


        Shade Window Map_Win_id "Lines" with VOLT values
                11000 Line (2, 2, RED) ,
                6600 Line (2, 2, YELLOW) ,
                415 Line (2, 2, BLUE) ,
                240 Line (2, 2, GREEN)

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

'+++++++++++++++++++++++++++++ Legend statements +++++++++++++++++++++++++++++

        Set Legend Window Map_Win_id layer prev
                display on
                shades off
                symbols off
                lines on
                count on
                title "Voltage of Lines"
                Font ("MS Sans Serif",0,10,0) subtitle ""
                Font ("MS Sans Serif",0,8,0)ascending off ranges
                Font ("MS Sans Serif",0,8,0)
                "?  = unknown or disconnect" display on ,
                "240" display on ,
                "415" display on ,
                "6600" display on ,
                "11000" display on

        Set Window WIN_LEGEND
        Position (1,4) Units "cm"
        Width 7 Units "cm"
        Height 3 Units "cm"

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        Open Window Legend

Res_LinesVol:
        Exit Sub

Err_LinesVol:
        note "LinesVol: "+str$(err())+" "+error$()
        Resume Next

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        End Sub
```

LocaCust.MBO

```
'**********************************************************
'*                                                        *
'*      LocaCust.MBO                   Edwin, 24.08.98     *
'*                                                        *
'*   This program asks the operator to type in a customer*
'*   account number and zoom in display in red colour.    *
'*                                                        *
'* +++++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required files:                                        *
'*                 MAPBASIC.DEF                           *
'*                 MENU.DEF                             *
'* +++++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required tables:                                       *
'*                - customers.tab                         *
'*                                                        *
'**********************************************************

        include "C:\Program Files\MapInfo\MapBasic\MAPBASIC.DEF"
        include "C:\Program Files\MAPINFO\MAPBASIC\MENU.DEF"

        Global passw as String
        Global MapPath as string

        Declare Sub LocaCust

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++*

        Sub LocaCust


        Dim  ivar1, ivar2, ivar3  As Integer
        Dim accno                       As String
        Dim Map_Win_Id                  As Integer
        Dim ixv, iyv              As Float
        Dim iz, ln                      As SmallInt
        Dim i_lay_type                  As SmallInt
        Dim MapName                     As String



        OnError goto Err_LocaCust

' +++++++++++++++++++++++++++++ close some toolbars ++++++++++++++++++++

        Alter ButtonPad "Tools" Hide
        Alter ButtonPad "Drawing" Hide
        Alter ButtonPad "Main" Show Fixed
        Alter ButtonPad "ODBC" Hide


' +++++++++++++++++++++++++++++ close and open map layers +++++++++++++++
' for definition of "passw" see in password.mbo              #######



        MapName = MapPath +"CUSTOMER.TAB"

        Close All

        Open Table MapName As "Customer" password passw

        Map From Customer


'+++++++++++++++++++++++++++++  Getting window ID +++++++++++++++++++++++

        Map_Win_id = FrontWindow()
```

```
        If Map_Win_id = 0 Then
               Exit Sub
        End If


' +++++++++++++++++  Dialog +++++++++++++++++++++++++++++++++++++++++++++

        Dialog

        Title "Account No."

        Control StaticText
               Title "type in Account No.:"
               Position 5, 10

        Control EditText
               Position 20,20 Width 40
               Into accno

        Control OKButton
               Position 5, 40

        Control CancelButton
               Position 45, 40

        If not CommandInfo(CMD_INFO_DLG_OK) Then         'The user just cancelled.
               Exit Sub
        End If

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        Select * From Customer Where ACCOUNT = accno

        Run Menu Command M_QUERY_FIND_SELECTION


               ixv = CentroidX(Customer.obj)
               iyv = CentroidY(Customer.obj)

'+++++++++++++++++++++++++++ Shade statements +++++++++++++++++++++++++++++

        Shade Window Map_Win_Id "Customer" with ACCOUNT
               Values accno
               Symbol (34,RED,8)
               default Symbol (34,BLACK,8)

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

'+++++++++++++++++ Set Centre and Zoom of Map ++++++++++++++++++++++++++++

        Set Map Window Map_Win_Id
               Center (ixv,iyv)
               Zoom 900 Units "m"

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        Set Window Map_Win_id Max

'+++++++++++++++++++++++++++ Legend statements +++++++++++++++++++++++++++++

        Set Legend Window Map_Win_Id layer prev display on
               shades off
               symbols on
               lines off
               count on
               title "Account no."
               Font ("MS Sans Serif",0,10,0) subtitle ""
               Font ("MS Sans Serif",0,8,0) ascending on ranges
               Font ("MS Sans Serif",0,8,0) "all others" display on ,
               accno display on


        Set Window WIN_LEGEND
        Position (1,4) Units "cm"
```

```
        Width 4 Units "cm"
        Height 2 Units "cm"

        Open Window Legend


'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

Res_LocaCust:
        Exit Sub

Err_LocaCust:
        note "LocaCust: "+str$(err())+" "+error$()
        Resume Next

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++


        End Sub
```

LocaMetr.MBO

```
'*****************************************************
'*                                                   *
'*      LocaMetr.MBO                Paula, 24.08.98   *
'*                                                   *
'*  This program locates and displays the meter      *
'*  with an ID number the user has chosen.           *
'*                                                   *
'* ++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required files:                                   *
'*          MAPBASIC.DEF                             *
'*            MENU.DEF                                  *
'* ++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required tables:                                  *
'*                     - Consumer.tab                *
'*                     -                             *
'*****************************************************


Declare Sub LocaMetr

      Global passw as String
      Global MapPath as string

include "C:\program files\mapinfo\mapbasic\MENU.DEF"
include "C:\program files\mapinfo\mapbasic\MAPBASIC.DEF"


'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

Sub LocaMetr


      Dim  ivar1, ivar2, ivar3   As Integer
      Dim meterno                As String
      Dim Map_Win_Id                   As Integer
      Dim ixv                          As Integer
      Dim iyv                          As Integer
      Dim iz                     As SmallInt
      Dim ln                     As SmallInt
      Dim i_lay_type                   As SmallInt
      Dim MapName                      As String


      OnError goto Err_Met_Loca


'++++++++++++++++++++++++++++++++ the map window ++++++++++++++++++++++++++++++++

      MapName = MapPath +"customer.tab"
      open table MapName password passw as customer
      map from customer Max


      Map_Win_id = FrontWindow()
      if WindowInfo(Map_Win_id,WIN_INFO_TYPE)<>WIN_MAPPER then
            note "You must Select a Map Window first"
            Exit Sub
      End If

      ln = MapperInfo(Map_Win_id, MAPPER_INFO_LAYERS)
      iz = 1

      Do
            i_lay_type = LayerInfo(Map_Win_id, iz, LAYER_INFO_TYPE)
            If i_lay_type = LAYER_INFO_TYPE_THEMATIC Then
                  set map redraw off
                  Set Map Layer iz Display Off
                  set map redraw on
            End If
```

```
            iz = iz + 1

      Loop While iz <= ln


'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

'+++++++++++++++++++++++++++++  DIALOG +++++++++++++++++++++++++++++++++++

      Dialog

      Title "Meter connected in:"

      Control StaticText
            Title "type in meter number:"
            Position 5, 10

      Control EditText
            Position 20,20 Width 40
            Into meterno

      Control OKButton
            Position 5, 40
      Control CancelButton
            Position 45, 40

      If not CommandInfo(CMD_INFO_DLG_OK) Then        'The user just cancelled.
            Exit Sub
      End If


'+++++++++++++++++++++++++++Select Statement++++++++++++++++++++++++++++++++++

      Select * From Customer into sel
            Where METER_NO=meterno
      Run Menu Command M_QUERY_FIND_SELECTION

'+++++++++++++++++ Set Centre and Zoom of Map +++++++++++++++++++++++++++


add Map Layer Sel


      Set Window Map_Win_id Max

      Set Map
            Center (ixv,iyv)
            Zoom Entire Layer Sel
            Zoom 900 Units "m"


'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

Res_Met_Loca:
      Exit Sub

Err_Met_Loca:
      note "Met_Loca: "+str$(err())+" "+error$()
      Resume Res_Met_Loca

End sub
```

LocaPole.MBO

```
'********************************************************
'*                                                      *
'*      LocaPole.MBO              Edwin, 20.08.98        *
'*                                                      *
'*  This program asks the operator to type in a pole ID *
'*  locates the pole, centres the pole and zooms in.    *
'*                                                      *
'*  ++++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required files:                                       *
'*                   MAPBASIC.DEF                        *
'*                    MENU.DEF                            *
'*  ++++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required tables:                                      *
'*                   - poles.tab                         *
'*                                                      *
'********************************************************


        include "C:\Program Files\MapInfo\MapBasic\MAPBASIC.DEF"
        include "C:\Program Files\MAPINFO\MAPBASIC\MENU.DEF"

        Global passw as String
        Global MapPath as string

        Declare Sub LocaPole

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++*


        Sub LocaPole



        Dim  ivar1, ivar2, ivar3  As Integer
        Dim poleno                      As String
        Dim Map_Win_Id                  As Integer
        Dim ixv, iyv            As Float
        Dim iz, ln                      As SmallInt
        Dim i_lay_type                  As SmallInt
        Dim MapName                     As String



        OnError goto Err_LocaPole

' +++++++++++++++++++++++++++ close some toolbars +++++++++++++++++++

        Alter ButtonPad "Tools" Hide
        Alter ButtonPad "Drawing" Hide
        Alter ButtonPad "Main" Show Fixed
        Alter ButtonPad "ODBC" Hide


' +++++++++++++++++++++++++++++++ close and open map layers ++++++++++++++++
'                 #######



        MapName = MapPath +"POLES.TAB"

        Close All

        Open Table MapName As "Poles" Password passw

        Map From Poles


'+++++++++++++++++++++++++++++  Getting window ID +++++++++++++++++++++++++

        Map_Win_id = FrontWindow()
```

```
        If Map_Win_id = 0 Then
                Exit Sub
        End If


' +++++++++++++++++  Dialog +++++++++++++++++++++++++++++++++++++++++

        Dialog

        Title "Pole ID"

        Control StaticText
                Title "type in pole identification:"
                Position 5, 10

        Control EditText
                Position 20,20 Width 40
                Into poleno

        Control OKButton
                Position 5, 40

        Control CancelButton
                Position 45, 40

        If not CommandInfo(CMD_INFO_DLG_OK) Then        'The user just cancelled.
                Exit Sub
        End If

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        Select * From Poles Where POLE_ID=poleno

        Run Menu Command M_QUERY_FIND_SELECTION


                ixv = CentroidX(Poles.obj)
                iyv = CentroidY(Poles.obj)

'++++++++++++++++++++++++++++ Shade statements ++++++++++++++++++++++++++

        Shade Window Map_Win_Id "Poles" with POLE_ID
                Values poleno
                Symbol (34,RED,8)
                default Symbol (34,BLACK,8)

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

'+++++++++++++++++ Set Centre and Zoom of Map +++++++++++++++++++++++++++

        Set Map Window Map_Win_Id
                Center (ixv,iyv)
                Zoom 900 Units "m"

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        Set Window Map_Win_id Max

'++++++++++++++++++++++++++++ Legend statements ++++++++++++++++++++++++++

        Set Legend Window Map_Win_Id layer prev display on
                shades off
                symbols on
                lines off
                count on
                title "Pole number"
                Font ("MS Sans Serif",0,10,0) subtitle ""
                Font ("MS Sans Serif",0,8,0) ascending on ranges
                Font ("MS Sans Serif",0,8,0) "all others" display on ,
                poleno display on


        Set Window WIN_LEGEND
```

```
        Position (1,4) Units "cm"
        Width 4 Units "cm"
        Height 2 Units "cm"

        Open Window Legend


'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

Res_LocaPole:
        Exit Sub

Err_LocaPole:
        note "LocaPole: "+str$(err())+" "+error$()
        Resume Next

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++


        End Sub
```

LocaTran.MBO

```
'*********************************************************
'*                                                       *
'*      LocaTran.MBO              Paula, 24.08.98         *
'*                                                       *
'*   This program locates and displays The Transformer   *
'*   with the ID number that the user has chosen.        *
'*                                                       *
'* +++++++++++++++++++++++++++++++++++++++++++++++++++++  *
'* required files:                                       *
'*            MAPBASIC.DEF                                  *
'*            MENU.DEF                                      *
'* +++++++++++++++++++++++++++++++++++++++++++++++++++++  *
'* required tables:                                      *
'*                  - Tralist.tab                        *
'*                  - Location.tab                       *
'*********************************************************


        include "C:\Program Files\mapinfo\mapbasic\MAPBASIC.DEF"
        include "C:\Program Files\MAPINFO\MAPBASIC\MENU.DEF"


        Global passw as String
        Global MapPath as string

        Declare Sub Locatran


'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

sub LocaTran



        Dim  ivar1, ivar2, ivar3  As Integer
        Dim transfno              As String
        Dim Map_Win_Id                    As Integer
        Dim ixv, iyv              As Integer
        Dim iz, ln                        As SmallInt
        Dim i_lay_type                    As SmallInt
        Dim MapName                       As String



' +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        OnError goto Err_Tra_Loca

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

'+++++++++++++++++ open table statement+++++++++++++++++++++++++++++++++++++++++++

        MapName = MapPath +"Tralist.tab"
        open table MapName password passw as Tralist
        MapName = MapPath +"Location.tab"
        open table MapName password passw as Location

select * from Tralist,Location Where Tralist.LOCAT_NO=Location.LOCAT_NO
            into Transformers NoSelect

Map From Transformers Max


'++++++++++++++++++++++++++++++++  Map Window, Layer Display ++++++++++++++++++

        Map_Win_id= FrontWindow()
        if WindowInfo(Map_Win_id,WIN_INFO_TYPE)<>WIN_MAPPER then
            note "You must Select a Map Window first"
            Exit Sub
```

```
        End If


        ln = MapperInfo(Map_Win_id, MAPPER_INFO_LAYERS)
        iz = 1

        Do
                i_lay_type = LayerInfo(Map_Win_id, iz, LAYER_INFO_TYPE)
                If i_lay_type = LAYER_INFO_TYPE_THEMATIC Then
                        set map redraw off
                        Set Map Layer iz Display Off
                        set map redraw on
                End If
                iz = iz + 1

        Loop While iz <= ln


'++++++++++++++++++++++++++   DIALOG +++++++++++++++++++++++++++++++++++

        Dialog

        Title "Tranformer Number"

        Control StaticText
                Title "type in transformer number:"
                Position 5, 10

        Control EditText
                Position 20,20 Width 40
                Into transfno

        Control OKButton
                Position 5, 40
        Control CancelButton
                Position 45, 40

        If not CommandInfo(CMD_INFO_DLG_OK) Then        'The user just cancelled.
                Exit Sub
        End If

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        Select * From Transformers into sel
                Where TRANSF_NO=transfno

        Run Menu Command M_QUERY_FIND_SELECTION


'++++++++++++++++++ Set Centre and Zoom of Map +++++++++++++++++++++++++++

                'ixv = CentroidX(Transformers.obj)
                'iyv = CentroidY(Transformers.obj)

Add Map Layer Sel
        Set Map
                Zoom Entire layer sel
                Zoom 2000 Units "m"

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++



Res_Tra_Loca:
        Exit Sub

Err_Tra_Loca:
        note "Tra_Loca: "+str$(err())+" "+error$()
        Resume Res_Tra_Loca

end sub
```

LocCustL.MBO

```
'*********************************************************
'*                                                       *
'*       LocCustL.MBO                 Edwin, 24.08.98     *
'*                                                       *
'*   This program asks the operator to type in a Location*
'*   number and zoom in, display customers connected     *
'*   to that transformer location in red colour.         *
'* ++++++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required files:                                       *
'*                   MAPBASIC.DEF                        *
'*                    MENU.DEF                              *
'* ++++++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required tables:                                      *
'*                   - customers.tab                     *
'*                                                       *
'*********************************************************

        include "C:\Program Files\MapInfo\MapBasic\MAPBASIC.DEF"
        include "C:\Program Files\MAPINFO\MAPBASIC\MENU.DEF"

        Global passw as String
        Global MapPath as string

        Declare Sub LocCustL

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++*

        Sub LocCustL


        Dim  ivar1, ivar2, ivar3  As Integer
        Dim locno                        As String
        Dim Map_Win_Id                   As Integer
        Dim ixv, iyv              As Float
        Dim iz, ln                       As SmallInt
        Dim i_lay_type                   As SmallInt
        Dim MapName                      As String



        OnError goto Err_LocCustL

' ++++++++++++++++++++++++++++++ close some toolbars ++++++++++++++++++++

        Alter ButtonPad "Tools" Hide
        Alter ButtonPad "Drawing" Hide
        Alter ButtonPad "Main" Show Fixed
        Alter ButtonPad "ODBC" Hide


' ++++++++++++++++++++++++++++++ close and open map layers ++++++++++++++
'



        MapName = MapPath +"CUSTOMER.TAB"

        Close All

        Open Table MapName As "Customer" password passw

        Map From Customer


'++++++++++++++++++++++++++++++++  Getting window ID ++++++++++++++++++++++

        Map_Win_id = FrontWindow()
```

```
        If Map_Win_id = 0 Then
                Exit Sub
        End If


' +++++++++++++++++  Dialog +++++++++++++++++++++++++++++++++++++++++++

        Dialog

        Title "Location No."

        Control StaticText
                Title "type in Location No.:"
                Position 5, 10

        Control EditText
                Position 20,20 Width 40
                Into locno

        Control OKButton
                Position 5, 40

        Control CancelButton
                Position 45, 40

        If not CommandInfo(CMD_INFO_DLG_OK) Then        'The user just cancelled.
                Exit Sub
        End If

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        Select * From Customer Where LOCAT_NO = locno

        Run Menu Command M_QUERY_FIND_SELECTION


                ixv = CentroidX(Customer.obj)
                iyv = CentroidY(Customer.obj)

'+++++++++++++++++++++++++++ Shade statements +++++++++++++++++++++++++++

        Shade Window Map_Win_Id "Customer" with LOCAT_NO
                Values locno
                Symbol (34,RED,8)
                default Symbol (34,BLACK,8)

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

'+++++++++++++++++ Set Centre and Zoom of Map +++++++++++++++++++++++++++

        Set Map Window Map_Win_Id
                Center (ixv,iyv)
                Zoom 900 Units "m"

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        Set Window Map_Win_id Max

'++++++++++++++++++++++++++++ Legend statements +++++++++++++++++++++++++++

        Set Legend Window Map_Win_Id layer prev display on
                shades off
                symbols on
                lines off
                count on
                title "Location no."
                Font ("MS Sans Serif",0,10,0) subtitle ""
                Font ("MS Sans Serif",0,8,0) ascending on ranges
                Font ("MS Sans Serif",0,8,0) "all others" display on ,
                locno display on


        Set Window WIN_LEGEND
        Position (1,4) Units "cm"
```

63

```
        Width 4 Units "cm"
        Height 2 Units "cm"

        Open Window Legend


'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

Res_LocCustL:
        Exit Sub

Err_LocCustL:
        note "LocCustL: "+str$(err())+" "+error$()
        Resume Next

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++


        End Sub
```

LocCustM.MBO

```
'*****************************************************
'*                                                   *
'*      LocCustM.MBO              Edwin, 24.08.98     *
'*                                                   *
'*  This program asks the operator to type in a customer*
'*  meter number and zoom in display in red colour.  *
'*                                                   *
'* +++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required files:                                   *
'*                  MAPBASIC.DEF                      *
'*                   MENU.DEF                        *
'* +++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required tables:                                  *
'*                  - customers.tab                  *
'*                                                   *
'*****************************************************

        include "C:\Program Files\MapInfo\MapBasic\MAPBASIC.DEF"
        include "C:\Program Files\MAPINFO\MAPBASIC\MENU.DEF"

        Global passw as String
        Global MapPath as string

        Declare Sub LocCustM

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++*

        Sub LocCustM


        Dim  ivar1, ivar2, ivar3  As Integer
        Dim metno                     As String
        Dim Map_Win_Id                As Integer
        Dim ixv, iyv              As Float
        Dim iz, ln                    As SmallInt
        Dim i_lay_type                As SmallInt
        Dim MapName                   As String



        OnError goto Err_LocCustM

' +++++++++++++++++++++++++++ close some toolbars +++++++++++++++++++++

        Alter ButtonPad "Tools" Hide
        Alter ButtonPad "Drawing" Hide
        Alter ButtonPad "Main" Show Fixed
        Alter ButtonPad "ODBC" Hide


' +++++++++++++++++++++++++++++ close and open map layers ++++++++++++++++
' for definition of passw see in password.mbo           #######



        MapName = MapPath +"CUSTOMER.TAB"

        Close All

        Open Table MapName As "Customer" password passw

        Map From Customer


'++++++++++++++++++++++++++++++  Getting window ID +++++++++++++++++++++++

        Map_Win_id = FrontWindow()
```

```
        If Map_Win_id = 0 Then
              Exit Sub
        End If


' +++++++++++++++++++  Dialog +++++++++++++++++++++++++++++++++++++++++++

        Dialog

        Title "Meter No."

        Control StaticText
              Title "type in Meter No.:"
              Position 5, 10

        Control EditText
              Position 20,20 Width 40
              Into metno

        Control OKButton
              Position 5, 40

        Control CancelButton
              Position 45, 40

        If not CommandInfo(CMD_INFO_DLG_OK) Then        'The user just cancelled.
              Exit Sub
        End If

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        Select * From Customer Where METER_NO = metno

        Run Menu Command M_QUERY_FIND_SELECTION


              ixv = CentroidX(Customer.obj)
              iyv = CentroidY(Customer.obj)

'++++++++++++++++++++++++++ Shade statements +++++++++++++++++++++++++++++

        Shade Window Map_Win_Id "Customer" with METER_NO
              Values metno
              Symbol (34,RED,8)
              default Symbol (34,BLACK,8)

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

'+++++++++++++++++++ Set Centre and Zoom of Map +++++++++++++++++++++++++++

        Set Map Window Map_Win_Id
              Center (ixv,iyv)
              Zoom 900 Units "m"

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        Set Window Map_Win_id Max

'++++++++++++++++++++++++++++++++ Legend statements +++++++++++++++++++++++++

        Set Legend Window Map_Win_Id layer prev display on
              shades off
              symbols on
              lines off
              count on
              title "Meter no."
              Font ("MS Sans Serif",0,10,0) subtitle ""
              Font ("MS Sans Serif",0,8,0) ascending on ranges
              Font ("MS Sans Serif",0,8,0) "all others" display on ,
              metno display on


        Set Window WIN_LEGEND
        Position (1,4) Units "cm"
```

```
        Width 4 Units "cm"
        Height 2 Units "cm"

        Open Window Legend


'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

Res_LocCustM:
        Exit Sub

Err_LocCustM:
        note "LocCustM: "+str$(err())+" "+error$()
        Resume Next

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++


        End Sub
```

LocCustP.MBO

```
'*********************************************************
'*                                                       *
'*      LocCustP.MBO                 Edwin, 24.08.98      *
'*                                                       *
'*   This program asks the operator to type in a Pole Id *
'*   number and zoom in, display customers connected     *
'*   to that Pole in red colour.                         *
'* +++++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required files:                                       *
'*                    MAPBASIC.DEF                       *
'*                    MENU.DEF                          *
'* +++++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required tables:                                      *
'*                  - customers.tab                      *
'*                                                       *
'*********************************************************

        include "C:\Program Files\MapInfo\MapBasic\MAPBASIC.DEF"
        include "C:\Program Files\MAPINFO\MAPBASIC\MENU.DEF"

        Global passw as String
        Global MapPath as string

        Declare Sub LocCustP
'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++*

        Sub LocCustP


        Dim  ivar1, ivar2, ivar3   As Integer
        Dim polid                       As String
        Dim Map_Win_Id                  As Integer
        Dim ixv, iyv            As Float
        Dim iz, ln                      As SmallInt
        Dim i_lay_type                  As SmallInt
        Dim MapName                     As String



        OnError goto Err_LocCustP

' ++++++++++++++++++++++++++ close some toolbars +++++++++++++++++++++

        Alter ButtonPad "Tools" Hide
        Alter ButtonPad "Drawing" Hide
        Alter ButtonPad "Main" Show Fixed
        Alter ButtonPad "ODBC" Hide


' +++++++++++++++++++++++++++ close and open map layers +++++++++++++++
' for definition of passw see in password.mbo             #######

        MapName = MapPath +"CUSTOMER.TAB"

        Close All

        Open Table MapName As "Customer" password pwd

        Map From Customer


'++++++++++++++++++++++++++++++++  Getting window ID ++++++++++++++++++++++++

        Map_Win_id = FrontWindow()


        If Map_Win_id = 0 Then
                Exit Sub
        End If
```

```
' +++++++++++++++++++  Dialog +++++++++++++++++++++++++++++++++++++++++++

        Dialog

        Title "Pole Id."

        Control StaticText
                Title "type in Pole Id.:"
                Position 5, 10

        Control EditText
                Position 20,20 Width 40
                Into polid

        Control OKButton
                Position 5, 40

        Control CancelButton
                Position 45, 40

        If not CommandInfo(CMD_INFO_DLG_OK) Then        'The user just cancelled.
                Exit Sub
        End If

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        Select * From Customer Where POLE_ID = polid

        Run Menu Command M_QUERY_FIND_SELECTION


                ixv = CentroidX(Customer.obj)
                iyv = CentroidY(Customer.obj)

'+++++++++++++++++++++++++++++ Shade statements ++++++++++++++++++++++++++++

        Shade Window Map_Win_Id "Customer" with POLE_ID
                Values polid
                Symbol (34,RED,8)
                default Symbol (34,BLACK,8)

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

'++++++++++++++++++ Set Centre and Zoom of Map ++++++++++++++++++++++++++++

        Set Map Window Map_Win_Id
                Center (ixv,iyv)
                Zoom 900 Units "m"

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        Set Window Map_Win_id Max

'++++++++++++++++++++++++++++++++ Legend statements +++++++++++++++++++++++++

        Set Legend Window Map_Win_Id layer prev display on
                shades off
                symbols on
                lines off
                count on
                title "Pole Id."
                Font ("MS Sans Serif",0,10,0) subtitle ""
                Font ("MS Sans Serif",0,8,0) ascending on ranges
                Font ("MS Sans Serif",0,8,0) "all others" display on ,
                polid display on


        Set Window WIN_LEGEND
        Position (1,4) Units "cm"
        Width 4 Units "cm"
        Height 2 Units "cm"
```

```
        Open Window Legend


'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

Res_LocCustP:
        Exit Sub

Err_LocCustP:
        note "LocCustL: "+str$(err())+" "+error$()
        Resume Next

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++

        End Sub
```

.

```
Res_LocCustP:
        Exit Sub

Err_LocCustP:
        note "LocCustL: "+str$(err())+" "+error$()
        Resume Next
```

LocMetTp.MBO

```
'****************************************************
'*                                                  *
'*      HVTypeTr.MBO              Paula, 24.08.98    *
'*                                                  *
'*  This program locates and displays The Meter of a *
'*  special type that the user has chosen.          *
'*                                                  *
'* ++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required files:                                  *
'*            MAPBASIC.DEF                           *
'*            MENU.DEF                               *
'* ++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required tables:                                 *
'*                    - Consumer.tab                 *
'*                    - Meter.tab                    *
'****************************************************


        include "C:\program files\mapinfo\mapbasic\MENU.DEF"
        include "C:\program files\mapinfo\mapbasic\MAPBASIC.DEF"

        Global passw as String
        Global MapPath as string

        Declare Sub LocMetTp


'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

Sub LocMetTp


        Dim  ivar1, ivar2, ivar3 As Integer
        Dim meterty   As String
        Dim imeter             As SmallInt
        Dim more               As Logical
        Dim iCounter as Integer
        Dim aRowId             as Alias
        Dim aMeter             as Alias
        Dim aMeterName         as Alias
        Dim sMeterType(1) as String
        Dim sMeterName(1) as String
        Dim Map_Win_id         as Integer
        Dim i_lay_type         As SmallInt
        Dim iz, ln             As SmallInt
        Dim MapName            As String

        OnError goto Err_Lo_Mtyp

' ++++++++++++++++++++++++ Open Table Statement ++++++++++++++++++++++++++++++++

        MapName = MapPath +"customer.tab"
        open table MapName as customer Password Passw
        MapName = MapPath +"Meter.tab"
        open table MapName as Meter Password Passw
        map from customer Max


        Map_Win_id= FrontWindow()
        if WindowInfo(Map_Win_id,WIN_INFO_TYPE)<>WIN_MAPPER then
                note "You must Select a Map Window first"
                Exit Sub
        End If

        ln = MapperInfo(Map_Win_id, MAPPER_INFO_LAYERS)
        iz = 1

        Do
                i_lay_type = LayerInfo(Map_Win_id, iz, LAYER_INFO_TYPE)
                If i_lay_type = LAYER_INFO_TYPE_THEMATIC Then
```

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```
                     set map redraw off
                     Set Map Layer iz Display Off
                     set map redraw on
              End If
              iz = iz + 1

        Loop While iz <= ln

' ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++


        Select MET_TYPE,NAME from Meter order by MET_TYPE Group By MET_TYPE
              Into MeterList NoSelect

        aRowId="Meter.rowid"
        aMeter="MeterList.MET_TYPE"
        aMeterName="MeterList.NAME"

        Fetch First from MeterList        ' cursor to first record
        iCounter=1
        Do While NOT EOT( MeterList )
              Redim sMeterType(iCounter)
              Redim sMeterName(iCounter)
              if iCounter=1 then
                     sMeterType(iCounter)=aMeter
                     sMeterName(iCounter)=aMeterName
                     iCounter=2
              else
                     if sMeterType(iCounter-1)<>aMeter then
                            sMeterType(iCounter)=aMeter
                            sMeterName(iCounter)=aMeterName
                            iCounter=iCounter+1
                     end if
              end if
              Fetch Next from MeterList          ' cursor to the next record
        Loop
        Close Table Meterlist
        Close Table Meter


'++++++++++++++++++++++++++++++  DIALOG ++++++++++++++++++++++++++++++++++++++++

        Dialog

        Title "select type:"

        Control StaticText
              Title "select meter type:"
              Position 5, 10

        Control PopUpMenu
              Title From Variable sMeterName
'             Title "F2K_10B;F2K_100;M3;FMm;E89C2;C11B2A;C11B2F;FNEA34Q;FL;F2Q_100;FNN2Q;F4K-
10B;F4K-100;C11B2;F2Q-10B;F2K-
10;FNE12Q;S200.31;E43B3E;FNE12B;FMMQ;S3012;2.0;FNAA34Q;HMT;S301;E43B2-D;F4K-11B;FLX;C11B2N"
              Value 1
              Position 20,20 Width 60
              Into imeter

        Control OKButton
              Position 20, 40
        Control CancelButton
              Position 65, 40

        If not CommandInfo(CMD_INFO_DLG_OK) Then        'The user just cancelled.
              Exit Sub
        End If

'       If more <> 0 Then


'              Dialog
'
'                     Title "select type:"
```

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```
'                    Control StaticText
'                            Title "select meter type:"
'                            Position 5, 10
'
'                    Control ListBox
'                            Title "F2Q;E43B3B;E43B3D;FMMX;FNAB;FNAB34Q;FNE34Q;FNN12Q;S.3019;
'
S200;SUNDRIES;S.D;AP4A;FNA34Q;S301.6;SF;X.T.1;FNAA2Q;FNEA12Q;FNN2A;M2;CA75441;7CA54;EA3B3C;D43R-
R\M;AB3A-K10;B.530.10;C11B3F"
'
'                            Value 28
'                            Position 20,20 Width 60 Height 200
'                            Into imeter
'
'            Control OKButton
'                    Position 25, 240
'
'        End If
'
'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

'+++++++++++++++ creating the right variable ++++++++++++++++++++++++++

        meterty = sMeterType(imeter)

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

'+++++++++++++++++++++++ creating the map window ++++++++++++++++++++++++++++++++

        'Open Table "C:\USERS\TESTWOLF\Locat007"
        'Open Table "C:\USERS\TESTWOLF\N_cad"

        'Map From "N_cad"
        'Position (1,1)Units "cm"
        'Width 25 Units "cm"
        'Height 15 Units "cm"
        'Add Map Layer "Locat007"
        'Set Map  Zoom Entire Layer 1
        'ivar1 = WindowID(1)

'++++++++++++++++++++++++++++++++ Shade statements ++++++++++++++++++++++++++++

        Shade Window Map_Win_Id "Customer" with MET_TYPE Values meterty Symbol
            (60,Black,9) default Symbol (60,red,9)

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

'+++++++++++++++++++++++++++++++ Legend statements ++++++++++++++++++++++++++++

        Set Legend Window Map_Win_Id layer prev display on shades off symbols on
                lines off count on title "Meter types"
                Font ("MS Sans Serif",0,10,0) subtitle ""
                Font ("MS Sans Serif",0,8,0) ascending on ranges
                Font ("MS Sans Serif",0,8,0) "all others" display on ,
                sMeterName(imeter) display on


        Set Window WIN_LEGEND
        Position (1,4) Units "cm"
        Width 6 Units "cm"
        Height 3 Units "cm"

        Open Window Legend

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Res_Lo_Mtyp:
        Exit Sub

Err_Lo_Mtyp:
        note "Lo_Mtyp: "+str$(err())+" "+error$()
        Resume Res_Lo_Mtyp

End Sub
```

LVTypeTr.MBO

```
'*********************************************************
'*                                                       *
'*      LVTypeTr.MBO               Paula, 24.08.98        *
'*                                                       *
'*   This program displays The Transformers by classe of *
'*   different type for the Low Voltage.                 *
'*                                                       *
'* ++++++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required files:                                       *
'*           MAPBASIC.DEF                                 *
'*           MENU.DEF                                     *
'* ++++++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required tables:                                      *
'*                    - Tralist.tab                      *
'*                    - Location.tab                     *
'*********************************************************

        Declare Sub LVTypeTr

        Global passw as String
        Global MapPath as string


        include "C:\Program Files\mapinfo\mapbasic\MAPBASIC.DEF"
        include "C:\Program Files\MAPINFO\MAPBASIC\MENU.DEF"


'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Sub LVTypeTr


        Dim Map_Win_Id      as Integer
        Dim iz, ln          As SmallInt
        Dim i_lay_type      As SmallInt
        Dim MapName         As String

'  +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        OnError goto Err_LV_Typ

'  +++++++++++++++++++++++++ Open Table Statement +++++++++++++++++++++++

        MapName = MapPath +"Tralist.tab"
        open table MapName password passw as Tralist
        MapName = MapPath +"Location.tab"
        open table MapName password passw as Location

select * from Tralist,Location Where Tralist.LOCAT_NO=Location.LOCAT_NO
            into Transformers NoSelect

Map From Transformers Max


        Map_Win_id= FrontWindow()
        if WindowInfo(Map_Win_id,WIN_INFO_TYPE)<>WIN_MAPPER then
            note "You must Select a Map Window first"
            Exit Sub
        End If

        ln = MapperInfo(Map_Win_id, MAPPER_INFO_LAYERS)
        iz = 1

        Do
            i_lay_type = LayerInfo(Map_Win_id, iz, LAYER_INFO_TYPE)
            If i_lay_type = LAYER_INFO_TYPE_THEMATIC Then
                    set map redraw off
                    Set Map Layer iz Display Off
                    set map redraw on
            End If
```

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```
            iz = iz + 1

      Loop While iz <= ln



'+++++++++++++++++++++++++ Shade statements +++++++++++++++++++++++++

      Shade Window Map_Win_Id "Transformers" with VOLT_LV Values
            "240" Symbol (37,RED,12,"MapInfo Symbols",257,0) ,
            "415" Symbol (37,BLUE,12,"MapInfo Symbols",257,0) ,
            "433" Symbol (37,GREEN,12,"MapInfo Symbols",257,0),
            "415/240" Symbol (37,Yellow,12,"MapInfo Symbols",257,0),
            "480/240" Symbol (37,8388608,12,"MapInfo Symbols",257,0)
            default Symbol (37,0,12,"MapInfo Symbols",257,0)

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

'+++++++++++++++++++++++++ Legend statements +++++++++++++++++++++++++

      Set Legend Window Map_win_Id layer prev display on shades off symbols on
            lines off count on title "Low Voltage Type"
            Font ("MS Sans Serif",0,10,0) subtitle ""
            Font ("MS Sans Serif",0,8,0) ranges
            Font ("MS Sans Serif",0,8,0)
            "other" display on



      Set Window WIN_LEGEND
      Position (1,4) Units "cm"
      Width 5 Units "cm"
      Height 5 Units "cm"

      Open Window Legend

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Res_LV_Typ:
      Exit Sub

Err_LV_Typ:
      note "LV_Typ: "+str$(err())+" "+error$()
      Resume Res_LV_Typ

end sub
```

MaxPowTr.MBO

```
'********************************************************
'*                                                      *
'*      MaxPowTr.MBO                Paula, 24.08.98      *
'*                                                      *
'*  This program displays The Transformers by range of  *
'*  Maximum Power.                                      *
'*                                                      *
'* ++++++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required files:                                      *
'*              MAPBASIC.DEF                             *
'*              MENU.DEF                                 *
'* ++++++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required tables:                                     *
'*                  - Tralist.tab                        *
'*                  - Location.tab                       *
'********************************************************


        include "C:\Program Files\mapinfo\mapbasic\MAPBASIC.DEF"
        include "C:\Program Files\MAPINFO\MAPBASIC\MENU.DEF"

        Global passw as String
        Global MapPath as string

        Declare Sub MaxPowTr


'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
        Sub MaxPowTr

        Dim Map_Win_Id      As Integer
        Dim iz, ln          As SmallInt
        Dim i_lay_type      As SmallInt
        Dim MapName         As String

' +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        OnError Goto Err_PowerMax

' +++++++++++++++++++++ Open Table Statement +++++++++++++++++++++++++++++++++++++++++

        MapName = MapPath +"Tralist.tab"
        Open table MapName Password passw as Tralist
        MapName = MapPath +"Location.tab"
        Open table MapName Password passw as Location

        Select * from Tralist,Location Where Tralist.LOCAT_NO=Location.LOCAT_NO
                into Transformers NoSelect

        Map From Transformers Max


'+++++++++++++++++++++++++++++ Get Windows ID +++++++++++++++++++++++++++++++++++++++++++


        Map_Win_id= FrontWindow()
        if WindowInfo(Map_Win_id,WIN_INFO_TYPE)<>WIN_MAPPER then
                note "You must Select a Map Window first"
                Exit Sub
        End If

        ln = MapperInfo(Map_Win_id, MAPPER_INFO_LAYERS)
        iz = 1

        Do
                i_lay_type = LayerInfo(Map_Win_id, iz, LAYER_INFO_TYPE)
                If i_lay_type = LAYER_INFO_TYPE_THEMATIC Then
                        set map redraw off
                        Set Map Layer iz Display Off
```

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```
                    set map redraw on
            End If
            iz = iz + 1

    Loop While iz <= ln



'+++++++++++++++++++++++++ Shade statements +++++++++++++++++++++++++++

        Shade Window Map_Win_Id "Transformers" with KVA Ranges
                1:16 Symbol (37,RED,12,"MapInfo Symbols",257,0) ,
                16:31 Symbol (37,32768,12,"MapInfo Symbols",257,0) ,
                31:51 Symbol (37,GREEN,12,"MapInfo Symbols",257,0) ,
                51:101 Symbol (37,BLUE,12,"MapInfo Symbols",257,0) ,
                101:201 Symbol (37,YELLOW,12,"MapInfo Symbols",257,0) ,
                201:501 Symbol (37,6711935,12,"MapInfo Symbols",257,0) ,
                501:1001 Symbol (37,6744576,12,"MapInfo Symbols",257,0)
                default Symbol (37,0,12,"MapInfo Symbols",257,0)


'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

'++++++++++++++++++++++++++ Legend statements +++++++++++++++++++++++++

        Set Legend Window Map_Win_Id layer prev display on shades off symbols on
                lines off count on title "KVA grouping of transformers"
                Font ("MS Sans Serif",0,10,0) subtitle ""
                Font ("MS Sans Serif",0,8,0) ascending on ranges
                Font ("MS Sans Serif",0,8,0)
                "0 or ? or >1000 " display on ,
                "1 -   15 " display on ,
                "15 -   30 " display on ,
                "30 -   50 " display on ,
                "50 -  100 " display on ,
                "100 -  200 " display on ,
                "200 -  500 " display on ,
                "500 - 1000 " display on



        Set Window WIN_LEGEND
        Position (1,4) Units "cm"
        Width 6 Units "cm"
        Height 6 Units "cm"

        Open Window Legend

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

Res_PowerMax:
        Exit Sub

Err_PowerMax:
        note "PowerMax: "+str$(err())+" "+error$()
        Resume Res_PowerMax

End Sub
```

MetNoCon.MBO

```
'*****************************************************
'*                                                   *
'*      MetNoCon.MBO               Paula, 24.08.98    *
'*                                                   *
'*  This program displays The Meters disconnected in *
'*  the month the user has chosen.                   *
'*                                                   *
'* +++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required files:                                   *
'*            MAPBASIC.DEF                              *
'*            MENU.DEF                                 *
'* +++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required tables:                                  *
'*                 - Consumer.tab                    *
'*                                                   *
'*****************************************************


        include "C:\program files\mapinfo\mapbasic\MENU.DEF"
        include "C:\program files\mapinfo\mapbasic\MAPBASIC.DEF"

        Global passw as String
        Global MapPath as string


        Declare Sub MetNoCon

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

Sub MetNoCon

        Dim ivar1          As integer
        Dim Map_Win_Id     as Integer
        Dim iz, ln         As SmallInt
        Dim i_lay_type     As SmallInt
        Dim MapName        As String

'  ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        OnError goto Err_Not_Conn

'  ++++++++++++++++++++++++++++ Open table Statement ++++++++++++++++++++++++++


        MapName = MapPath +"customer.tab"
        open table MapName Password passw as customer
        map from customer Max


'++++++++++++++++++++++++++++++++++++Get the Window ID++++++++++++++++++++++++++++

        Map_Win_id= FrontWindow()
        if WindowInfo(Map_Win_id,WIN_INFO_TYPE)<>WIN_MAPPER then
                note "You must Select a Map Window first"
                Exit Sub
        End If

        ln = MapperInfo(Map_Win_id, MAPPER_INFO_LAYERS)
        iz = 1

        Do
                i_lay_type = LayerInfo(Map_Win_id, iz, LAYER_INFO_TYPE)
                If i_lay_type = LAYER_INFO_TYPE_THEMATIC Then
                        set map redraw off
                        Set Map Layer iz Display Off
                        set map redraw on
                End If
                iz = iz + 1
```

```
        Loop While iz <= ln


'++++++++++++++++++++++++ Shade statements ++++++++++++++++++++++++

        Shade Window Map_win_Id "Customer" with MET_TYPE values
                "0" Symbol (47,Blue,12,"MapInfo Real Estate",257,0) ,
                "00" Symbol (47,RED,12,"MapInfo Real Estate",257,0)
                default Symbol (47,BLACK,12,"MapInfo Real Estate",257,0)

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

'++++++++++++++++++++++++ Legend statements ++++++++++++++++++++++++

        Set Legend Window Map_Win_Id layer prev display on shades off symbols on
                lines off count on title "Meter removed"
                Font ("MS Sans Serif",0,10,0) subtitle ""
                Font ("MS Sans Serif",0,8,0) ascending on ranges
                Font ("MS Sans Serif",0,8,0) "all others" display on ,
                "unknown" display on ,"removed" display on ,"Not connected" display on

        Set Window WIN_LEGEND
        Position (1,4) Units "cm"
        Width 5 Units "cm"
        Height 4 Units "cm"

Open Window Legend

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Res_Not_Conn:
        Exit Sub

Err_Not_Conn:
        note "Not_Conn: "+str$(err())+" "+error$()
        Resume Res_Not_Conn

End Sub
```

NbConsTr.MBO

```
'*********************************************************
'*                                                       *
'*      NbConsTr.MBO              Paula, 24.08.98         *
'*                                                       *
'*   This programme will calculate the cost of Power     *
'*   Failure.                                            *
'*                                                       *
'* +++++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required files:                                       *
'*            MAPBASIC.DEF                                 *
'*            MENU.DEF                                     *
'* +++++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required tables:                                      *
'*                  - Tralist.tab                        *
'*                  - Location.tab                       *
'*                  - Customer.tab                       *
'* This program create a temporary table temp.tab and    *
'* erase this table after.                               *
'*********************************************************


        Include "C:\Program Files\Mapinfo\Mapbasic\Mapbasic.def"
        Include "C:\Program Files\Mapinfo\Mapbasic\Menu.def"

        Global passw as String
        Global MapPath as string

        Declare Sub NbConsTr


'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++


sub NbConsTr

        Dim Map_win_Id      As Integer
        Dim Tnb             As String
        Dim Tloc            As String
        Dim Cust_nb         As Integer
        Dim Cust_nb_total   As Integer
        Dim MapName         As String
        Dim Consump         As Float
        Dim Consump_total   As Float
        Dim Cost            As Float
        Dim NbTrans         As Integer
        Dim hours           As Integer
        Dim minutes         As Integer
        Dim i               As Integer

'++++++++++++++++++++++++++++Open Table Statement++++++++++++++++++++++++++++++++

        MapName = MapPath +"Tralist.tab"
        open table MapName Password passw as Tralist

        MapName = MapPath +"Location.tab"
        open table MapName Password passw as Location

        select * from Tralist,Location Where Tralist.LOCAT_NO=Location.LOCAT_NO
                into Transformers NoSelect

        MapName = MapPath +"Customer.TAB"
        Open Table MapName Password passw As Customer

        Map from Transformers,customer Max

MapName = MapPath +"Temp.tab"
Create Table "temp" ( ACCOUNT Char(8),
   METER_NO Char(8),
   CUSTOMER Char(25),
```

```
  V_CODE Char(2),
  CUSTO_NO Char(4),
  MAP_ADDRES Char(7),
  POLE_ID Char(8),
  PHA_TYPE Char(2),
  COND_TYPE Char(2),
  COND_SPAN Float,
  C_CLASS Char(2),
  POLE_FUSE Logical,
  MET_TYPE Char(2),
  SEALED_T Date,
  SEALED_B Date,
  LOCAT_NO Char(3),
  STREET Char(25),
  CONSUMPTION Float,
  LASTCONSUMPTION Float) file MapName TYPE NATIVE Charset "WindowsLatin1"
Create Map For temp
CoordSys Earth Projection 8, 104, "m", -177, 0, 0.9996, 500000, 10000000
Bounds (-7745844.29597, 2035.05676326) (8745844.29597, 19997964.9432)
Add Map Layer temp
Set Map Layer temp Editable On


Map_Win_id= FrontWindow()
i=0
'***************Dialog box*************************************


dialog
        Title "Enter the Number of affected Tranformer(s) "
        width 190 height 60

Control StaticText
        position 15,15
        Title "Number :"

Control EditText
        position 60,15
        Into NbTrans


Control OKButton
        position 30,40
Control CancelButton
        position 120,40

        If not CommandInfo(CMD_INFO_DLG_OK) Then        'The user just cancelled.
            Exit Sub
        End If


dialog
        Title "Enter the Time of the Power Failure"
        Width 150 Height 70

Control StaticText
        Position 20,10
        Title "Nb of hours :"

Control EditText
        position 90,10 width 20
        Into hours

Control StaticText
        position 20,25
        Title "Nb of minutes :"

Control EditText
        position 90,25 width 20
        Into minutes


Control OKButton
        position 20,50
```

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```
Control CancelButton
        position 80,50

        If not CommandInfo(CMD_INFO_DLG_OK) Then        'The user just cancelled.
            Exit Sub
        End If

'+++++++++++++++++++++++++Enter one by one the Location of affected
Transormers++++++++++++++++++++
Consump_total=0
Cust_nb_total=0


do


        Tnb=""
        Tloc=""

        Do While Tnb="" and Tloc=""

            dialog


Title "transformer N# :"+str$(i+1)
            Control StaticText
            Title "Enter the Tranformer Number OR the Tranformer Location"

            Control StaticText
            position 10,20
            Title "Location :"

            Control EditText
            position 50,20
            Into Tloc

            Control StaticText
            position 10,35
            Title "Number :"

            Control EditText
            position 50,35
            Into Tnb


            Control OKButton
            Control CancelButton

            If not CommandInfo(CMD_INFO_DLG_OK) Then        'The user just cancelled.
            Exit Sub
            End If



'********************************End Dialog Box**************************************


'*******************************Control if this transformer is in the database*********
            if val(Tloc)=0 then Tloc=""
            End if

            if Tloc<>"" then
                select * from Transformers where val(Locat_No)=val(Tloc) into sel noselect
                If sel.locat_no="" then Tloc=""  Else Tloc=sel.locat_no End If

            end if

            if Tnb<>"" then
                select * from Transformers where val(Transf_No)=val(Tnb) into sel noselect
                If sel.locat_no="" then Tnb=""  else Tloc=sel.locat_no End If

            end if
```

```
        loop

        consump=Sel.Consumption

        close table sel

'******************************End Control*********************************************


'*****************************Calculation of number of customer***********************


        select * from Customer where Locat_No=Tloc into sel noselect
        Fetch First From sel
        cust_nb=0

        Do While Not EOT(sel)
                cust_nb = cust_nb + 1
                Fetch Next From sel
        Loop
i=i+1

insert into temp select * from sel

set map redraw off
Add Map Layer sel
Set Map Layer sel Display Global Editable Off Selectable On
Global Line (1,2,0)
Global Pen (1,2,0)
Global Brush (2,16777215,16777215)
Global Symbol (33,16711680,10,"MapInfo Real Estate",1,0)
Global Font ("Arial",0,9,0)
Zoom (0, 100000) Units "km" Off
Label Line Arrow Position Right Font ("Arial",0,9,0) Pen (1,2,0)
With ACCOUNT Parallel On Auto Off Overlap Off PartialSegments Off
Duplicates On Offset 2 Max Visibility On Nodes Off Arrows Off
Centroids Off
set map redraw on
Set Map Window Map_Win_id Zoom Entire Layer sel



Note
"There is "+str$(cust_nb)+" Customer(s) connected to the transformer (location "
+Tloc+" ) this is your N#"+i+" location."

consump_total=consump_total+consump
Cust_nb_total=Cust_nb_total+Cust_nb

close table sel

Loop Until i=Nbtrans

'+++++++++++++++++++++++++ Calculate the consumption for the transformers +++++++++++++++++

minutes=minutes+hours*60

Consump=minutes*consump_total/43380 ' 43380 is an average of the number of minutes in one month

Cost=Consump*.26

set map redraw off
Add Map Layer temp
Set Map Layer temp Display Global Editable Off Selectable On
Global Line (1,2,0)
Global Pen (1,2,0)
Global Brush (2,16777215,16777215)
Global Symbol (33,16711680,10,"MapInfo Real Estate",1,0)
Global Font ("Arial",0,9,0) Zoom (0, 100000) Units "km" Off
Label Line Arrow Position Right Font ("Arial",0,9,0) Pen (1,2,0)
With ACCOUNT Parallel On Auto Off Overlap Off PartialSegments Off
Duplicates On Offset 2 Max Visibility On Nodes Off Arrows Off
Centroids Off
set map redraw on
```

```
Set Map Window Map_Win_id Zoom Entire Layer temp


'++++++++++++++++++++++++ Full Report +++++++++++++++++++++++++++++++++++++++++++++++++

Dialog

Title "Power Failure Report"
POSITION 0,30
Width 180 Height 130

control staticText
position 15,10
Title "Time of Power Failure :"+Str$(hours)+" hour(s) "+Str$(minutes-60*hours)+" Minutes"

control staticText
position 15,30
Title "Number of affected Location :"+Str$(i)

control staticText
position 15,50
Title "Total of affected Consumers :"+Str$(Cust_Nb_Total)

control staticText
position 15,70
Title "Estimated Lost Consumption : "+Str$(Consump)+" KWh"

control staticText
position 15,90
Title "Cost of the estimated Consumption : T$ "+Str$(cost)

Control OKButton
position 50,110
If not CommandInfo(CMD_INFO_DLG_OK) Then        'The user just cancelled.
Exit Sub
End If

Drop table temp



End Sub
```

Password.MBO

```
'**********************************************************
'*                                                        *
'*      Password.MBO                   Edwin, 21.08.98     *
'*                                                        *
'*   This program asks for the data control center        *
'*   password. The TEPB database (Access) is secured      *
'*   through a password which the user has to know        *
'*   +++++++++++++++++++++++++++++++++++++++++++++++++++   *
'* required files:                                        *
'*                                                        *
'*   +++++++++++++++++++++++++++++++++++++++++++++++++++   *
'* required tables:                                       *
'*                                                        *
'**********************************************************


        Declare Sub Password

        Global passw        As String

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

           Sub Password



'+++++++++++++++++++++ Dialog Statements +++++++++++++++++++

        Dialog

        Title "Password"

        Control StaticText
         Title "Please Type:"

        Control EditText
         Into passw
         Password        ' to see stars instead of letters

        Control OKButton
        Control CancelButton

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
        End Sub
```

PhasType.MBO

```
'********************************************************
'*                                                      *
'*      PhasType.MBO              Edwin, 20.08.98        *
'*                                                      *
'*  This program dispalys customers according to which  *
'*  phase type their connected.                      *
'*                                                      *
'* ++++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required files:                                      *
'*                   MAPBASIC.DEF                        *
'*                    MENU.DEF                              *
'* ++++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required tables:                                      *
'*                   - customer.tab                      *
'*                   - phase.tab                         *
'********************************************************


        include "C:\Program Files\MapInfo\MapBasic\MAPBASIC.DEF"
        include "C:\Program Files\MAPINFO\MAPBASIC\MENU.DEF"

        Global passw as String
        Global MapPath as string

        Declare Sub PhasType

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++*



        Sub PhasType


        Dim  ivar1, ivar2, ivar3 As Integer
        Dim Map_Win_Id              As Integer
        Dim i_lay_type              As SmallInt
        Dim iz, ln                  As SmallInt
        Dim MapName                 As String
        Dim phasety                 As String
        Dim iphase                  As SmallInt
        Dim aRowId                  as Alias
        Dim aphase                  as Alias
        Dim aphaseName              as Alias
        Dim sphaseType(1)    as String
        Dim sphaseName(1)           as String
        Dim iCounter         as Integer


        OnError goto Err_PhasType

' +++++++++++++++++++++++++++ close some toolbars +++++++++++++++++++++++

        Alter ButtonPad "Tools" Hide
        Alter ButtonPad "Drawing" Hide
        Alter ButtonPad "Main" Show Fixed
        Alter ButtonPad "ODBC" Hide


' +++++++++++++++++++++++++++++ close and open map layers +++++++++++++++


        MapName = MapPath +"CUSTOMER.TAB"

        Close All

        Open Table MapName As "Customer" password passw

        Map From Customer
```

```
'++++++++++++++++++++++++++++  Getting window ID +++++++++++++++++++++++

       Map_Win_id = FrontWindow()

'++++++  go out of program if operator does not know password +++++++

       If Map_Win_id = 0 Then
              Exit Sub
       End If

' +++++++++++++Store Data into Array Variable from Table+++++++++++++++

       MapName = MapPath +"phase"
       open table MapName password passw as "phase"

       aRowId="phase.rowid"
       aphase="Phase.PHA_TYPE"
       aPhaseName="Phase.NAME"

       Fetch First from phase              ' cursor to first record
       iCounter=1
       Do While NOT EOT( Phase )
              Redim sPhaseType(iCounter)
              Redim sPhaseName(iCounter)
              if iCounter=1 then
                     sPhaseType(iCounter)=aPhase
                     sPhaseName(iCounter)=aPhaseName
                     iCounter=2
              else
                     if sPhaseType(iCounter-1)<>aPhase then
                            sPhaseType(iCounter)=aPhase
                            sPhaseName(iCounter)=aPhaseName
                            iCounter=iCounter+1
                     end if
              end if
              Fetch Next from Phase
       Loop
       Close Table Phase

' +++++++++++++++++++  Dialog +++++++++++++++++++++++++++++++++++++++++++


       Dialog

       Title "select type:"

       Control StaticText
              Title "select phase type:"
              Position 5, 10

       Control PopUpMenu
              Title From Variable sphaseName
              Value 1
              Position 20,20 Width 60
              Into iphase

       Control OKButton
              Position 20, 40
       Control CancelButton
              Position 65, 40

       If not CommandInfo(CMD_INFO_DLG_OK) Then        'The user just cancelled.
              Exit Sub
       End If

'+++++++++++++++++ creating the right variable ++++++++++++++++++++++++++++


       phasety = sPhaseType(iphase)


'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

'++++++++++++++++++++++++++++++ Shade statements +++++++++++++++++++++++++++
```

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```
        Shade Window Map_Win_Id "Customer"
              with PHA_TYPE Values phasety
              Symbol (34,RED,8)
              default Symbol (34,BLACK,8)

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

'++++++++++++++++++++++++ View Entire Layer ++++++++++++++++++++++++++


        Set Map Window  Map_Win_Id Zoom Entire Layer "Customer"

'+++++++++++++++++++++++++ Legend Statements +++++++++++++++++++++++++

        Set Legend Window Map_Win_Id layer prev
              display on
              shades off
              symbols on
              lines off
              count on
              title "Select Phase Type"
              Font ("MS Sans Serif",0,10,0)
              subtitle "" Font ("MS Sans Serif",0,8,0)
              ascending on
              ranges Font ("MS Sans Serif",0,8,0) "all others"
              display on ,
              sPhaseName(iphase) display on

        Set Window WIN_LEGEND
        Position (1,4) Units "cm"
        Width 6 Units "cm"
        Height 3 Units "cm"

        Open Window Legend

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        Set Window Map_Win_id Max

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

Res_PhasType:
        Exit Sub

Err_PhasType:
        note "PhasType: "+str$(err())+" "+error$()
        Resume Next

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        End Sub
```

PoleCons.MBO

```
'*******************************************************
'*                                                     *
'*      PoleCons.MBO              Edwin, 20.08.98       *
'*                                                     *
'*  This program asks the operator to type in the month *
'*  when the Pole was constructed.                     *
'*                                                     *
'* +++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required files:                                     *
'*                 MAPBASIC.DEF                        *
'*                   MENU.DEF                            *
'* +++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required tables:                                    *
'*                 - poles.tab                         *
'*                 -                                   *
'*******************************************************

        include "C:\Program Files\MapInfo\MapBasic\MAPBASIC.DEF"
        include "C:\Program Files\MAPINFO\MAPBASIC\MENU.DEF"

        Global passw as String
        Global MapPath as string

        Declare Sub PoleCons

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++*

        Sub PoleCons


        Dim  ivar1, ivar2, ivar3 As Integer
        Dim vyear                     As SmallInt
        Dim vyear3                    As SmallInt
        Dim vmonth                    As SmallInt
        Dim vmonth2          As SmallInt
        Dim stvar2                    As String
        Dim stvar3                    As String
        Dim styear, styear3           As String
        Dim stmonth, stmonth3         As String
        Dim vmonth3          As SmallInt
        Dim Map_Win_Id                As Integer
        Dim i_lay_type                As SmallInt
        Dim iz, ln                    As SmallInt
        Dim MapName                   As String

        OnError goto Err_PoleCons

' +++++++++++++++++++++++++++ close some toolbars +++++++++++++++++++++

        Alter ButtonPad "Tools" Hide
        Alter ButtonPad "Drawing" Hide
        Alter ButtonPad "Main" Show Fixed
        Alter ButtonPad "ODBC" Hide


' +++++++++++++++++++++++++++ close and open map layers +++++++++++++++++

        MapName = MapPath +"POLES.TAB"

        Close All

        Open Table MapName As "Poles" Password passw

        Map From Poles


'+++++++++++++++++++++++++++++  Getting window ID +++++++++++++++++++++++
```

```
        Map_Win_id = FrontWindow()

'++++++  go out of program if operator does not know password +++++++

        If Map_Win_id = 0 Then
                Exit Sub
        End If


' +++++++++++++++++++  Dialog ++++++++++++++++++++++++++++++++++++++++++


        Dialog

        Title "Poles constructed in:"

        Control StaticText
                Title "select year:"
                Position 5, 10

        Control EditText
                Position 35, 20 Width 25
                Value "----"
                Into styear

        Control StaticText
                Title "select month:"
                Position 80, 10

        Control PopUpMenu
                Title "01;02;03;04;05;06;07;08;09;10;11;12"
                Position 80, 20 Width 30
                Value 1
                Into vmonth

        Control OKButton
                Position 25, 40
        Control CancelButton
                Position 65, 40

        If not CommandInfo(CMD_INFO_DLG_OK) Then        'The user just cancelled.
                Exit Sub
        End If

'+++++++++++++++++++++++ Calculating year and month +++++++++++++++++++++

        vyear = Val(styear)
        vmonth3 = vmonth + 1

        IF vmonth3 < 10 Then
                stmonth3 = "0" + Str$(vmonth3)
                styear3 = styear

        ElseIf vmonth3 = 13 Then        'handling month "December"
                stmonth3 = "01"         'the upper month will be January
                vyear3 = vyear + 1      'of next year, which is current year
                styear3 = Str$(vyear3)  'plus 1
        Else
                stmonth3 = Str$(vmonth3)
                styear3 = styear
        End If

        If vmonth < 10 Then
                stmonth = "0" + Str$(vmonth)
        Else
                stmonth = Str$(vmonth)
        End If

        stvar2 = styear+stmonth+"01"
        stvar3 = styear3+stmonth3+"01"
        ivar2 = Val(stvar2)
        ivar3 = Val(stvar3)
```

```
'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

'++++++++++++++++++++++++ Shade statements +++++++++++++++++++++++++++

        Shade Window Map_Win_Id "Poles" with CONST_DATE
                Ranges ivar2:ivar3
                Symbol (34,RED,8)
                default Symbol (34,BLACK,8)

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

'++++++++++++++++++++++++ View Entire Layer +++++++++++++++++++++++++++


        Set Map Window  Map_Win_Id Zoom Entire Layer "Poles"

'++++++++++++++++++++++++ Legend Statements +++++++++++++++++++++++++++

        Set Legend Window Map_Win_Id layer prev
                display on
                shades off
                symbols on
                lines off
                count on


                title "Constructed in defined month"
                Font ("MS Sans Serif",0,10,0)
                subtitle "" Font ("MS Sans Serif",0,8,0)
                ascending on
                ranges Font ("MS Sans Serif",0,8,0) "all others"
                display on ,
                "constructed" display on

        Set Window WIN_LEGEND
        Position (1,4) Units "cm"
        Width 6 Units "cm"
        Height 3 Units "cm"

        Open Window Legend

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        Set Window Map_Win_id Max

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

Res_PoleCons:
        Exit Sub

Err_PoleCons:
        note "PoleCons: "+str$(err())+" "+error$()
        Resume Next

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        End Sub
```

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PoleType.MBO

```
'********************************************************
'*                                                      *
'*      PoleType.MBO                  Edwin, 20.08.98    *
'*                                                      *
'*   This program asks the operator to type in the month *
'*   when the Pole was constructed.                     *
'*                                                      *
'* ++++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required files:                                      *
'*                 MAPBASIC.DEF                         *
'*                   MENU.DEF                             *
'* ++++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required tables:                                     *
'*                   - poles.tab                        *
'*                   - pole.tab                           *
'********************************************************

        include "C:\Program Files\MapInfo\MapBasic\MAPBASIC.DEF"
        include "C:\Program Files\MAPINFO\MAPBASIC\MENU.DEF"

        Global passw as String
        Global MapPath as string

        Declare Sub PoleType

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++*

        Sub PoleType


        Dim  ivar1, ivar2, ivar3 As Integer
        Dim Map_Win_Id              As Integer
        Dim i_lay_type              As SmallInt
        Dim iz, ln                  As SmallInt
        Dim MapName                 As String
        Dim polety                  As String
        Dim ipole                   As SmallInt
        Dim aRowId                  as Alias
        Dim aPole                   as Alias
        Dim aPoleName               as Alias
        Dim sPoleType(1)            as String
        Dim sPoleName(1)            as String
        Dim iCounter        as Integer

        OnError goto Err_PoleType

' ++++++++++++++++++++++++++ close some toolbars ++++++++++++++++++++++

        Alter ButtonPad "Tools" Hide
        Alter ButtonPad "Drawing" Hide
        Alter ButtonPad "Main" Show Fixed
        Alter ButtonPad "ODBC" Hide


' ++++++++++++++++++++++++++ close and open map layers ++++++++++++++++

        Close All



'++++++++++++++++++++++++++++  Getting window ID ++++++++++++++++++++++

        Map_Win_id = FrontWindow()

'++++++++  go out of program if operator does not know password +++++++

        'If Map_Win_id = 0 Then
        '       Exit Sub
        'End If
```

```
' +++++++++++Store Data into Array Variable ffrom Table+++++++++++++

        MapName = MapPath +"Poles"
        open table MapName Password passw as "Pole"

        aRowId="Pole.rowid"
        aPole="Pole.PO_CODE"
        aPoleName="Pole.PO_TYPE"

        Fetch First from Pole            ' cursor to first record
        iCounter=1
        Do While NOT EOT( Pole )
                Redim sPoleType(iCounter)
                Redim sPoleName(iCounter)
                if iCounter=1 then
                        sPoleType(iCounter)=aPole
                        sPoleName(iCounter)=aPoleName
                        iCounter=2
                else
                        if sPoleType(iCounter-1)<>aPole then
                                sPoleType(iCounter)=aPole
                                sPoleName(iCounter)=aPoleName
                                iCounter=iCounter+1
                        end if
                end if
                Fetch Next from Pole
        Loop
        Close Table Pole


' +++++++++++++++++++  Dialog ++++++++++++++++++++++++++++++++++++++++


        Dialog

        Title "select type:"

        Control StaticText
                Title "select pole type:"
                Position 5, 10

        Control PopUpMenu
                Title From Variable sPoleName
                Value 1
                Position 20,20 Width 60
                Into ipole


        Control OKButton
                Position 20, 40
        Control CancelButton
                Position 65, 40

        If not CommandInfo(CMD_INFO_DLG_OK) Then        'The user just cancelled.
                Exit Sub
        End If

'+++++++++++++++ creating the right variable +++++++++++++++++++++++++++


        polety = sPoleType(ipole)


'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++


'+++++++++++++++++++++++++++++++++++++Open table statement+++++++++++++++++++++++++++++++++++++++++

        MapName = MapPath +"POLES.TAB"


        Open Table MapName As "Poles" Password passw
```

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```
        Map From Poles

'+++++++++++++++++++++++++ Shade statements +++++++++++++++++++++++++++

        Shade Window Map_Win_Id "Poles"
                with PO_CODE Values polety
                Symbol (34,RED,8)
                default Symbol (34,BLACK,8)

'+++++++++++++++++++++++++ View Entire Layer ++++++++++++++++++++++++++++


        Set Map Window  Map_Win_Id Zoom Entire Layer "Poles"

'+++++++++++++++++++++++++ Legend Statements +++++++++++++++++++++++++++

        Set Legend Window Map_Win_Id layer prev
                display on
                shades off
                symbols on
                lines off
                count on
                title "Select Pole Type"
                Font ("MS Sans Serif",0,10,0)
                subtitle "" Font ("MS Sans Serif",0,8,0)
                ascending on
                ranges Font ("MS Sans Serif",0,8,0) "all others"
                display on ,
                sPoleName(ipole) display on

        Set Window WIN_LEGEND
        Position (1,4) Units "cm"
        Width 6 Units "cm"
        Height 3 Units "cm"

        Open Window Legend

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        Set Window Map_Win_id Max

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

Res_PoleType:
        Exit Sub

Err_PoleType:
        note "PoleType: "+str$(err())+" "+error$()
        Resume Next

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        End Sub
```

StreLght.MBO

```
'*****************************************************
'*                                                   *
'*      Strelght.MBO              Edwin, 20.08.98     *
'*                                                   *
'*  This program displays the different types of Street *
'*  Lights in use.                                   *
'*                                                   *
'*  ++++++++++++++++++++++++++++++++++++++++++++++++ *
'*  required files:                                  *
'*                  MAPBASIC.DEF                      *
'*                   MENU.DEF                          *
'*  ++++++++++++++++++++++++++++++++++++++++++++++++ *
'*  required tables:                                 *
'*                   - poles.tab                      *
'*                   - st_type.tab                    *
'*****************************************************

        include "C:\Program Files\MapInfo\MapBasic\MAPBASIC.DEF"
        include "C:\Program Files\MAPINFO\MAPBASIC\MENU.DEF"

        Global passw as String
        Global MapPath as string

        Declare Sub Strelght

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++*

        Sub Strelght

        Dim  ivar1, ivar2, ivar3 As Integer
        Dim Map_Win_Id              as Integer
        Dim aRowID                  as Alias
        Dim aSt_Type          as Alias
        Dim aSt_TypeName            as Alias
        Dim sSt_TypeType(1)         as String
        Dim sSt_TypeName(1)         as String
        Dim tablename               as String
        Dim iCounter          as Integer
        Dim i_lay_type              As SmallInt
        Dim iz, ln                  As SmallInt
        Dim MapName                 As String

        OnError goto Err_Strelght

' +++++++++++++++++++++++++++ close some toolbars +++++++++++++++++++++

        Alter ButtonPad "Tools" Hide
        Alter ButtonPad "Drawing" Hide
        Alter ButtonPad "Main" Show Fixed
        Alter ButtonPad "ODBC" Hide


' +++++++++++++++++++++++++++++ close and open map layers +++++++++++++++++

        MapName = MapPath +"POLES.TAB"

        Close All

        Open Table MapName As "Poles" Interactive

        Map From Poles


'+++++++++++++++++++++++++++++++  Getting window ID +++++++++++++++++++++++++++

        Map_Win_id = FrontWindow()

'++++++  go out of program if operator does not know password ++++++++
```

```
        If Map_Win_id = 0 Then
                Exit Sub
        End If


'+++++++++++++++++++++++++ Shade statements +++++++++++++++++++++++++++
        Set Map Redraw off

        Shade Window Map_Win_Id "Poles" with ST_LIGHT
                Values
                "0" Symbol (34,BLACK,8),
                "00" Symbol (34,BLACK,8),
                "01" Symbol (34,RED,8),
                "02" Symbol (34,BLUE,8),
                "03" Symbol (34,16711935,8),
                "04" Symbol (34,YELLOW,8),
                "05" Symbol (34,32768,8),
                "06" Symbol (34,65280,8),
                "07" Symbol (34,16744576,8)
                default Symbol (34,BLACK,8)


'++++++++++++++++++++++++++ View Entire Layer +++++++++++++++++++++++++++


        Set Map Window Map_Win_Id Zoom Entire Layer "Poles"

'++++++++++++++++++++++++++ Legend statements +++++++++++++++++++++++++++

        Set Legend Window Map_Win_Id layer prev display on shades off symbols on
                lines off count on title "Streetlight types" Font ("MS Sans Serif",0,10,0)
                subtitle "" Font ("MS Sans Serif",0,8,0)
                Ascending On
                Ranges Font ("MS Sans Serif",0,8,0)
                "all others" display on,
                "0 = no light" display on,
                "00 = unknown" display on,
                "01 = BETA79" display on,
                "02 = 1 x 20W" display on,
                "03 = 1 x 40W" display on,
                "04 = Stradalux" display on,
                "05 = Alpha 3" display on,
                "06 = Alpha 8" display on,
                "07 = Goughlight 600" display on

        Set Window WIN_LEGEND
        Position (1,4) Units "cm"
        Width 6 Units "cm"
        Height 8 Units "cm"

        set Map Redraw On
        Open Window Legend

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        Set Window Map_Win_id Max

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

Res_Strelght:
        Exit Sub

Err_Strelght:
        note "Strelght: "+str$(err())+" "+error$()
        Resume Next

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        End Sub
```

TEPB0898.MBX

```
[LINK]
Application=TEPB0898.MBX
Module=TEPBMAIN.MBO
Module=CrMePole.MBO
Module=CrMeLine.MBO
Module=CrMeCust.MBO
Module=CrMeTran.MBO
Module=CrMeMetr.MBO
Module=LocaPole.MBO
Module=PoleCons.MBO
Module=PoleType.MBO
Module=StreLght.MBO
Module=Lin_Cut2.MBO
Module=LocaCust.MBO
Module=LocCustM.MBO
Module=LocCustL.MBO
Module=LocCustP.MBO
Module=CustCond.MBO
Module=PhasType.MBO
Module=CustClas.MBO
Module=AllCclas.MBO
Module=AllPType.MBO
Module=FeedersL.MBO
Module=LinesVol.MBO
Module=LineProt.MBO
Module=InsMonT.MBO
Module=LocaTran.MBO
Module=NbConsTr.MBO
Module=MaxPowTr.MBO
Module=AgeTrans.MBO
Module=TypInsTr.MBO
Module=HVTypeTr.MBO
Module=LVTypeTr.MBO
Module=ConsTran.MBO
Module=InsMonM.MBO
Module=LocaMetr.MBO
Module=TypeMetr.MBO
Module=LocMetTp.MBO
Module=MetNoCon.MBO
Module=Password.MBO
```

TEPBMAIN.MBO

```
'*********************************************************
'*                                                       *
'*      TEPBMAIN.MBO                 Edwin, 20.08.98      *
'*                                                       *
'*  This program contains the main module declaring the  *
'*  following sub-programs  and calling the programs of  *
'*  the pull down menus.                                 *
'*  ++++++++++++++++++++++++++++++++++++++++++++++++++++  *
'*  required files:                                      *
'*                                                       *
'*  ++++++++++++++++++++++++++++++++++++++++++++++++++++  *
'*  required tables:                                     *
'*                                                       *
'*********************************************************
        Declare Sub Password
        Declare Sub CrMePole
        Declare Sub CrMeCust
        Declare Sub CrMeLine
        Declare Sub CrMeTran
        Declare Sub CrMeMetr
        Declare Sub Main
        Declare Sub CutaLine

Global passw as String
Global MapPath as string

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++*

        Sub Main

  MapPath="D:\TEPB\" '################# If you want to move your data, change this line

' +++++++++++++++++++++++++++++ close some toolbars +++++++++++++++++++++

        Alter ButtonPad "Tools" Hide
        Alter ButtonPad "Drawing" Hide
        Alter ButtonPad "Main" Show Fixed
        Alter ButtonPad "ODBC" Hide


        Call Password
        Call CrMePole
        Call CrMeLine
        Call CrMeCust
        Call CrMeTran
        Call CrMeMetr



        End Sub
```

TypeMetr.MBO

```
'********************************************************
'*                                                      *
'*      TypeMetr.MBO              Paula, 24.08.98        *
'*                                                      *
'*  This program displays The Meters by classe of       *
'*  different meter type.                                *
'*                                                      *
'* ++++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required files:                                       *
'*              MAPBASIC.DEF                             *
'*              MENU.DEF                                 *
'* ++++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required tables:                                      *
'*                  - Customer.tab                       *
'*                                                      *
'********************************************************


        include "C:\program files\mapinfo\mapbasic\MENU.DEF"
        include "C:\program files\mapinfo\mapbasic\MAPBASIC.DEF"

        Global passw as String
        Global MapPath as string

        Declare Sub TypeMetr

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        Sub TypeMetr


        Dim Map_Win_Id      As integer
        Dim i_lay_type      As SmallInt
        Dim iz, ln          As SmallInt
        Dim MapName         As String


'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

OnError goto Err_Meter_Ty

'+++++++++++++++++++++++++++open Table statement+++++++++++++++++++++++++++++++++++++++++++++++++

        MapName = MapPath +"customer.tab"
        open table MapName Password passw as customer

        map from customer Max



        Map_Win_id= FrontWindow()

'+++++++++++++++++++++++++++ Shade statements +++++++++++++++++++++++++++

        Shade Window Map_Win_Id "Customer" with MET_TYPE values
                "01" Symbol (47,16711680,12,"MapInfo Real Estate",257,0) ,
                "02" Symbol (47,65280,12,"MapInfo Real Estate",257,0) ,
                "03" Symbol (47,255,12,"MapInfo Real Estate",257,0) ,
                "04" Symbol (47,16711935,12,"MapInfo Real Estate",257,0) ,
                "05" Symbol (47,16776960,12,"MapInfo Real Estate",257,0)
                default Symbol (47,0,12,"MapInfo Real Estate",257,0)

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

'++++++++++++++++++++++++++++ Legend statements ++++++++++++++++++++++++++++

        Set Legend Window Map_Win_Id layer prev display on shades off symbols on
                lines off count on title "Meter types"
                Font ("MS Sans Serif",0,10,0) subtitle ""
```

99

```
                Font ("MS Sans Serif",0,8,0) ascending on ranges
                Font ("MS Sans Serif",0,8,0)
                "all others" display on ,
                "01 - 10" display on ,
                "11 - 20" display on ,
                "21 - 30" display on ,
                "31 - 40" display on ,
                "41 - 50" display on ,
                "51 - 58" display on

        Set Window WIN_LEGEND
        Position (1,4) Units "cm"
        Width 5 Units "cm"
        Height 5 Units "cm"

        Open Window Legend

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Res_Meter_Ty:
        Exit Sub

Err_Meter_Ty:
        note "Meter_Ty: "+str$(err())+" "+error$()
        Resume Res_Meter_Ty

End Sub
```

TypInsTr.MBO

```
'**********************************************************
'*                                                        *
'*      TypInsTr.MBO                   Paula, 24.08.98     *
'*                                                        *
'*   This program displays The Transformers by classe of  *
'*   different type .                                      *
'*                                                        *
'*  ++++++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required files:                                        *
'*             MAPBASIC.DEF                                *
'*             MENU.DEF                 ·                  *
'*  ++++++++++++++++++++++++++++++++++++++++++++++++++++++ *
'* required tables:                                       *
'*                     - Tralist.tab                      *
'*                     - Location.tab                     *
'**********************************************************

        include "C:\Program Files\mapinfo\mapbasic\MAPBASIC.DEF"
        include "C:\Program Files\MAPINFO\MAPBASIC\MENU.DEF"


        Global passw as String
        Global MapPath as string


        Declare Sub TypInsTr

'++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
        Sub TypInsTr



        Dim Map_Win_Id        As Integer
        Dim iz, ln            As SmallInt
        Dim i_lay_type        As SmallInt
        Dim MapName           As String

'  +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

        OnError goto Err_Inst_Typ

'  +++++++++++++++++++ Open Table statement +++++++++++++++++++++++++++++++

        MapName = MapPath +"Tralist.tab"
        open table MapName Password passw As Tralist

        MapName = MapPath +"Location.tab"
        open table MapName Password passw as Location

        select * from Tralist,Location Where Tralist.LOCAT_NO=Location.LOCAT_NO
                     into Transformers NoSelect

        Map From Transformers Max


'++++++++++++++++++++++++++++++++Get the Window ID +++++++++++++++++++++++++++++++++++++++

        Map_Win_id= FrontWindow()




'++++++++++++++++++++++++++++++++ Shade statements ++++++++++++++++++++++++++++++++

        Shade Window Map_Win_Id "Transformers" with PO_PA_ST Ranges
             0:1 Symbol (37,RED,12,"MapInfo Symbols",257,0) ,
             1:2 Symbol (37,BLUE,12,"MapInfo Symbols",257,0) ,
             2:3 Symbol (37,GREEN,12,"MapInfo Symbols",257,0)
             default Symbol (37,0,12,"MapInfo Symbols",257,0)
```

```
'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

'++++++++++++++++++++++++ Legend statements +++++++++++++++++++++++++

        Set Legend Window Map_Win_Id layer prev display on shades off symbols on
            lines off count on title "Installation of transformer"
            Font ("MS Sans Serif",0,10,0) subtitle ""
            Font ("MS Sans Serif",0,8,0) ascending on ranges
            Font ("MS Sans Serif",0,8,0)
            "other" display on ,
            "on pole" display on ,
            "on pad" display on ,
            "in stock" display on



        Set Window WIN_LEGEND
        Position (1,4) Units "cm"
        Width 5 Units "cm"
        Height 4 Units "cm"

        Open Window Legend

'+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Res_Inst_Typ:
        Exit Sub

Err_Inst_Typ:
        note "Inst_Typ: "+str$(err())+" "+error$()
        Resume Res_Inst_Typ

end sub
```