

# Android Sqlite DB

# Agenda

- Install Navicat Lite
- SQL Command
- Define data class
- SQLiteOpenHelper
- Code in activity

# Navicat Lite

- Create Table
- Insert datas

# SQL Command

- Query
- Insert
- Update
- Delete

# Define data class

```
public class Restaurant implements Serializable {  
  
    //Data Access Transform  
  
    public void fromCursor(Cursor cursor) {  
  
        this.id = cursor.getInt(0);  
  
        this.name = cursor.getString(1);  
  
    }  
  
    public ContentValues toContentValues(){  
  
        ContentValues data = new ContentValues();  
  
        data.put("ID", this.id);  
  
        data.put("NAME", this.name);  
  
        return data;  
  
    }  
  
}
```

# SQLiteOpenHelper - 1

```
public class RestaurantDAO extends SQLiteOpenHelper{

    private static final String DB_NAME = "rest.db";

    private static final int VERSION = 4;

    private static final String CREATE_TABLE = "CREATE TABLE RESTAURANT (ID INTEGER
PRIMARY KEY, NAME TEXT);";

    private static final String DELETE_TABLE = "DROP TABLE IF EXISTS RESTAURANT;";

    private Context ctx;

    public RestaurantDAO(Context context) {

        super(context, DB_NAME, null, VERSION);

        ctx = context;

    }
```

# SQLiteOpenHelper - 2

@Override

```
public void onCreate(SQLiteDatabase arg0) {
```

```
    // TODO Auto-generated method stub
```

```
    Log.i("SQLITE", "CREATE");
```

```
    Toast.makeText(ctx, "create", Toast.LENGTH_SHORT).show();
```

```
    arg0.execSQL(CREATE_TABLE);
```

```
}
```

# SQLiteOpenHelper - 3

```
public List<Restaurant> getAll(){  
  
    SQLiteDatabase db = this.getReadableDatabase();  
  
    String sql = "SELECT * FROM RESTAURANT;";  
  
    Cursor cursor = db.rawQuery(sql, null);  
  
    List<Restaurant> ret = new ArrayList<Restaurant>();  
  
    if(cursor.moveToFirst()){  
  
        do{  
  
            Restaurant r = new Restaurant();  
  
            r.fromCursor(cursor);  
  
            ret.add(r);  
  
        }while(cursor.moveToNext());  
  
    }  
  
    return ret;  
  
}
```



# SQLiteOpenHelper - 4

```
public Restaurant getRestaurantById(int id){  
  
    SQLiteDatabase db = this.getReadableDatabase();  
  
    String sql = "SELECT * FROM RESTAURANT WHERE ID = "+id+"";  
  
    Cursor cursor = db.rawQuery(sql, null);  
  
    Restaurant ret = new Restaurant();  
  
    if(cursor.moveToFirst()){  
  
        ret.fromCursor(cursor);  
  
    }  
  
    return ret;  
  
}
```

# SQLiteOpenHelper - 5

```
public boolean insert(Restaurant r){  
  
    SQLiteDatabase db = this.getWritableDatabase();  
  
    int nextId = this.getNextId();  
  
    r.setId(nextId);  
  
    try{  
  
        long rid = db.insert("RESTAURANT", null, r.toContentValues());  
  
    }catch(Exception ex){  
  
        Log.e("SQLITE",ex.getMessage());  
  
        return false;  
  
    }  
  
    db.close();  
  
    return true;  
  
}
```

# SQLiteOpenHelper - 6

```
public int getNextId(){  
    SQLiteDatabase db = this.getReadableDatabase();  
  
    String sql = "SELECT MAX(ID) AS max_id FROM RESTAURANT;";  
  
    Cursor cursor = db.rawQuery(sql, null);  
  
    int id = 0;  
  
    if(cursor.moveToFirst()){  
        id = cursor.getInt(0);  
    }  
  
    return id + 1;  
}
```

# SQLiteOpenHelper - 7

```
public boolean update(Restaurant r){  
    SQLiteDatabase db = this.getWritableDatabase();  
  
    try{  
        ContentValues values = new ContentValues();  
  
        values.put("NAME", r.getName());  
  
        db.update("RESTAURANT", values, "ID=?", new String[]{r.getId()+""});  
    }catch(Exception ex){  
        Log.e("SQLITE",ex.getMessage());  
  
        return false;  
    }  
  
    db.close();  
  
    return true;  
}
```

# SQLiteOpenHelper - 8

```
public boolean delete(int id){  
    SQLiteDatabase db = this.getWritableDatabase();  
    try{  
        db.delete("RESTAURANT", "ID=?",new String[]{id+""});  
    }catch(Exception ex){  
        Log.e("SQLITE",ex.getMessage());  
        return false;  
    }  
    db.close();  
    return true;  
}
```

# SQLiteOpenHelper - 9

@Override

```
public void onUpgrade(SQLiteDatabase arg0, int arg1, int arg2) {  
    // TODO Auto-generated method stub  
  
    Log.i("SQLITE", "UPGRADE");  
  
    Toast.makeText(ctx, "upgrade", Toast.LENGTH_SHORT).show();  
  
    arg0.execSQL(DELETE_TABLE);  
  
    arg0.execSQL(CREATE_TABLE);  
  
}
```

# Code in activity - 1

```
public class MainActivity extends Activity {  
    private RestaurantDAO dao;  
  
    ...  
  
    private ListView lv;  
  
    private List<Restaurant> list;  
  
    @Override  
    protected void onCreate(Bundle savedInstanceState) {  
        super.onCreate(savedInstanceState);  
        setContentView(R.layout.activity_main);  
  
        initDB();  
  
        initView();  
  
        initHandler();  
  
    }
```

# Code in activity - 2

```
private void initView() {  
    .....  
    list = dao.getAll();  
    lv.setAdapter(new ArrayAdapter(this,android.R.layout.simple_list_item_1,list));  
}  
  
private void initDB() {  
    dao = new RestaurantDAO(this);  
    for (int i = 0; i < 2; i++) {  
        Restaurant r = new Restaurant();  
        r.setName("Tasty" + i);  
        dao.insert(r);  
    }  
}
```



# Code in activity - 3

```
create.setOnClickListener(new View.OnClickListener() {  
  
    @Override  
  
    public void onClick(View arg0) {  
  
        Restaurant t = new Restaurant();  
  
        t.setName("XXX" + new Random().nextInt()%100000);  
  
        if(dao.insert(t)){  
  
            list= dao.getAll();  
  
            lv.setAdapter(new ArrayAdapter(MainActivity.this,  
                                           android.R.layout.simple_list_item_1,list));  
  
        }  
  
    }  
  
});
```

# Code in activity - 4

```
update.setOnClickListener(new View.OnClickListener() {  
  
    @Override  
  
    public void onClick(View arg0) {  
  
        Restaurant r = dao.getRestaurantById(3);  
  
        r.setName("XXX" + new Random().nextInt()%100000);  
  
        dao.update(r);  
  
        list.clear();  
  
        list.add(r);  
  
        lv.setAdapter(new ArrayAdapter(MainActivity.this,  
                                       android.R.layout.simple_list_item_1,list));  
  
    }  
  
});
```

# Code in activity - 5

```
retrieve.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View arg0) {  
        Restaurant r = dao.getRestaurantById(3);  
  
        list.clear();  
  
        list.add(r);  
  
        lv.setAdapter(new ArrayAdapter(MainActivity.this,  
            android.R.layout.simple_list_item_1,list));  
    }  
});
```

# Code in activity - 6

```
delete.setOnClickListener(new View.OnClickListener() {  
  
    @Override  
  
    public void onClick(View arg0) {  
  
        // TODO Auto-generated method stub  
  
        dao.delete(3);  
  
        list= dao.getAll();  
  
        lv.setAdapter(new ArrayAdapter(MainActivity.this,  
                                       android.R.layout.simple_list_item_1,list));  
  
    }  
  
});
```