1. InsertStudent ข้อมูลฟิลด์1 ข้อมูลฟิลด์2 ข้อมูลฟิลด์3 ข้อมูลฟิลด์4

```
// InstStdMain
public class  InstStdMain {
      public static void main(String[] args)  throws Exception
      {     InsertStudent s = new InsertStudent() ;
            s.setID("46420414");
            s.setName("Khanakorn");
            s.setDep("xxxxxxx");
            s.setGPA(3.85);
            s.showStudent();
            s.insert(); }
}
```

```
// InsertStudent.java
class InsertStudent  extends Student {
      public void insert()   throws Exception  {
            String sql = "INSERT INTO student VALUES('"  ;
            sql += getID() + "','"  ; sql += getName() + "','";
            sql += getDep() + "','" ; sql += getGPA() + "')";
            System.out.println(sql);
            RegisterOdbc r = new RegisterOdbc();
            r.query(sql);
            r.closeConnection();         }
}
```

```
//Student
public class Student  {
      private static String id;
      private static String na;
      private static String de;
      private static double gp;
      public void setID(String ID) { id = ID; }
      public void setName(String n) { na = n; }
      public void setDep(String d) { de = d; }
      public void setGPA(double GPA) { gp = GPA; }

      public String getID() { return id; }
      public String getName() { return na; }
      public String getDep() { return de; }
      public double getGPA() { return gp; }

      public void showStudent() {
            System.out.println("ID: "+getID());
            System.out.println("Name: "+getName());
            System.out.println("Department: "+de);
            System.out.println("GPA: "+gp);
      }
}
```

2. InsertSubject ข้อมูลฟิลด์1 ข้อมูลฟิลด์2 ข้อมูลฟิลด์3 ข้อมูลฟิลด์4

```
// InstSbjMain.java
public class  InstSbjMain  {
      public static void main(String[] args)  throws Exception
      {     InsertSubject s = new InsertSubject() ;
            s.setID("CMM 373");
            s.setName("Calculus");
            s.setUnit(3);
            s.setTheory(2);
            s.setPractice(1);
            s.showSubject();
            s.insert();                  }
}
```

```
// InsertSubject.java
class InsertSubject  extends Subject {
      public void insert()    throws Exception
      {  String sql = "INSERT INTO subject VALUES('"  ;
         sql += getID() + "','"  ; sql += getName() + "','";
         sql += getUnit() + "','" ; sql += getTheory() + "','" ;
         sql += getPractice() + "')";
         System.out.println(sql);
         RegisterOdbc r = new RegisterOdbc();
         r.query(sql);
         r.closeConnection();          }
}
```

```
// Subject.java
public class Subject {
      private static String id;
      private static String na;
      private static float  un;
      private static float  th;
      private static float  pr;
      public void setID(String ID) { id = ID; }
      public void setName(String n) { na = n; }
      public void setUnit(float u) { un = u; }
      public void setTheory(float  t) { th = t; }
      public void setPractice(float  p) { pr = p; }
      public String getID() { return id; }
      public String getName() { return na; }
      public float getUnit() { return un; }
      public float  getTheory() { return th; }
      public float  getPractice() { return pr; }
      public void showSubject() {
            System.out.println("ID: "+id);
            System.out.println("Name: "+na);
            System.out.println("Uniy: "+un);
            System.out.println("Theory: "+th);
            System.out.println("Practice: "+pr);
      }
}
```

3. InsertRegister ข้อมูลฟิลด์1 ... ยกเว้น ฟิลด์ grade

รูปแบบ insert into student(field1,field2,....) values(field1,field2,....)

เช่น insert into student(student_id,student_name) values('12345','Somchai')

// InsertRegMain.java

```
public class  InstRegMain {
   public static void main(String[] args)  throws Exception
   {     InsertRegister r = new InsertRegister() ;
         r.setRecNo(4);
         r.setStdID("46420403");
         r.setStuID("CIT 789");
         r.setSem("1/2548");
         r.setMid(35);
         r.setFin(42);
         r.showRegister();
         r.insert();                }
```

// InsertRegister.java

```
class  InsertRegister extends Register{
            public void insert()    throws Exception
            {           String sql = "INSERT INTO register VALUES( " + getRecNo()  +
" ,'"   ;
                        sql += getStdID() + "','"  + getSubID() + "','" + getSem() + "', " ;
                        sql += getMid() + " , " + getFinal() +  ", NULL )";
                        System.out.println(sql);
                        RegisterOdbc r = new RegisterOdbc();
                        r.query(sql);
                        r.closeConnection(); }
}
```

// Register.java

```
public class  Register
{  private static long recNo;
   private static String stdID;
   private static String subID;
   private static String sem;
   private static int mid;
   private static int fin;
   private static String gra;

   public void setRecNo(long rec) { recNo = rec; }
   public void setStdID(String stuid) { stdID = stuid; }
  public void setStuID(String subjectID) { subID = subjectID; }
   public void setSem(String semester) { sem = semester; }
   public void setMid(int midt) { mid = midt; }
   public void setFin(int fina) { fin = fina; }
   public void setGra(String grade) { gra = grade; }

   public long getRecNo() { return recNo; }
   public String getStdID() { return stdID; }
   public String getSubID() { return subID; }
   public String getSem() { return sem; }
   public int getMid() { return mid; }
   public int getFinal() { return fin; }
   public String getGra() { return gra; }

   public void showRegister() {
        System.out.println("RecordNo: "+getRecNo());
        System.out.println("StudentID: "+getStdID());
        System.out.println("SubjectID: "+getSubID());
        System.out.println("Semester: "+getSem());
        System.out.println("Mid: "+getMid());
        System.out.println("Final: "+getFinal());
        System.out.println("Grade: "+getGra());
   }
}
```

// RegisterOdbc.java

```
import java.sql.*;
public class RegisterOdbc
{  Connection c;
   RegisterOdbc() throws Exception
   {  Class.forName("sun.jdbc.odbc.JdbcOdbcDriver");
      c = DriverManager.getConnection("jdbc:odbc:registerdb", "","");
// c = DriverManager.getConnection("jdbc:odbc:registerMyt", "","");                }

    public void select(String sqlStmt,int maxField) throws Exception      {
       Statement s = c.createStatement();
       ResultSet r = s.executeQuery(sqlStmt);
       System.out.print("\t");
       while (r.next())
       {
          for (int i=1;i<=maxField ;i++ )
          {
             System.out.print(r.getString(i));
             if (i<maxField) System.out.print(",\t");
          }
          System.out.println("");
       }
       s.close();
    `

    public void select(String sqlStmt) throws Exception
    {
       Statement s = c.createStatement();
       ResultSet r = s.executeQuery(sqlStmt);
       while (r.next())
       {
          System.out.print("\t"+r.getString(1) + " - " );
          System.out.println(r.getString(2) );
       }
       s.close();
    }

    public void sel(String sqlStmt,int Fld) throws Exception
    {
       Statement s = c.createStatement();
       ResultSet r = s.executeQuery(sqlStmt);
       while (r.next()) {
          System.out.print(",\t"+r.getString(Fld));
       }
       System.out.print("\n");
       s.close();
    }

    public void query(String sqlStmt) throws Exception
    {
       Statement s = c.createStatement();
       s.executeUpdate(sqlStmt);
       s.close();
    }

    public void closeConnection() throws Exception     {
       c.close();
    }
}
```

```
public void calUpdate(String sel) throws Exception{
   System.out.print( "\n" );
   Statement s = c.createStatement();
   ResultSet r = s.executeQuery(sel);
   String tmp , reco = "";
   int grd ;
   while (r.next()) {
     for (int i=1;i<=8 ;i++ ) {
       tmp = r.getString(i);
       System.out.print(tmp);
       reco = (i==1) ? tmp : reco ;          // เก็บหมายเลข Primary Key
       if (i==7) {                           // คำนวนเกรด
         grd=grade( Integer.parseInt(tmp) ) ;
         System.out.print( " , " + grd );
         String sql2 = "UPDATE register SET register.grade = " + grd +
           "  WHERE register.no = " + reco ;
         Statement u = c.createStatement();
         u.executeUpdate(sql2);              // เก็บเกรดที่ได้เข้าฐานข้อมูล
         u.close();                          // ปิดการติดต่อส่วน Update
         }
       if (i<8) System.out.print(" , "); else System.out.print("\n");
       }
     }
   s.close();                                // ปิดการติดต่อส่วน Select
 }
// End Class
```

```
public  int grade (int sc )   throws Exception
  {  int gra = (sc >= 80) ? 4 : (sc >= 70) ? 3 :
             (sc >= 60) ? 2 : (sc >= 50) ? 1 : 0 ;
     return  gra ;            // คำนวนหาเกรด
  }
```

4. DeleteOdbc ชื่อตาราง เงื่อนไข

เช่น

DeleteOdbc student

student_id ='46420414'

```
// DeleteOdbc
public class DeleteOdbc  {
   public static void main(String[] args)   throws Exception
   {
        String ID = "46420414" ;
        String sql = "DELETE FROM student WHERE student_id = '" + ID + "'";
        System.out.println(sql);
        RegisterOdbc r = new RegisterOdbc();
        r.query(sql);
        r.closeConnection();
   }
}
```

5. UpdateOdbc ชื่อตาราง

ค่าฟิลด์ใหม่ เงื่อนไข เช่น

UpdateOdbc subject

subject_name='Data Comm 2'

subject_id='CIT 789'

```
// UpdateOdbc
public class  UpdateOdbc {
   public static void main(String[] args) throws Exception
{  //String subject_name="Project Study";
   String subject_name="Data Comm 2";
   String subject_id="CIT 789";
   String sql = "UPDATE subject SET subject_name = '"+ subject_name +"'";
   sql += " WHERE subject_id = '" + subject_id + "'";
   System.out.println(sql);
   RegisterOdbc r = new RegisterOdbc();
   r.query(sql);
   r.closeConnection();
   }
}
```

6. ShowGradeBystudent รหัสนักศึกษา

```
// ShowGradeBystudent.java
public class  ShowGradeBystudent {
   public static void main(String args[]) throws Exception       {
      String stdID = "46420402" ;
      String sql ;
      sql = "SELECT * FROM student WHERE student_id = '" ;
      sql += stdID +"'";
      System.out.println(sql + "\n");
/*  ส่วนนี้ทำงานได้กับ Database อื่นๆ ที่ไม่ใช้ Access MDB เพื่อแสดงชื่อ Field
      RegisterOdbc  s1= new RegisterOdbc();
      s1.sel( "SHOW fields FROM  student ",1 );
      s1.closeConnection();  */
      RegisterOdbc s2 = new RegisterOdbc();
      s2.select(sql,4);
      s2.closeConnection();
   }
}
```

7. ShowGradeBysubject

```
// ShowGradeBysubject.java
public class  ShowGradeBysubject {
   public static void main(String args[]) throws Exception       {
      String subID = "CIT 789" ;
      String sql ;
      sql = "SELECT * FROM subject WHERE subject_id = '" ;
      sql += subID +"'";
      System.out.println(sql + "\n");
/*  ส่วนนี้ทำงานได้กับ Database อื่นๆ ที่ไม่ใช้ Access MDB เพื่อแสดงชื่อ Field
      RegisterOdbc  s1= new RegisterOdbc();
      s1.sel( "SHOW fields FROM subject ",1  );
      s1.closeConnection(); */
      RegisterOdbc s2 = new RegisterOdbc();
      s2.select(sql,5);
      s2.closeConnection();
   }
`
```

8. คำนวณเกรด

- CalulateGradeByStudent รหัสนักศึกษา หรือ
- CalculateGradeBySubject รหัสวิชา หรือ
- CalculateGradeAll

// CalGrade.java (ต้องให้ทำงานในหน้าต่าง DOS เท่านั้น เพราะ Editplus ไม่สามารถรับข้อมูลในหน้าต่าง Capture ได้)

```
public class CalGrade {
  public static void main(String[] args)   throws Exception  {
  boolean flag = true ;
    while (flag) {
     System.out.println( "\n\t - - - - - - - - -  Menu - - - - - - - - - " );
     System.out.println( "\t|\t  1 CalulateGradeByStudent  \t  |" );
     System.out.println( "\t|\t  2 CalculateGradeBySubject \t  |" );
     System.out.println( "\t|\t  3 CalculateGradeAll          \t  |" );
     System.out.println( "\t|\t  4 Exit now                \t  |" );
     System.out.println( "\t - - - - - - - - - - - - - - - - - - - - -" );
     System.out.print( "\t \t Select choice ? " );

     KeyEntry k = new KeyEntry() ;
     RegisterOdbc r = new RegisterOdbc();
     String sql="SELECT  r.no, r.student_id, r.subject_id, r.semester, r.mid, r.final, "  +
          "(r.mid+r.final) AS sum, s.student_name FROM register AS r " +
          "LEFT JOIN student AS s ON s.student_id = r.student_id ";
     String sqlList;

     switch (KeyEntry.getInteger()) {
      case 1:
        System.out.println( "\n  List Student from register " );
        sqlList="SELECT  r.student_id, s.student_name FROM register AS r " +
          "LEFT JOIN student AS s ON s.student_id = r.student_id "  ;
        r.select(sqlList);

        System.out.print( "\n  Select student_id for Calculate Grade from list " );
        r.calUpdate(sql + "WHERE r.student_id = '"+ KeyEntry.getString() + "'");
        r.closeConnection();                              // สิ้นสุดการเชื่อมต่อฐานข้อมูล
        break;

      case 2:
        System.out.println( "\n  List Subject from register " );
        sqlList="SELECT  r.subject_id, s.subject_name FROM register AS r " +
          "LEFT JOIN subject AS s ON s.subject_id = r.subject_id "  ;
        r.select(sqlList);

        System.out.print( "\n  Select student_id for Calculate Grade from list " );
        r.calUpdate(sql + "WHERE r.subject_id = '"+ KeyEntry.getString() + "'");
        r.closeConnection();                              // สิ้นสุดการเชื่อมต่อฐานข้อมูล
        break;
```

```
      case 3:                          // Update ทั้งหมด ไม่ต้องมี Where
        r.calUpdate(sql);              // ส่งค่า select ที่ต้องการให้ update
        r.closeConnection();           // สิ้นสุดการเชื่อมต่อฐานข้อมูล
        break;

      default: {
        System.out.println( "\t No Selec Choice" );
        flag = false ;
        break;
        }
      }

      r.closeConnection();
      System.out.println( "\t Calculate grade and recoded to database successful..\n" );
     }
   }
}
```

// KeyEntry.java

```
// Get Input From Keyboard ;
// This file can run for help  ;
import java.io.*;
class KeyEntry {
```

```
   static double getDouble() throws IOException
   {  byte [] b = new byte [24];
      System.in.read(b);
      return Double.parseDouble((new String(b)).trim());
   }
```

```
   static int getInteger() throws IOException {
      byte [] b = new byte [10];
      System.in.read(b);
      return Integer.parseInt(new String(b).trim());      }
```

```
   static float getFloat() throws IOException {
      byte [] b = new byte [16];
      System.in.read(b);
      return Float.parseFloat((new String(b)).trim());    }
```

```
   public static void main(String args[]) throws IOException    {  // For Help on command line
      System.out.println("      This Class for Get Input From Keyboard \n");
      System.out.println(" Format:");
      System.out.println("\t\tString a = ip.getString();");
      System.out.println("\t\tint  b = ip.getInteger();");
      System.out.println("\t\tfloat  c = ip.getFloat();");
      System.out.println("\t\tdouble  d = ip.getDouble(); \n");
      System.out.println(" Exsample:  \t (Run in Dos Only for get input from keyboard)");
      System.out.println("\t\tKeyEntry ip = new KeyEntry() ; ");
      System.out.println("\t\tSystem.out.print(\"\\nWhat is your name? \");");
      System.out.println("\t\tSystem.out.println(\"Hello \" + ip.getString());");
      System.out.println("\t\tSystem.out.print(\"How many weight  ? \");");
      System.out.println("\t\tSystem.out.println(\"Are you sure \" + ip.getFloat() + \" Kg.\");");
   }
}
```

```
   static String getString() throws IOException
   {  byte [] b = new byte [255];
      System.in.read(b);
      return (new String(b)).trim();    }
```