

Project Development Phase

Sprint-04

Date	15 November 2022
Team ID	PNT2022TMID15221
Project Name	Machine Learning-Based Predictive Analytics for Aircraft Engine

AIRCRAFT ENGINE ANALAYSIS:

```
Imports Microsoft.VisualBasic Imports
System
Imports System.Data Imports
System.Data.Common Imports
System.Data.OleDb
Imports System.Configuration
Imports System.Collections.Specialized Imports
SampleApps.ValGnES.GlobalVariables Imports
System.Web.HttpContext
Imports System.Drawing
Imports System.IO
Imports System.Data.OracleClient
Imports System.Web
Imports System.Web.UI.WebControls
Imports System.Net.Sockets Imports
System.Net
Imports System.Configuration.ConfigurationManager
```

```
Namespace GL
    Public Class DAL
        Public Enum Transaction None
            Start
            Finish
        End Enum

        Public Enum QueryType
            SelectQuery
            InsertQuery
            UpdateQuery
            DeleteQuery Adapter
            UpdateDeleteAdapter
            spSelect
            spInsert
            spUpdate
            spDelete
        End Enum
    End Class
End Namespace
```

```

Public Enum Return Type None
    Scalar Field
    Collection
    Sortedlist
    ListItem
    Dataset
    DataRow
    RefCursor
    spCollection
    spSortedlist
    spDataset
    spOutPut
    spListItem
End Enum

```

```

#Region "Get Connection String From Session"

```

```

    Public Shared Function ConString() As String Dim
        ConnectionString As String = ""
        'ConnectionString = ConfigurationSettings.AppSettings("ConnStr") '
        ConnectionString =
System.Configuration.ConfigurationManager.AppSettings("tamConnectionString1") ConnectionString =
System.Configuration.ConfigurationManager.ConnectionStrings("CString").ConnectionString

```

```

        'ConnectionString = "Provider=SQLOLEDB;Data Source=(local);User ID=sa;pwd=sa;Initial
Catalog=GLPGDMDDB"
        'ConnectionString = "Provider=Microsoft.Jet.OLEDB.4.0;Data Source=C:\tamil\tam.mdb"
        'ConnectionString = "Provider=Microsoft.Jet.OLEDB.4.0;Data Source=E:\tam.mdb"
        'ConnectionString = "Provider=Microsoft.Jet.OLEDB.6.0;Data Source=E:\tam.mdb"

        'ConnectionString = "Provider=SQLOLEDB;Data Source=(local);User ID=sa;pwd=sa;Initial
Catalog=pubs"
        Return ConnectionString End
    Function
#End Region

```

```

#Region "Get Connection Instance"

```

```

    Protected Shared Function CreateOleDbConnection(ByVal provFlag As Integer) As
ConObject
        Dim conObj As ConObject = New ConObject
        Dim Cmd As OleDbCommand = New
OleDbCommand
        Dim Conn As OleDbConnection = New
OleDbConnection Try
            Dim ConnString As String = ConString() Dim
ErrMsg As String = ""
            Conn = Nothing
            If provFlag = 0 Then
                Conn = New OleDbConnection(ConnString)
            Else
                Dim provInd As Integer =
ConnString.ToLower().IndexOf("provider=") If provInd
<> -1 Then
                    ConnString = "Provider=OraOLEDB.Oracle.1" &
ConnString.Substring(ConnString.ToLower().IndexOf(";", provInd))

```

```

        End If
        Conn = New OleDbConnection(ConnString) End
    If
    If Conn Is Nothing Then
        Throw New Exception("Error in connection") End If
    Conn.Open()
    Cmd.Connection = Conn
    Return New ConObject(Cmd, Conn, ErrMsg)
Catch ex As Exception
    Return New ConObject(Cmd, Conn, ex.Message)
End Try
End Function
#End Region

#Region "ExecuteQuery"
Public Overloads Shared Sub ExecuteQuery(ByVal QueryStr() As String, Optional ByVal
TransStart As Transaction = Transaction.None, Optional ByVal TransFinish As Transaction =
Transaction.None, Optional ByVal conFlag As Integer = 0, Optional ByVal oracleFlag As Integer = 0)
    Dim conObj As ConObject = GetConnection(conFlag, oracleFlag) Dim
    ErrMsg As String = conObj.ErrMsg
    If ErrMsg <> "" Then
        Throw New Exception(ErrMsg) : Exit Sub
    ElseIf conObj.Conn Is Nothing And conObj.ConnO Is Nothing Then
        Throw New Exception("Oracle Connection can not be Established.Please Check
Network/ Oracle Connectivity") : Exit Sub
    End If
    Dim QryStr As String Try
        If TransStart = Transaction.Start Then If Not
            conObj.Cmd Is Nothing Then
                conObj.Cmd.Transaction =
conObj.Cmd.Connection.BeginTransaction
            Else
                conObj.CmdO.Transaction =
conObj.CmdO.Connection.BeginTransaction
            End If
        End If
        If QueryStr.Length > 0 Then For
            Each QryStr In QueryStr
                If Not QryStr = "" Then
                    If Not conObj.Cmd Is Nothing Then
                        conObj.Cmd.CommandText = QryStr
                        conObj.Cmd.ExecuteNonQuery()
                    Else
                        conObj.CmdO.CommandText = QryStr
                        conObj.CmdO.ExecuteNonQuery()
                    End If
                End If
            Next End If
        End If
        If TransFinish = Transaction.Finish Then If Not
            conObj.Cmd Is Nothing Then
                conObj.Cmd.Transaction.Commit()
            Else
                conObj.CmdO.Transaction.Commit()
            End If
        End If
    Catch en As OleDbException HttpContext.Current.Session("ErrMsg") =
en.ErrorCode g_Save_Failed = ""

```

```

        If HttpContext.Current.Session("ErrMsg") = -2147217900 Then g_Save_Failed =
            "Attempt to Save Record Failed due to One or more
errors occurred during " + _
            "processing of command. ORA-
            00933 SQL command not

        Else

            g_Save_Failed = "Attempt to Save Record Failed due to "
            g_Save_Failed = g_Save_Failed &
HttpContext.Current.Session("ErrMsg") End If

        If TransStart Then
            If Not conObj.Cmd Is Nothing Then
                conObj.Cmd.Transaction.Rollback()
            ElseIf Not conObj.CmdO Is Nothing Then
                conObj.CmdO.Transaction.Rollback()
            End If
        End If
        Throw New Exception(en.ToString)

    Finally
        DestroyConObj(conObj)
    End Try
End Sub
#End Region

#Region "DestroyConObj"
Protected Shared Sub DestroyConObj(ByVal argConObj As ConObject) If
    Not argConObj Is Nothing Then
        If Not argConObj.Cmd Is Nothing Then Try
            argConObj.Cmd.Dispose() Catch
                ex As Exception

            End Try
        End If

        If Not argConObj.Conn Is Nothing Then
            Try
                If Not argConObj.Conn.State = ConnectionState.Closed Then
                    argConObj.Conn.Close()
                End If argConObj.Conn.Dispose()
            Catch ex As Exception

            End Try
        End If
    End If
End Sub
#End Region

Public Shared Function GetConnection(Optional ByVal oracleFlag As Integer = 0, Optional
ByVal oracleClientFlag As Integer = 0) As ConObject
    Dim conObj As ConObject = New ConObject()
    Dim ErrMsg As String = ""
    Try
        If oracleClientFlag = 0 Then
            conObj = CreateOleDbConnection(oracleFlag)
        Else
            ' conObj = CreateOracleConnection()
        End If
    End If

```

```

Catch en As Exception
    If en.Message.Contains("ORA-12560") = True Or
en.Message.Contains("ORA-12571") = True Then
        ErrMsg = "Oracle is not Connected.Either Network is disconnected or
Oracle Listener Problem!(" & en.Message & ")"
    ElseIf en.Message.Contains("The SqlConnection property has not been
initialized") = True Or en.Message.ToUpper.Contains("TIMEOUT") = True Then
        Try
            For I As Integer = 0 To 1 Try
                If oracleClientFlag = 0 Then
                    conObj = CreateOleDbConnection(oracleFlag)
                Else
                    ' conObj = CreateOracleConnection()
                End If
            Catch ex1 As OleDbException
                If ex1.Message.Contains("ORA-12560") = True Or
ex1.Message.Contains("ORA-12571") = True Then
                    ErrMsg = "Oracle is not Connected.Either Network is
disconnected or Oracle Listener Problem!(" & ex1.Message & ")"
                ElseIf ex1.Message.ToUpper.Contains("TIMEOUT") = True
Then
                    ErrMsg = "Oracle
Connection Timeout"
                Else
                    ErrMsg =
                    ex1.Message
                End If
            Catch ex1 As Exception
                ErrMsg = ex1.Message
            End Try
        Next
    Catch ex As OleDbException
        If ex.Message.Contains("ORA-12560") = True Or
ex.Message.Contains("ORA-12571") = True Then
            ErrMsg = "Oracle is not Connected.Either Network is disconnected
or Oracle Listener Problem!(" & en.Message & ")"
        ElseIf ex.Message.ToUpper.Contains("TIMEOUT") = True Then ErrMsg
= "Oracle Connection Timeout"
    Else
        ErrMsg = ex.Message
    End If
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```

s                                     End Try
a
g                                     ErrMsg = en.Message
e

        End If End
    Try Return
    conObj
End Function

```

#Region "ExecuteQueryForReturnType"

```

Public Overloads Shared Function ExecuteQuery(ByVal QueryStr As String, ByVal
QryType As QueryType, Optional ByVal RetType As ReturnType = ReturnType.None, Optional
ByVal TransStart As Transaction = Transaction.None, Optional ByVal TransFinish As Transaction =
Transaction.None, Optional ByVal TName As String = Nothing, Optional ByVal key As Boolean =
False, Optional ByVal ds As DataSet = Nothing, Optional ByVal conFlag As Integer = 0, Optional
ByVal oracleFlag As Integer = 0) As Object
    Dim Sortedorder As Boolean = key
    Dim conObj As ConObject = Nothing

```

```

Dim ErrMsg As String
Try
    conObj = GetConnection(conFlag, oracleFlag) ErrMsg
    = conObj.ErrMsg
    If ErrMsg <> "" Then
        Throw New Exception(ErrMsg) : Exit Function
    ElseIf conObj.Conn Is Nothing And conObj.ConnO Is Nothing Then
        Throw New Exception("Oracle Connection can not be
Established.Please Check Network/ Oracle Connectivity") : Exit Function End If
    If TransStart = Transaction.Start Then If Not
        conObj.Cmd Is Nothing Then
            conObj.Cmd.Transaction = conObj.Conn.BeginTransaction
        ElseIf Not conObj.CmdO Is Nothing Then
            conObj.CmdO.Transaction = conObj.ConnO.BeginTransaction End If
    End If
    Select Case QryType
        Case QueryType.SelectQuery If
            QueryStr = "" Then
                Exit Select
            Else
                If Not conObj.Cmd Is Nothing Then
                    conObj.Cmd.CommandText = QueryStr
                    Return (ExecuteSelect(RetType, TName,
conObj.Cmd))
                ElseIf Not conObj.CmdO Is Nothing Then
                    conObj.CmdO.CommandText = QueryStr
                    Return (ExecuteSelect(RetType, TName,
conObj.CmdO)) End If
            End If
        Case QueryType.InsertQuery, QueryType.UpdateQuery, QueryType.DeleteQuery
            If Not
                conObj.
                Cmd Is
                Nothing
                Then
                    conObj.
                    Cmd.Co
                    mmand
                    Text =
                    QuerySt
                    r
                    conObj.
                    Cmd.Ex
                    ecuteNo
                    nQuery(
                    )
                ElseIf Not
                    conObj.
                    CmdO
                    Is
                    Nothing
                    Then
                        conObj.
                        CmdO.C
                        ommand
                        Text =
                        QueryStr
                        conObj.
                        CmdO.E
                        xecuteN
                        onQuery
                        ()
                    End If
                Case QueryType.Adapter
                    If Not conObj.Cmd Is Nothing Then
                        Dim adapter As New
                        OleDbDataAdapter(QueryStr,
conObj.Conn) adapter.Update(ds,
ds.Tables(0).TableName)

```

```

        adapter.Dispose()
Elseif Not
    conObj.
    CmdO
    Is
    Nothing
    Then ds
    = New
    DataSet
    Dim adapter As New
    OracleDataAdapter(QueryStr,

        adapter.Update(ds,
        ds.Tables(0).TableName)
        adapter.Dispose()
End If
Case
    Que
    ryTy
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    Que
    ryStr
    = ""
    The
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            en
            ds
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            Dat
            aS
            et
            Dim adapter As New
            OleDbDataAdapter("",
            conObj.Conn) adapter.Update(ds)
            adapter.Dispose()
        Elseif Not
            conObj.C
            mdO Is
            Nothing
            Then ds
            = New
            DataSet
            Dim adapter As New
            OracleDataAdapter("",
            conObj.ConnO)
            adapter.Update(ds)

```



```

        adapter.Dispose() End
    If
    End If
End Select
If TransFinish = Transaction.Finish Then
    conObj.Cmd.Transaction.Commit()
End If
Catch en As OleDbException

    If TransStart Then
        If Not conObj.Cmd Is Nothing Then
            conObj.Cmd.Transaction.Rollback()
        ElseIf Not conObj.CmdO Is Nothing Then
            conObj.CmdO.Transaction.Rollback()
        End If
    End If Throw
en
Finally
    DestroyConObj(conObj)
End Try
Return Nothing
End Function
#End Region

Public Overloads Shared Function GetRecordsetFromSQL(ByRef sSQL As String) As
Data.DataTable
    'Public Function GetRecordsetFromSQL(ByRef sSQL As String) As Data.DataTable
    Dim oDT As New Data.DataTable
    Dim oCmd As OleDbCommand
    Dim oDA As OleDbDataAdapter
    Dim DBConn As
OleDbConnection
    ' DBConn = New OleDbConnection("Provider=SQLOLEDB;Data Source=(local);User
ID=sa;pwd=sa;Initial Catalog=pubs")
    DBConn = New OleDbConnection("Provider=Microsoft.Jet.OLEDB.4.0;Data
Source=C:\tam\lam.mdb")

    oDA =
    New
    OleDbD
    ataAdap
    ter(sSQ
ERR.RAISE
L,
DBConn
) 'Dim
conObj
As
ConObj
ect =
Nothing
'conObj
=
GetCon
nection(
0, 0)
'If conObj Is Nothing Then
'    'As got the error in HRESULT - COM
exception while executing

'    'In order to achieve the same functionality
in ported as like
baseline...introduced VB6.0 interop to raise the error message to COM '
    'ManagedCOMError.GetManagedErrorInfo(vbObjectError +
ppErrorCodes.ppDALErrNoOpenConnection, "ProPrimaDAL.DataAccess.GetRecordsetFromSQL", "No
Connection Open")
    '    'Err.Raise(vbObjectError + ppErrorCodes.ppDALErrNoOpenConnection,
"ProPrimaDAL.DataAccess.GetRecordsetFromSQL", "No Connection Open")
    '    'PGC Migration ID:002 to fix warning Null Reference Exception '
    GetRecordsetFromSQL = Nothing

```

```
'Else
'      conObj.Cmd.Transaction = conObj.Conn.BeginTransaction '
      oCmd = New OleDbCommand(sSQL, conObj.Conn)

'      '      Dim adapter As New OleDbDataAdapter(QueryStr, conObj.Conn) '
oCmd.CommandType = Data.CommandType.Text
' oDA = New OleDbDataAdapter(oCmd)
oDA.Fill(oDT)
'      oCmd.Dispose()
oCmd = Nothing
```

```

oDA = Nothing
GetRecordsetFromSQL =
oDT ' End If
End Function
Public Overloads Shared Function UpdateData(ByVal dt As DataTable, ByVal TableName
As String) As Boolean
Dim oCmd As OleDbCommand = Nothing
Dim oDataAdap As OleDbDataAdapter = Nothing
Dim oCmdBuilder As OleDbCommandBuilder = Nothing
'Dim oDA As OleDbDataAdapter
Dim DBConn As OleDbConnection
DBConn = New OleDbConnection("Provider=SQLOLEDB;Data Source=(local);User
ID=sa;pwd=sa;Initial Catalog=pubs")
!*****

' If moConnection Is Nothing Then
'As got the error in HRESULT - COM exception while executing ERR.Raise 'In
order to achieve the same functionality in ported as like
baseline...introduced VB6.0 interop to raise the error message to COM
'ManagedCOMError.GetManagedErrorInfo(vbObjectError +
ppErrorCodes.ppDALErrNoOpenConnection, "ProPrimaDAL.DataAccess.UpdateData", "No Connection
Open")
' Err.Raise(vbObjectError + ppErrorCodes.ppDALErrNoOpenConnection,
"ProPrimaDAL.DataAccess.UpdateData", "No Connection Open")
' Else
' oCmd = New OleDbCommand("Select * from " & TableName, DBConn, trn)
DBConn.Open()

oCmd = New OleDbCommand("Select * from " & TableName, DBConn,
DBConn.BeginTransaction)
oCmd.Connection = DBConn
oDataAdap = New OleDbDataAdapter(oCmd)
oCmdBuilder = New OleDbCommandBuilder(oDataAdap)
oCmdBuilder.QuotePrefix = "[" oCmdBuilder.QuoteSuffix
= "]" oDataAdap.TableMappings.Add("Table",
TableName) dt.TableName = TableName
oDataAdap.Update(dt)
oCmd.Transaction.Commit()
oCmdBuilder.Dispose()
oCmdBuilder = Nothing
oDataAdap.Dispose()
oDataAdap = Nothing
oCmd.Dispose()
oCmd =
Nothing Return
True Exit
Function

End Function

```

WEB PAGE OUTPUT

Process Exit

Aircraft Engine

Engine manufacture

Engine model

Power

Power type

Fuel injection type

Propeller type

Save

Engine Manufacture	Engine Model	Power	Power Type	Fuel Injection Type	Propeller Type
2si	460-L50	50	HP	CARB	FIXP
2si	67L-70	70	HP	CARB	FIXP
a	IO-550-B4F	300	HP	FINJ	CONP
â/o	O-320-H2AD	160	HP	CARB	FIXP
aero engines	IO-360-B1F6	180	HP	FINJ	FIXP
aero engines	IO-360-L2A	180	HP	CARB	FIXP
aero engines	MP14-PXDK	360	HP	CARB	FIXP
aero engines	O-200	100	HP	CARB	FIXP
aero engines	O-360-D3G	160	HP	CARB	FIXP
aero engines	O-470	230	HP	CARB	CONP