

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("xxxxxx");
        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 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 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 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) {                    // คำนวณเกรด
                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
}

```

```

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

```

/ End Class

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

ค่าฟิลดใหม่ 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 ที่ไม่ใช่ 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 ที่ไม่ใช่ 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. คำนำชมเกรด

- CalculateGradeByStudent 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 CalculateGradeByStudent \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(); // ล้างการเชื่อมต่อฐานข้อมูล
                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(); // ล้างการเชื่อมต่อฐานข้อมูล
                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());
    }

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

```