# PADS Logic

- For PADS9.0.X

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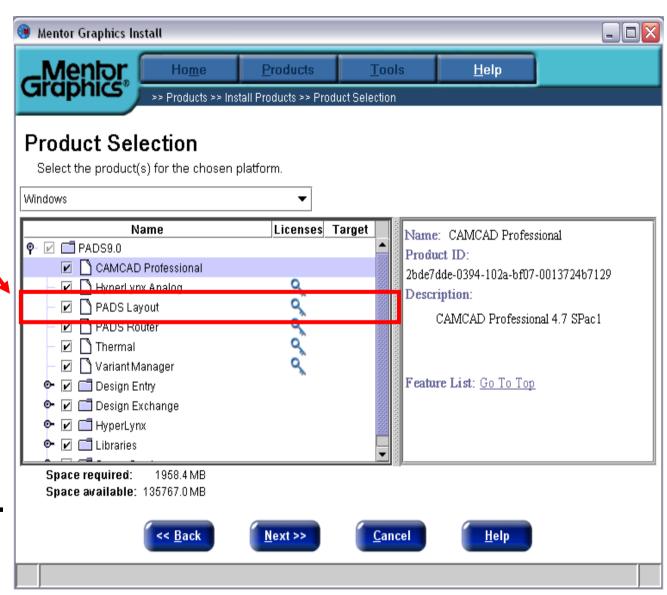
第一课

介绍和安装

#### Logic 安装

- PADS-Logic
- 勾选Layout项目

预设程序安装路径为 C:\MentorGraphics\9.0. X PADS



#### 软、硬件建议需求

#### 建议操作系统

- Windows XP
- Windows VISTA(2007.2以上版本)

#### 建议硬件配备

- CPU至少要Pentium III 500 MHz
- 存贮器至少要256MB (建议512MB以上)
- 三键或滚轮鼠标器 (建议)
- 1024 X 768, 256色显示
- 需要1.0 GB硬盘空间(建议1.5 GB硬盘空间)

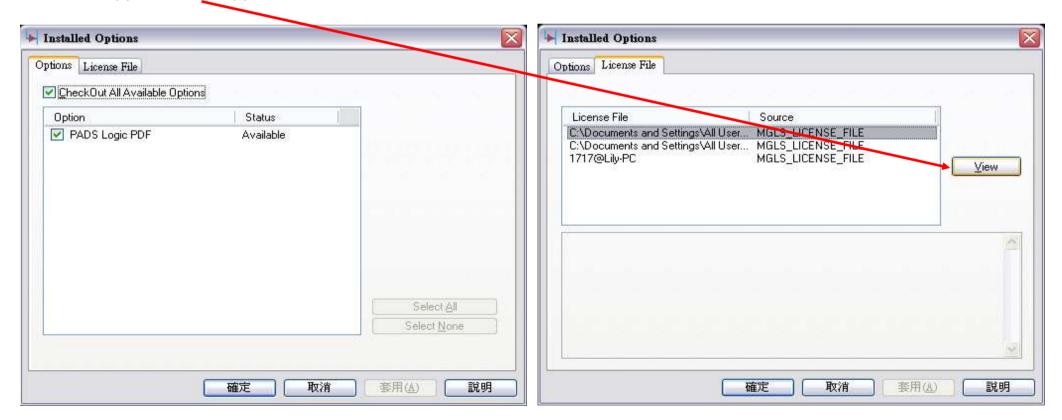
#### 保全方式

- Logic需要单独的License ID,相关细节可参考License file中的内容
- C:\Documents and Settings\All Users\Application Data\pads \9.0.X\License.dat
- Floating License Server 是属于额外的安装选项
- 可从安装光盘中找到安装程序



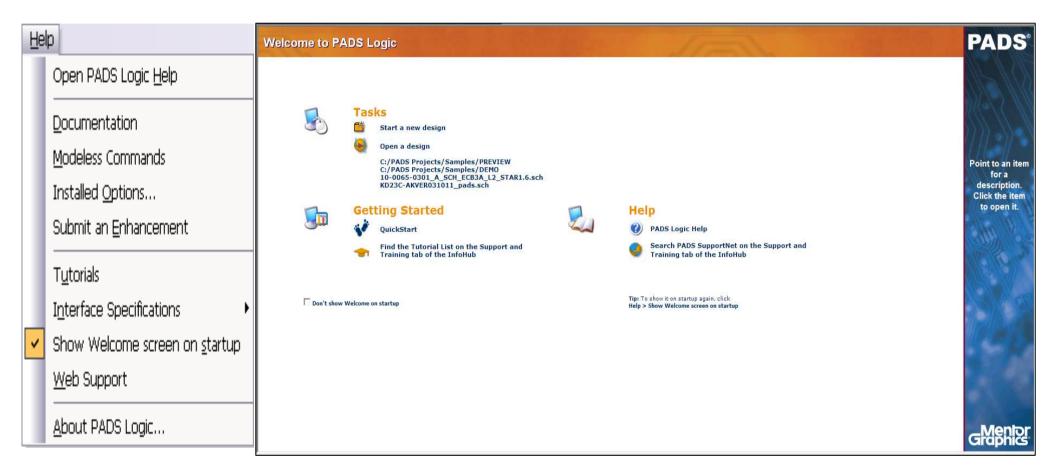
## 安装功能 与 License file

- 功能安装选项:
  - Help > Installed Options...
- ・ 查看 license file 内容:
  - 选择 "License File" 页面
  - 按 "View" 按钮



#### PADS 相关资源

• 可由Logic中的Help下拉菜单中选取

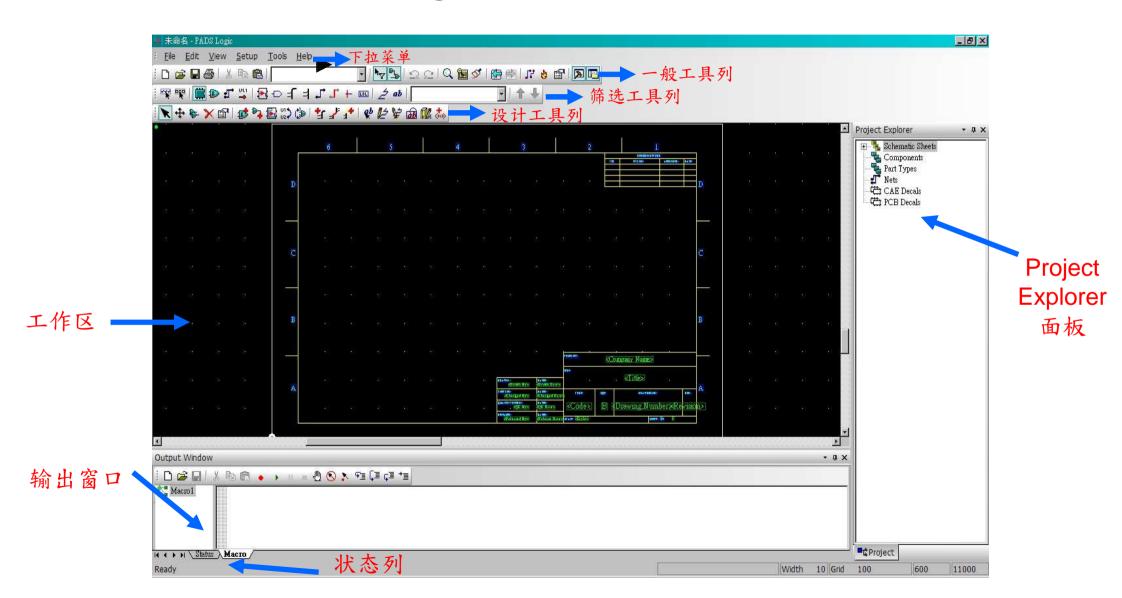


PADS Logic help 联机即时说明 Web Support 连结原厂联机说明 http://supportnet.mentor.com/ (需于原厂网站上注册)

# 第二课

使用介面与环境设置

## Logic 环境介绍



## Logic 环境介绍

◆ Project Explorer 面板 树状结构式的窗口,提供对整张线路图物件资料的存取

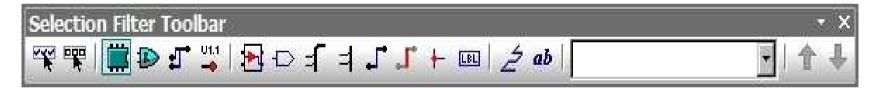
◆輸出窗口 共分成二个页面: Status 显示目前编辑状态 Macro 编辑,录制巨集

◆ 状态列 提供指令执行时相关信息

◆ 一般工具列



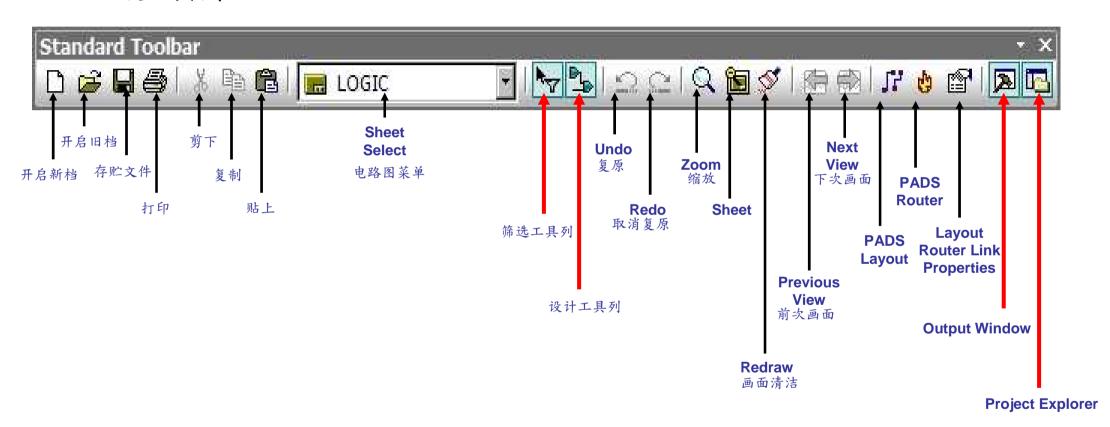
◆ 筛选工具列



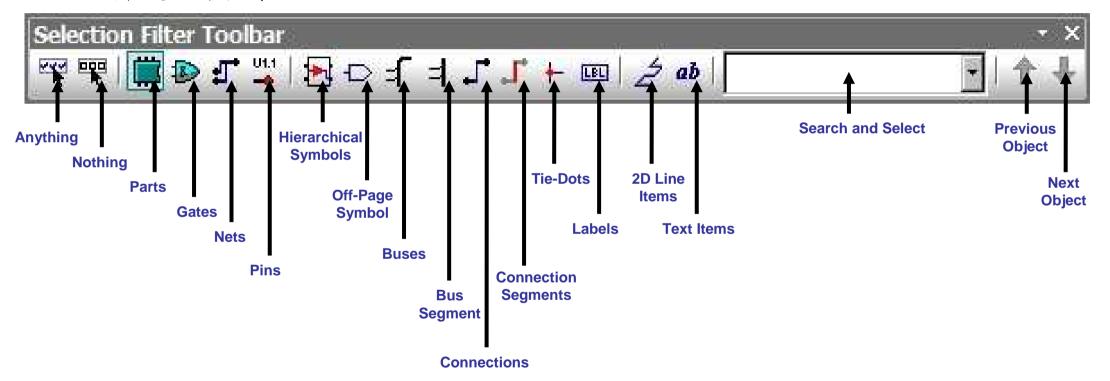
◆ 设计工具列



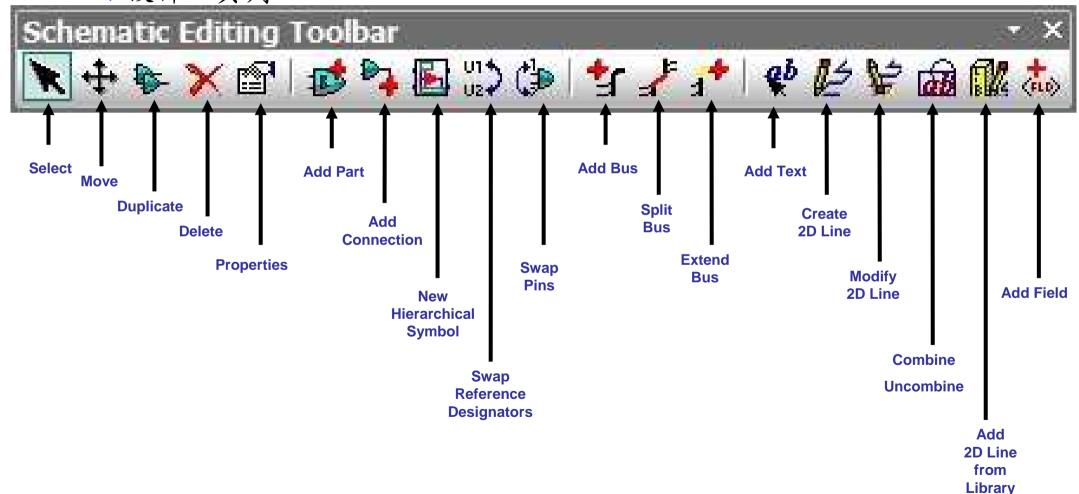
◆ 一般工具列



◆ 筛选工具列



◆设计工具列



#### 鼠标器指令

#### 鼠标器中键 (MMB)

- · Click 偏移画面
- · Hold and Drag 放大缩小
- · Ctrl + Wheel 放大缩小
- · Wheel 上下
- · Shift + Wheel 左右

鼠标器右键 (RMB)

- · Nothing Selected 右键菜单
- · Object Selected 物件右键菜单

Middle Mouse Button (MMB)

Left Mouse Button (LMB)

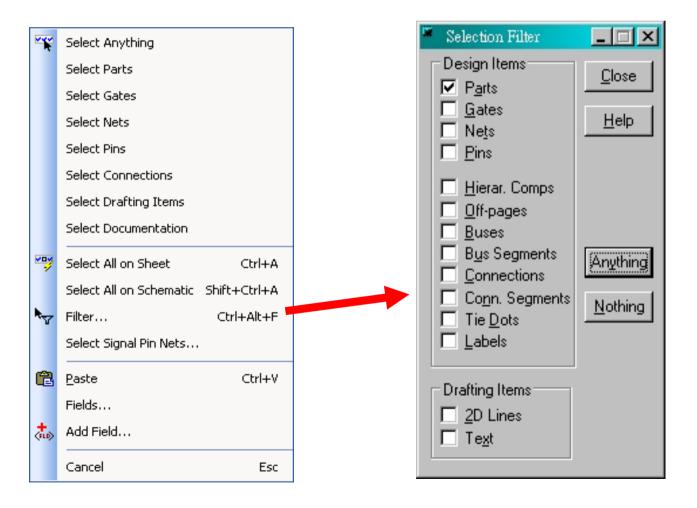


#### 鼠标器左键 (LMB)

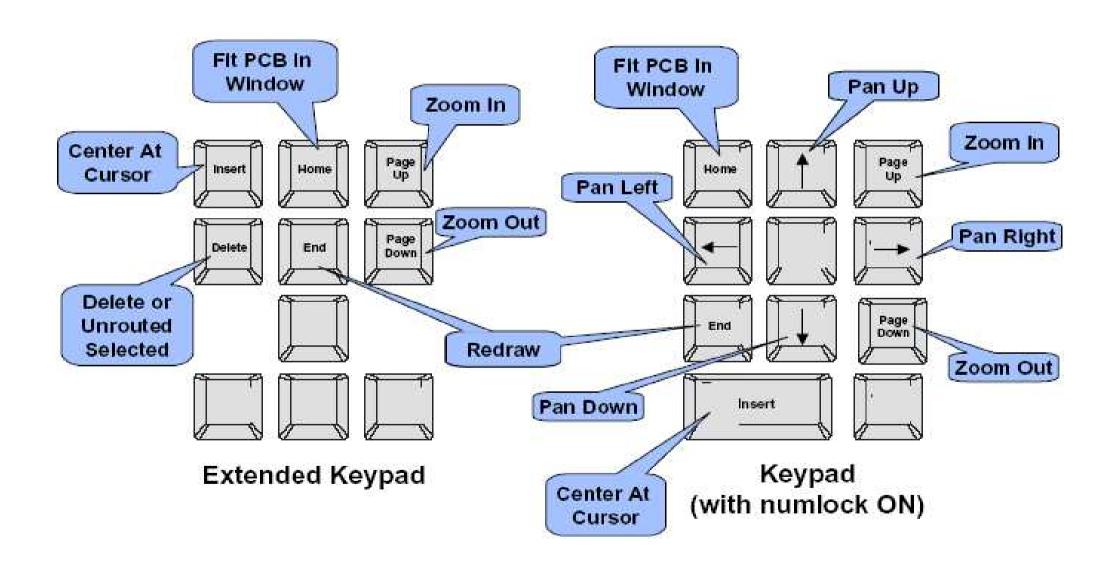
- · Click 选取
- · Ctrl + Click 加选与取消加选
- Double Click 物件Properties
- Depress LMB in space + Drag a box 框选

#### 一般工具列

◆右键筛选工具列(对应筛选工具列)

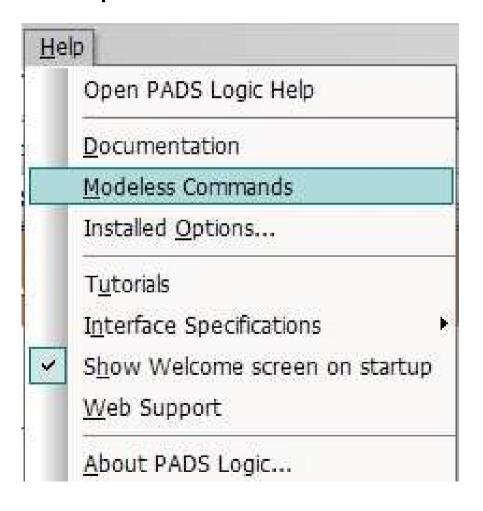


#### 键盘指令



#### 热键指令

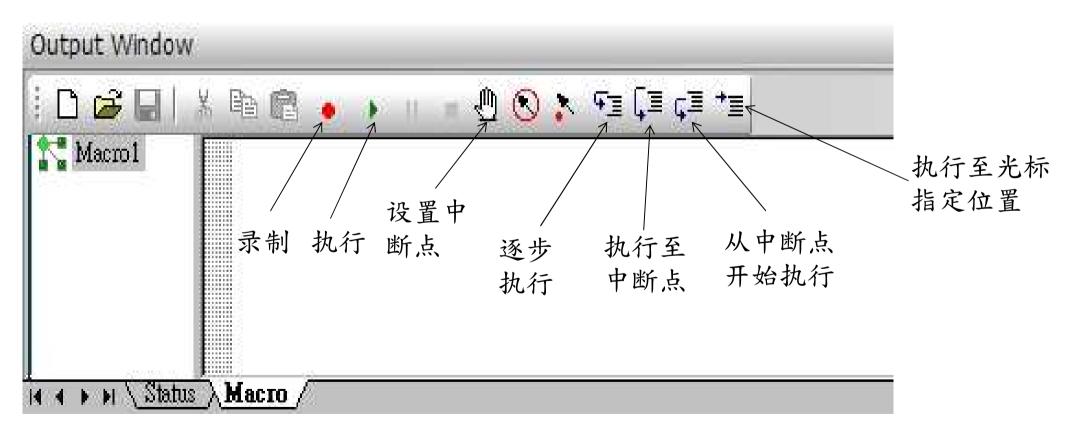
Help > Modeless Commands





#### 巨集录制

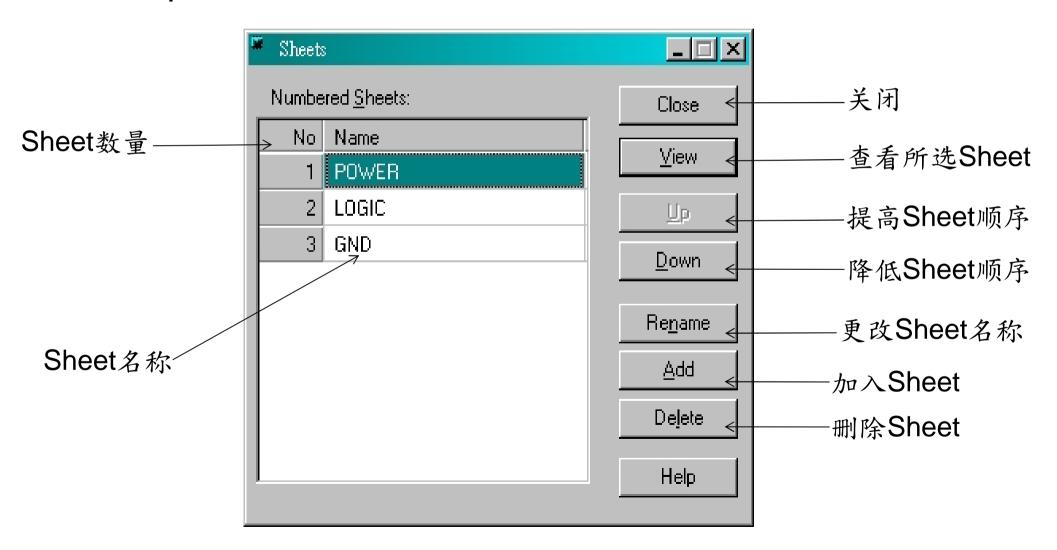
Output Window > Macro



PS: 先存档后方可使用

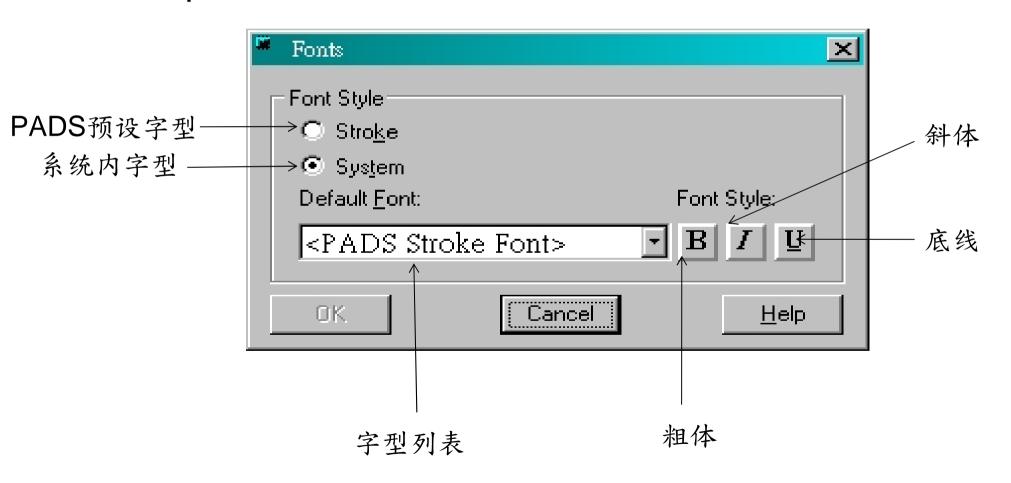
#### Sheets

Setup > Sheets

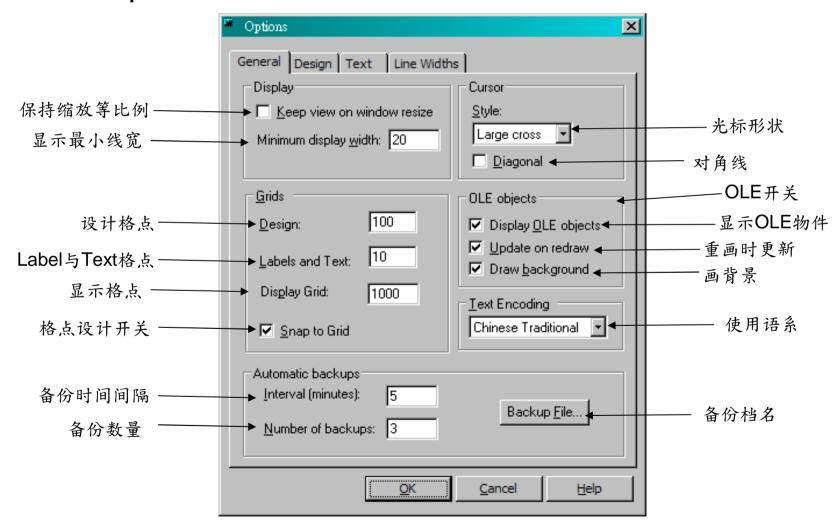


#### **Fonts**

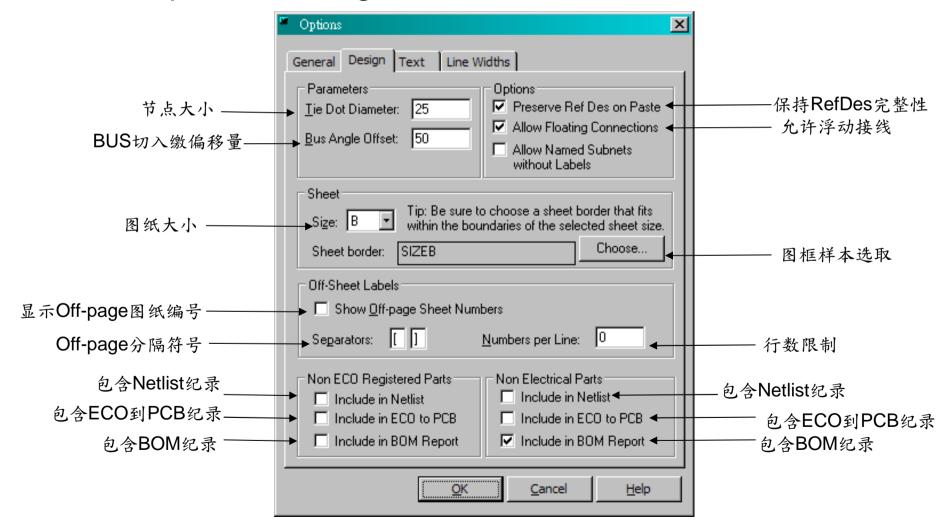
Setup > Fonts



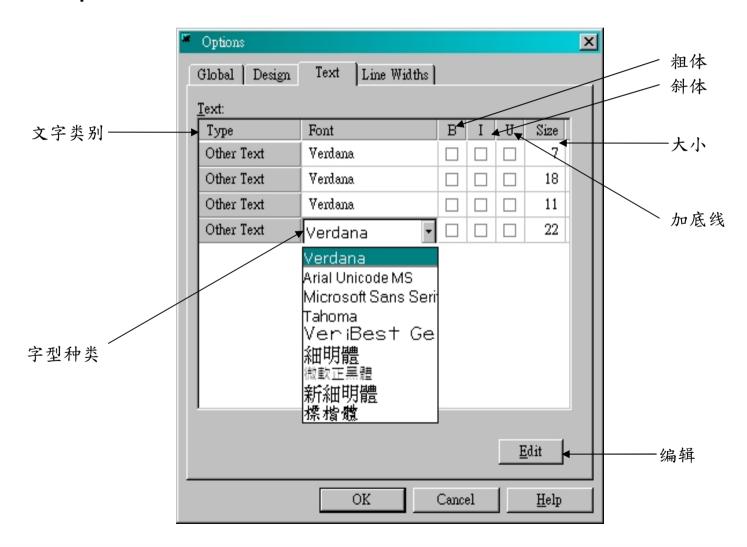
Tools > Options > General



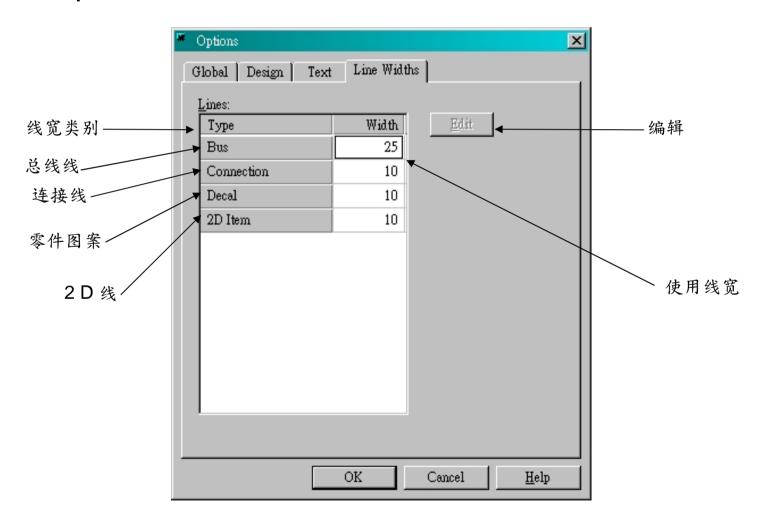
Tools > Options > Design



◆ Tools > Options > Text

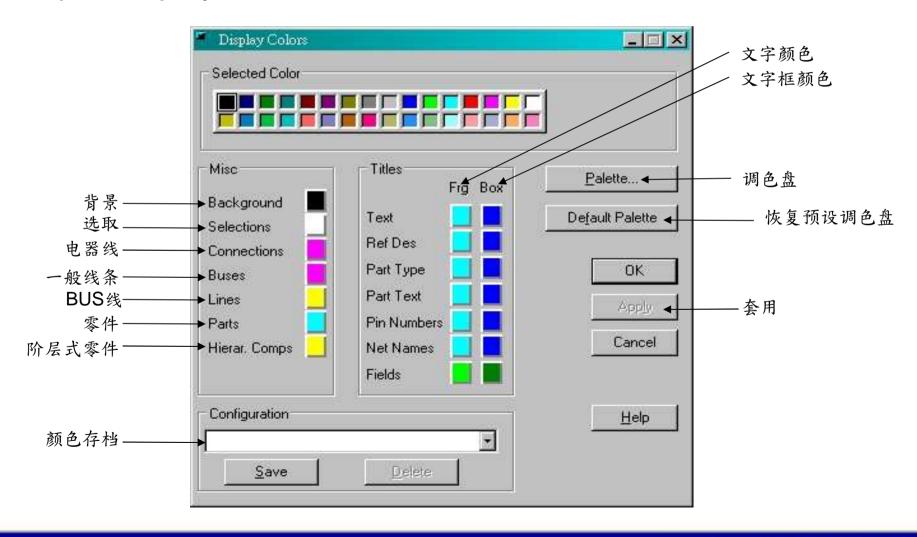


◆ Tools > Options > Line Widths



#### **Display Colors**

Setup > Display Colors



#### 练习一

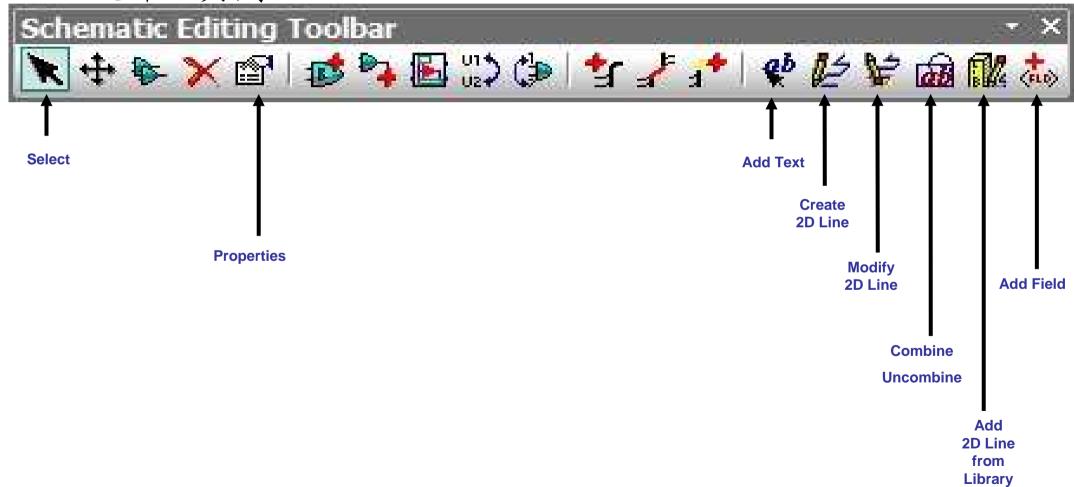
- Project Explorer 面板、Help 面板、 输出窗口、状态列、Macro
- 一般工具列、筛选工具列、设计工具列
- 鼠标器指令
- 键盘指令
- Options
- Display Colors
- 增加Sheets、设置Fonts

# 第三课

编辑绘制

#### Design Toolbar

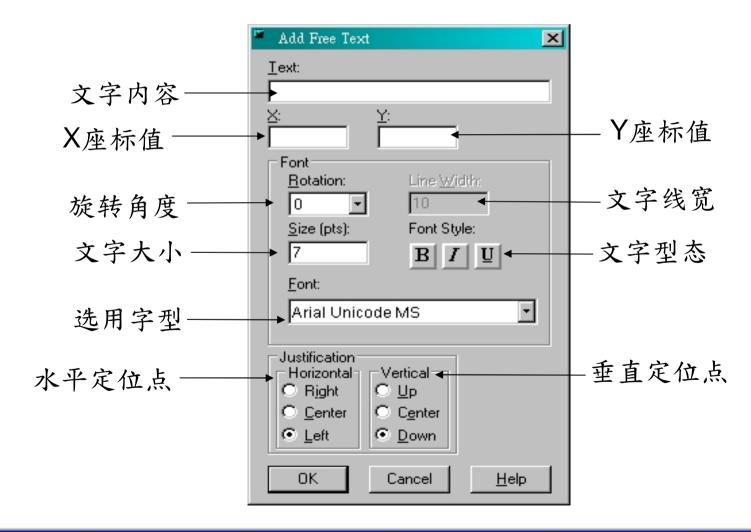
◆设计工具列



#### 写文字

Design Toolbar > Add Text

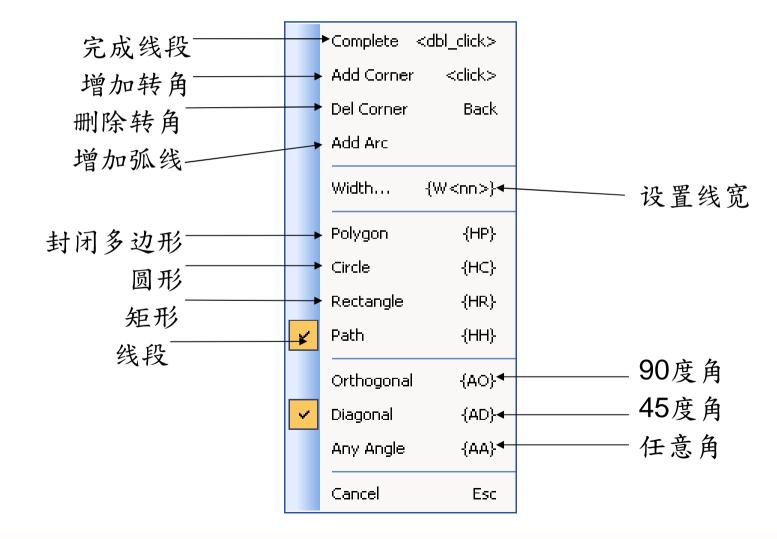




#### 画线

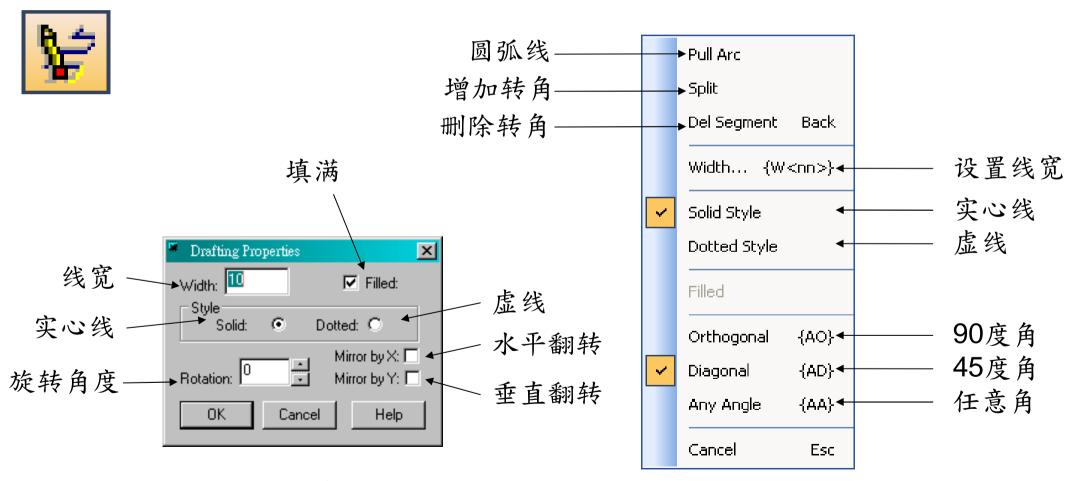
#### Design Toolbar > Create 2D Line





#### 修改线段

Design Toolbar > Modify 2D Line



PS:填满效果仅适用于多边形与矩形

#### 组合物件

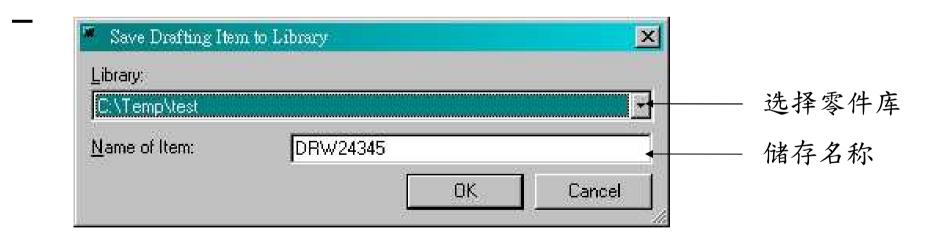
#### Design Toolbar > Combine/Uncombine



- Combine方法
  - 选取后 > 鼠标器右键 > Combine
  - 按下 Combine/Uncombine 按钮 > 鼠标器右键 > Combine > 点选所需物件 > 鼠标器右键 > Complete
- Uncombine方法
  - 按下 Combine/Uncombine 按钮 > 鼠标器右键 > Uncombine > 点选不需要的物件 > 鼠标器右键 > Complete
- Explode方法
  - 选取后 > 鼠标器右键 > Explode
  - 按下 Combine/Uncombine 按钮 > 鼠标器右键 > Explode > 点选所需物件 > 鼠标器右键 > Complete

#### 存贮组合物件

- 存贮步骤:
  - 选取组合物件后
  - 鼠标器右键
  - Save to Library



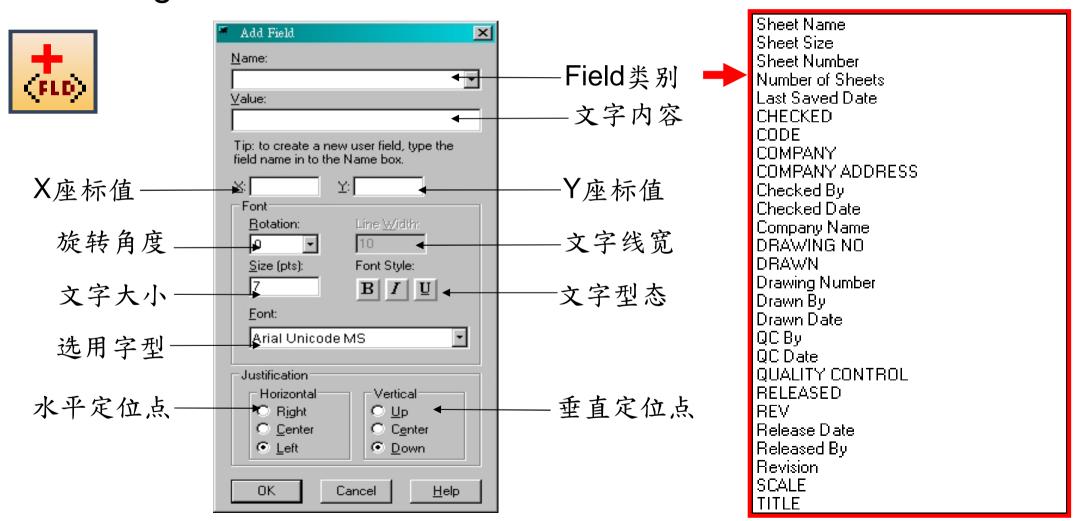
#### 取用组合物件

• 取用步骤:

Design Toolbar > Add 2D Line from Library Get Drafting Item from Library - test X DRW11041 Drafting Items: 零件列表 DRW11041 OK. DRW2781 零件预览 DRW50469 Cancel DRW8218 TEST-1 Help Filter Library: C:\Temp\test -选取零件库 Items: Apply . 筛选控制 - 套用

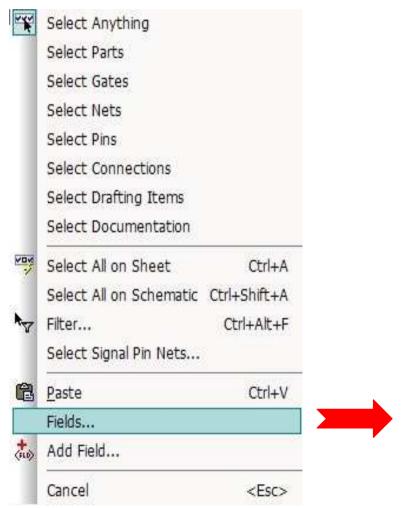
### **Field**

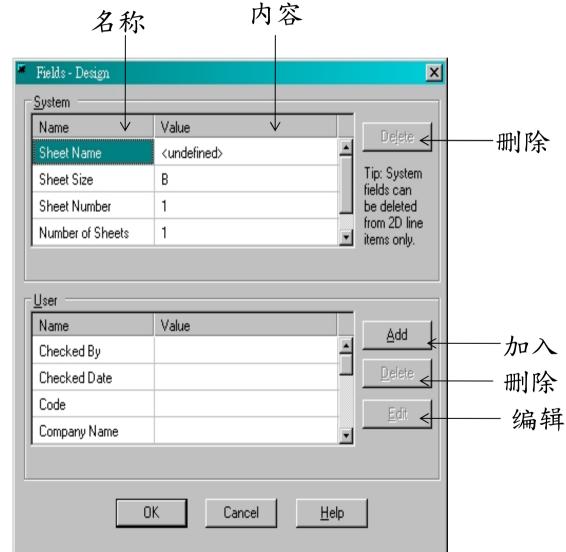
Design Toolbar > Add Field



### **Field**

• 鼠标器右键 > Fields...





### 练习二

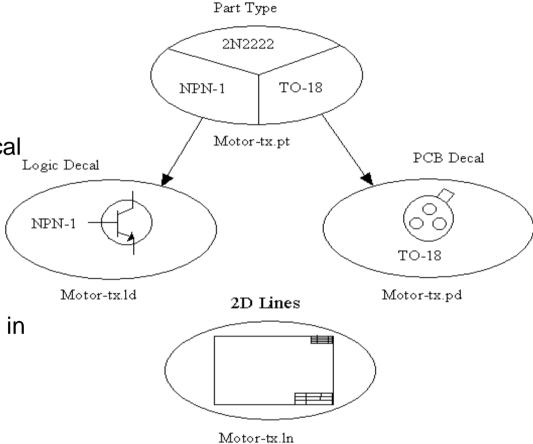
- 设计工具列
- 写文字
- 画线、修改线段
- 组合物件
- Field

第四课

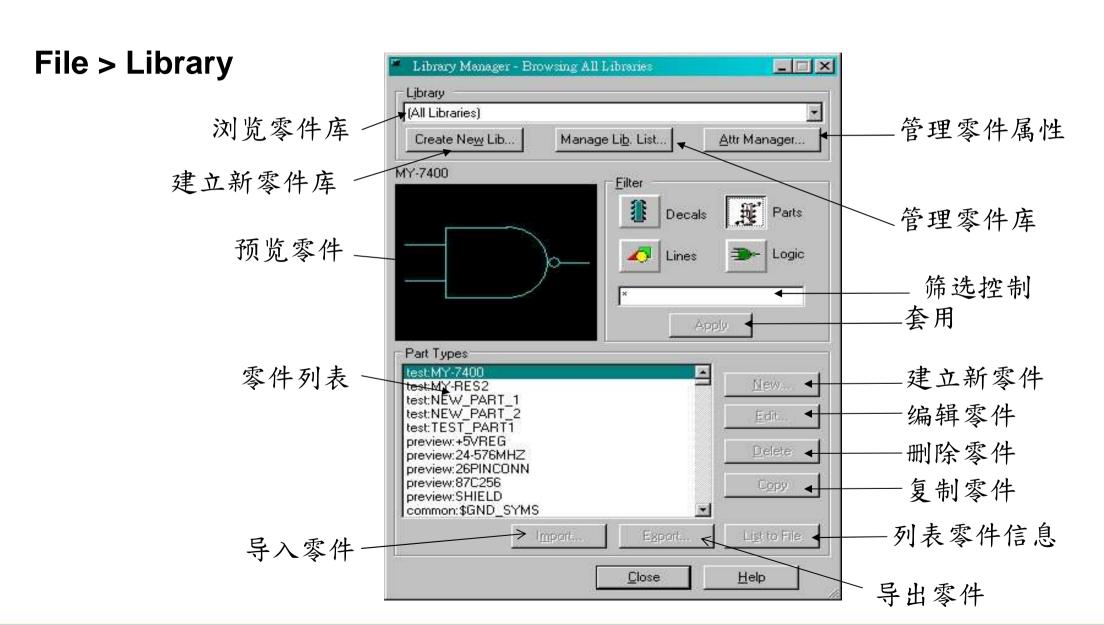
零件库

# 零件库结构

- Part Type (.pt07)
  - Part name
  - Gate and pin information
  - Attributes
  - Points to the PCB Decal and CAE Decal
- **PCB Decal** (.pd07)
  - "Footprint" on PCB board
  - Pad stack information
  - Pin number assignments
- CAE(symbol) Decal (.ld07)
  - Schematic graphical symbol displayed in schematic layout editor
  - No pin number assignments
- **2D Lines** (.ln07)
  - Any drafting item (border, arrow markers, charts, board, copper outlines etc.)

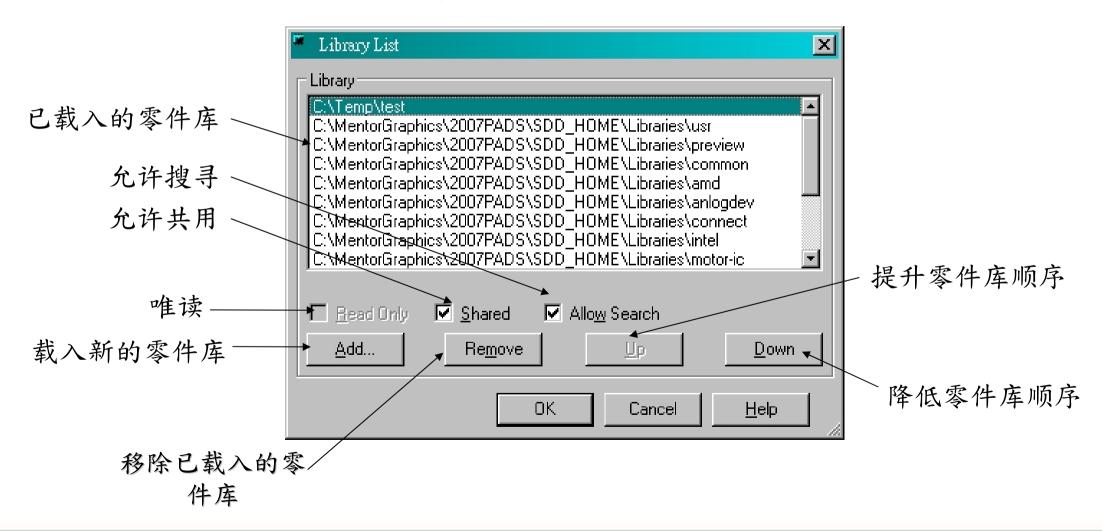


# 零件库管理器



# 管理零件库

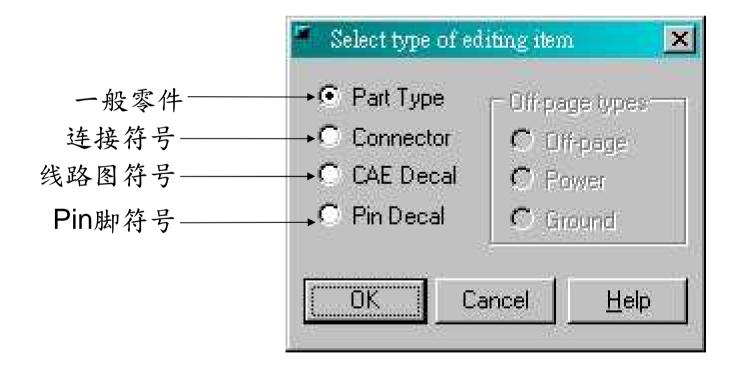
File > Library > Manage Lib. List...



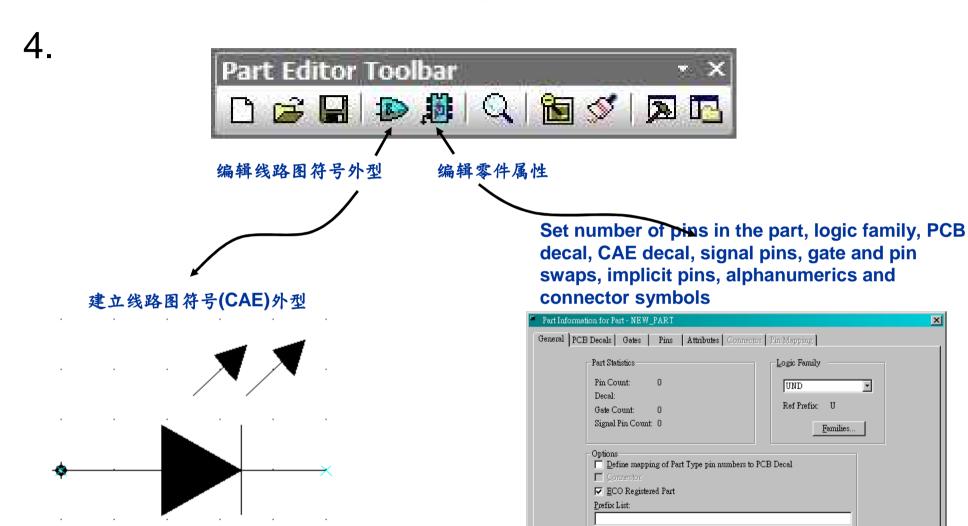
# 建立零件 1/13

- 1. File > Library > Parts > New
- 2. File > New

3.



## 建立零件 2/13

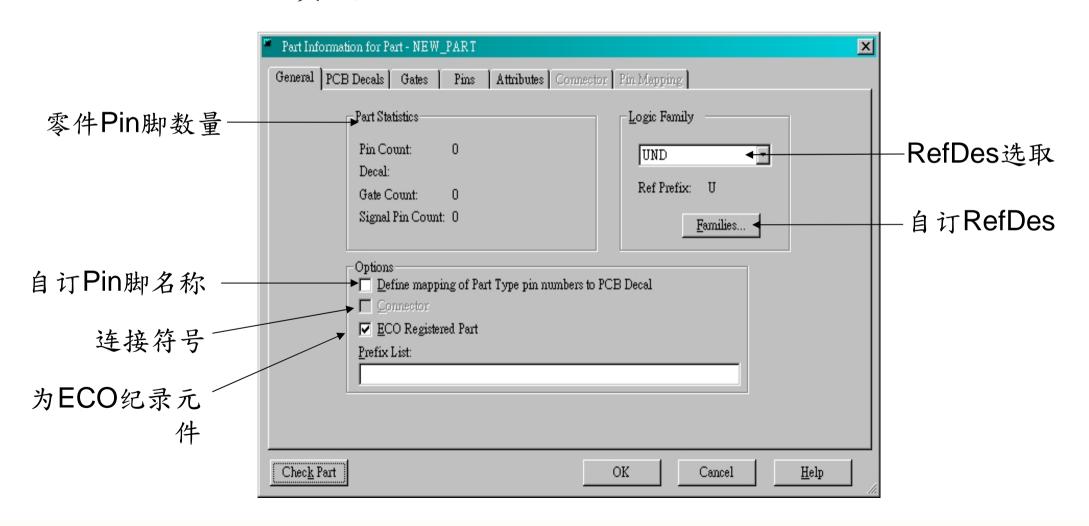


Chec<u>k</u> Part

Cancel

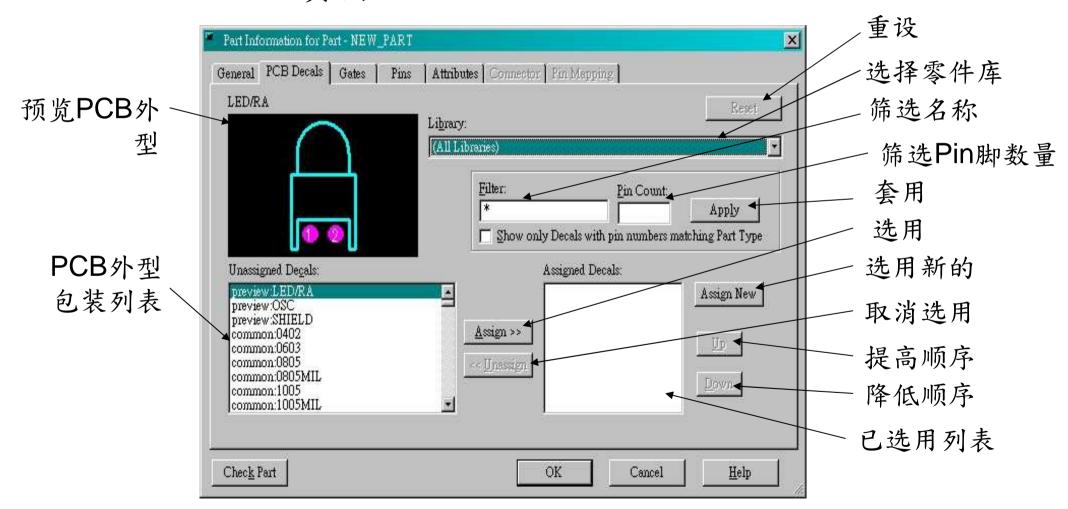
## 建立零件 3/13

#### 5. General 页面



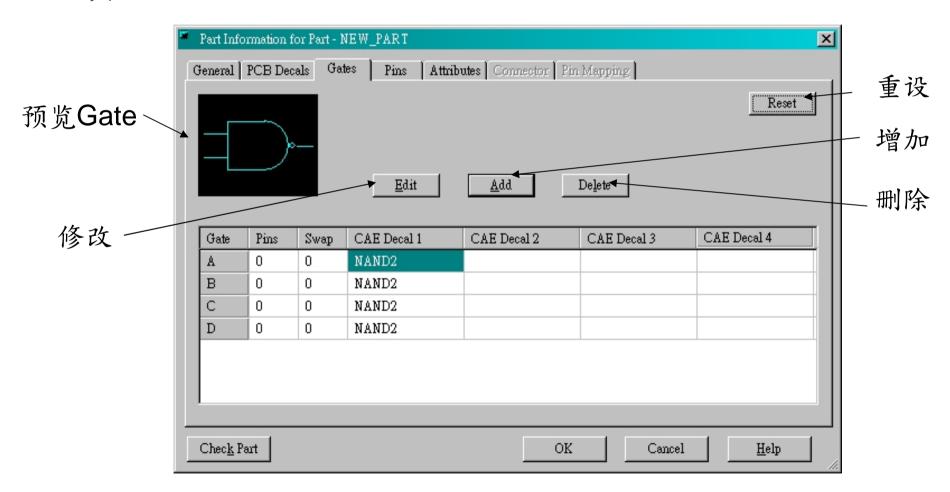
# 建立零件 4/13

#### 6. PCB Decals 页面



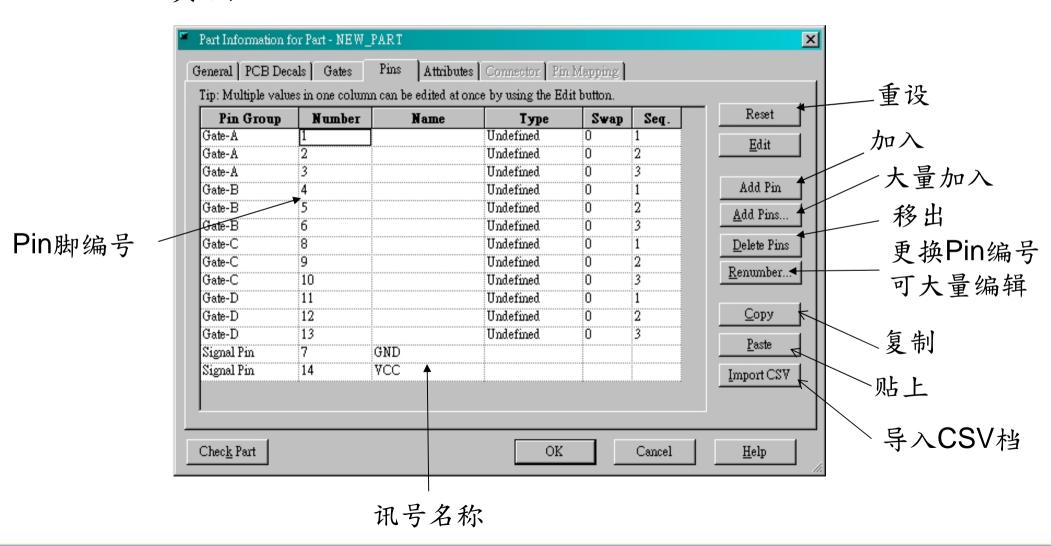
## 建立零件 5/13

#### 7. 页面



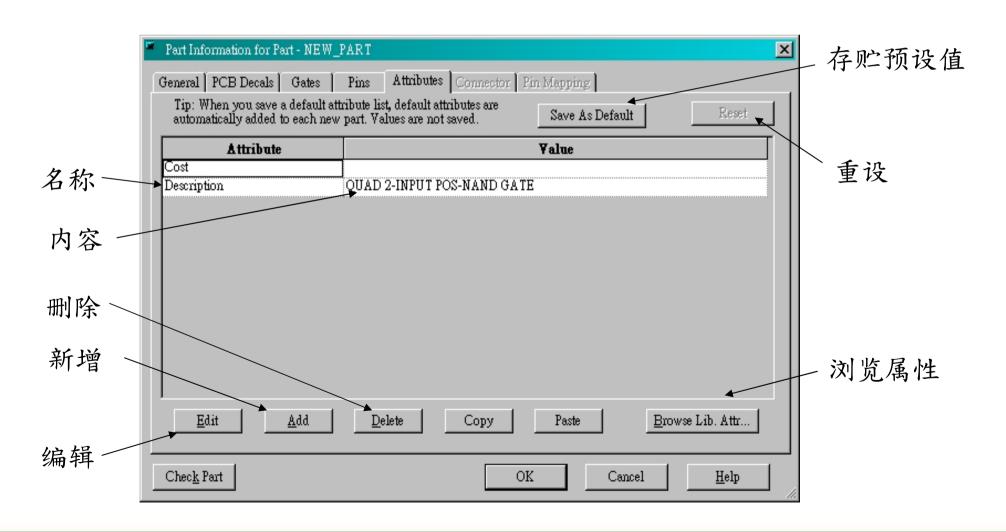
### 建立零件 6/13

#### 8. Pins 页面



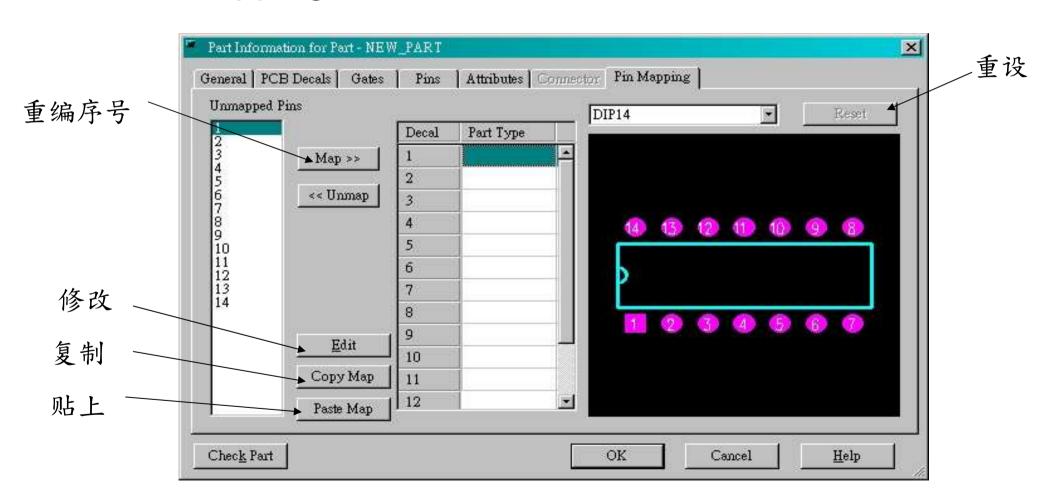
### 建立零件 7/13

#### 9. Attributes 页面



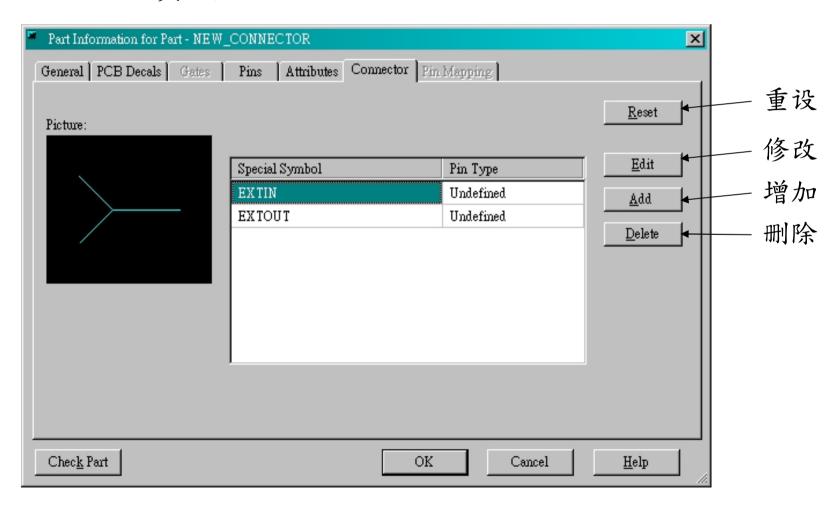
## 建立零件 8/13

#### 10. Pin Mapping



### 建立零件 9/13

#### 11. Connector 页面



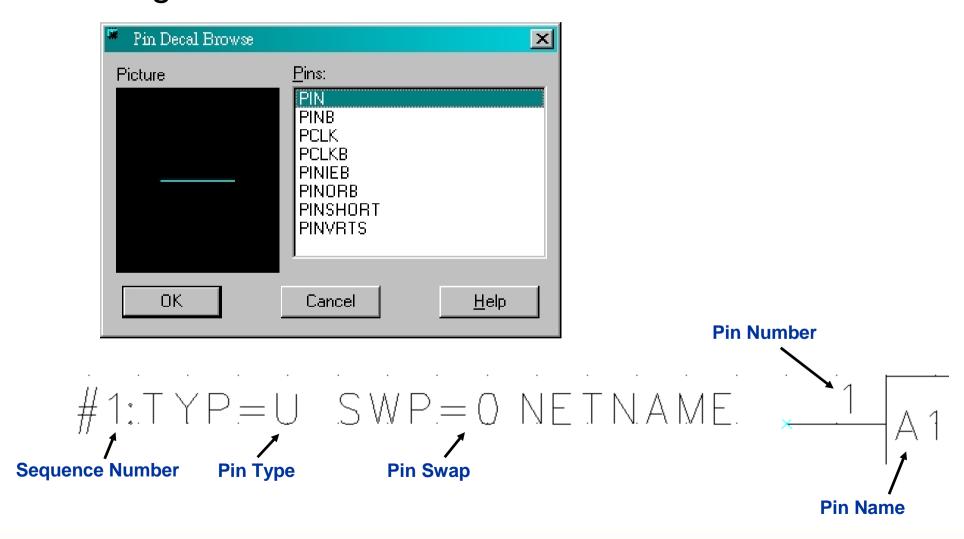
### 建立零件 10/13

### 建立零件 11/13

Symbol Editing Toolbar 13. 加Pin脚 ——— 换Pin脚 ——— 设置Pin脚号码——— 变更Pin脚号码——— 设置Pin脚名称——— 变更Pin脚名称——— 设置Pin脚类别 ——————— 设置Pin脚群组——— 变更Pin脚序号 ———

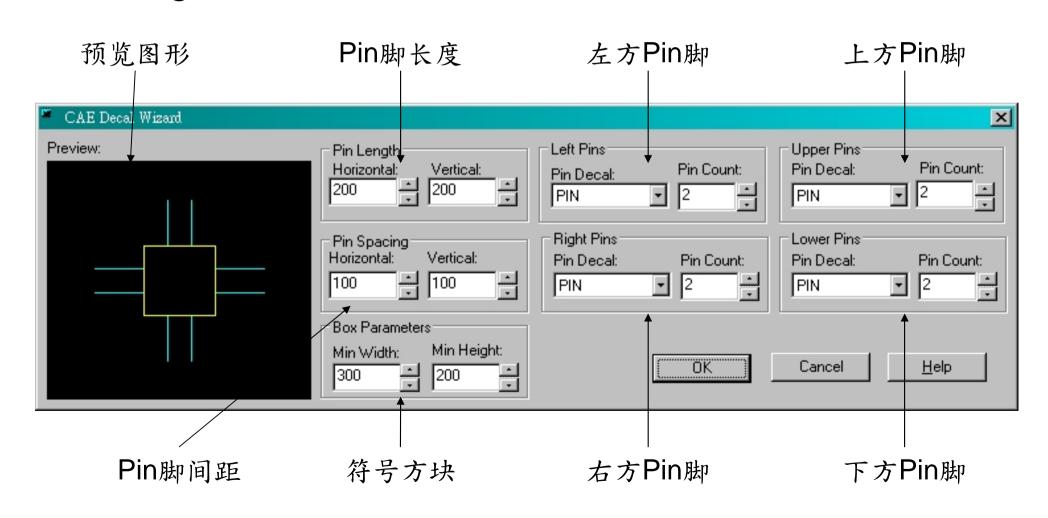
### 建立零件 12/13

#### 14. Design Toolbar > Add Terminal



### 建立零件 13/13

#### 14. Design Toolbar > CAE Decal Wizard

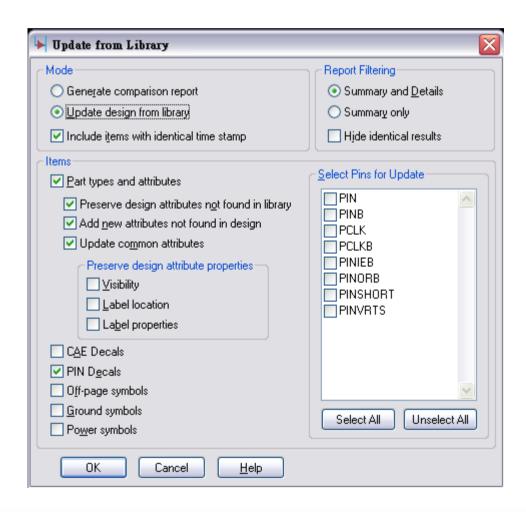


# 零件库更新

Tools > Update from library

设计者可确认最近一次所使用数据库里符号和组件的定义,并对

零件做更新



### 练习三

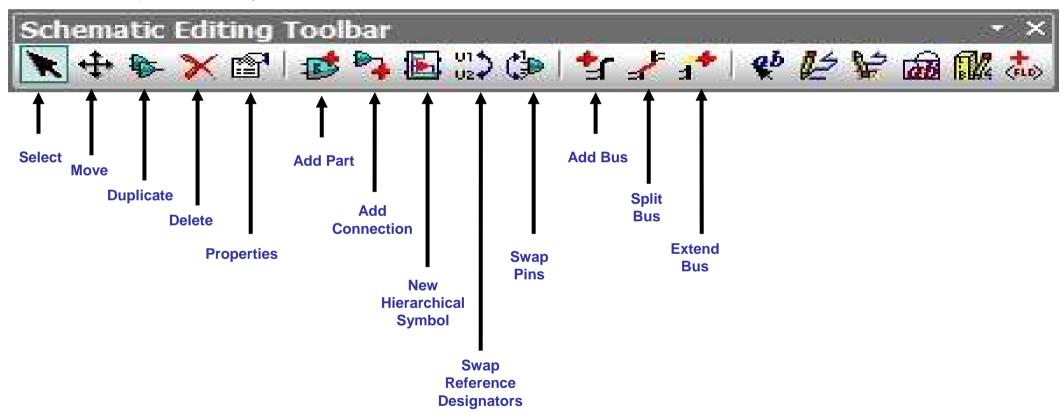
- 建立电阻
- 建立电容
- 建立7400
- CAE Decal Wizard

# 第五课

绘制线路图

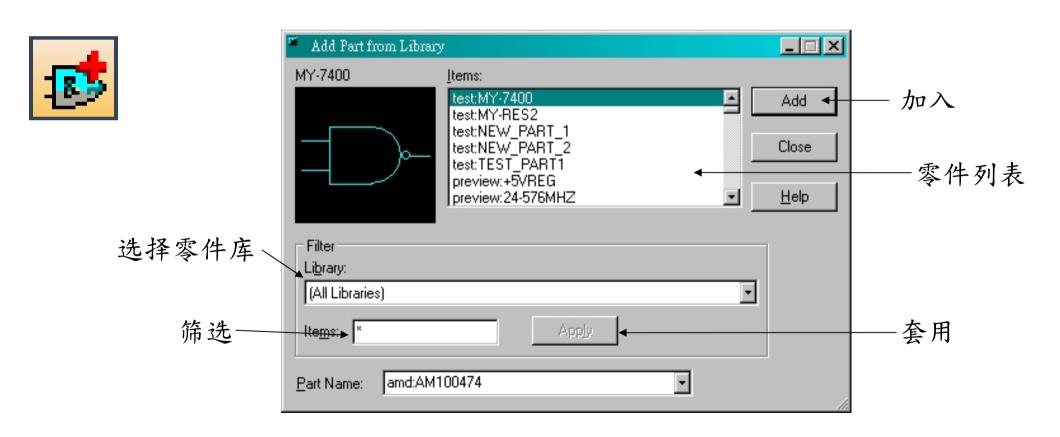
# Design Toolbar

◆设计工具列



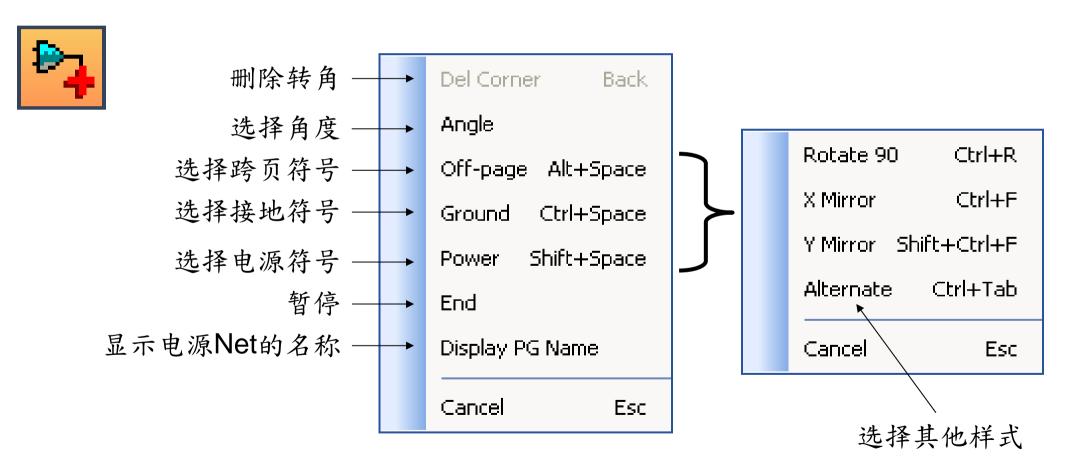
### 摆放线路图零件符号

Design Toolbar > Add Part



### 画电气线

Design Toolbar > Connection



### 画Bus线

#### Design Toolbar > Add Bus



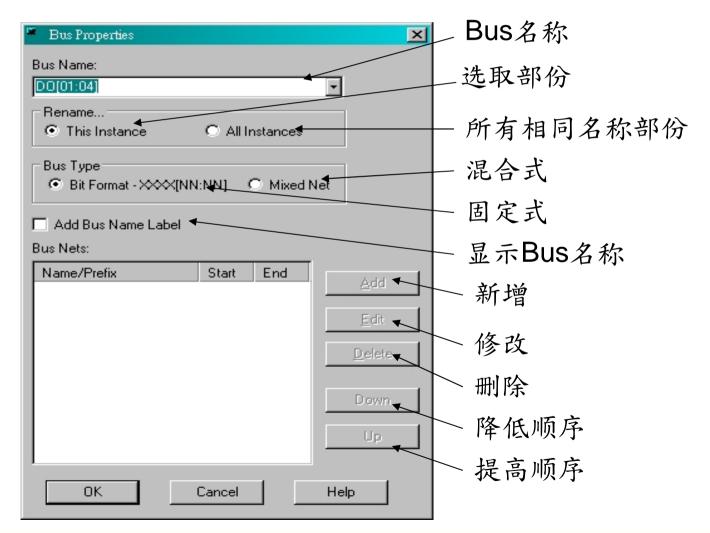
画Bus线



修改Bus线



延伸Bus线

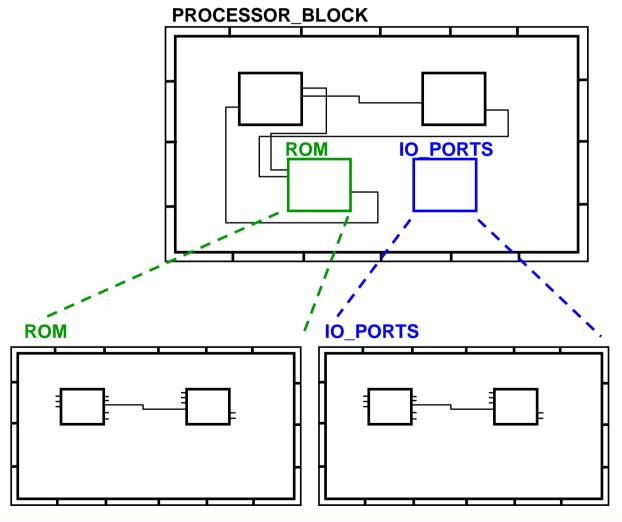


### 建立阶层式线路图 1/2

#### Design Toolbar > New Hierarchical Symbol

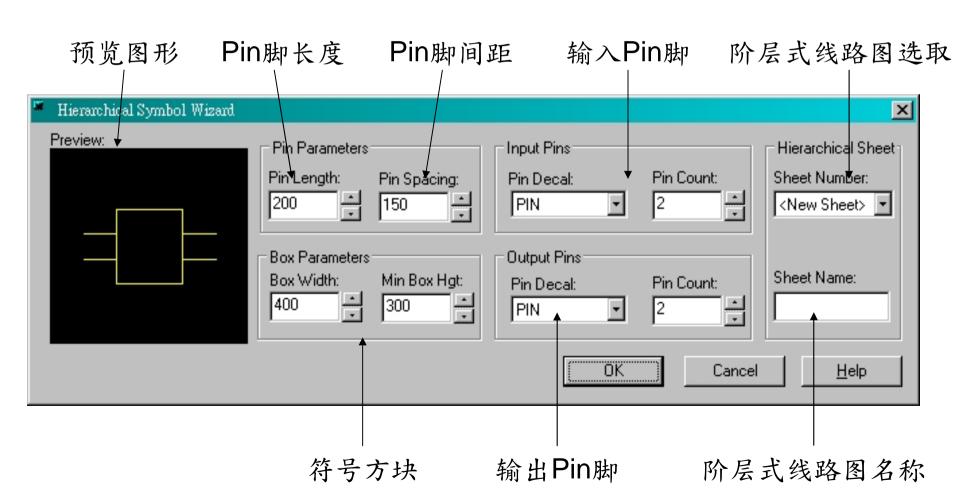
- 具有Net与母层有所 连接(ROM)
- 具有Net不与母层有 所连接(IO\_PORTS)





### 建立阶层式线路图 2/2

Design Toolbar > New Hierarchical Symbol



### 练习四

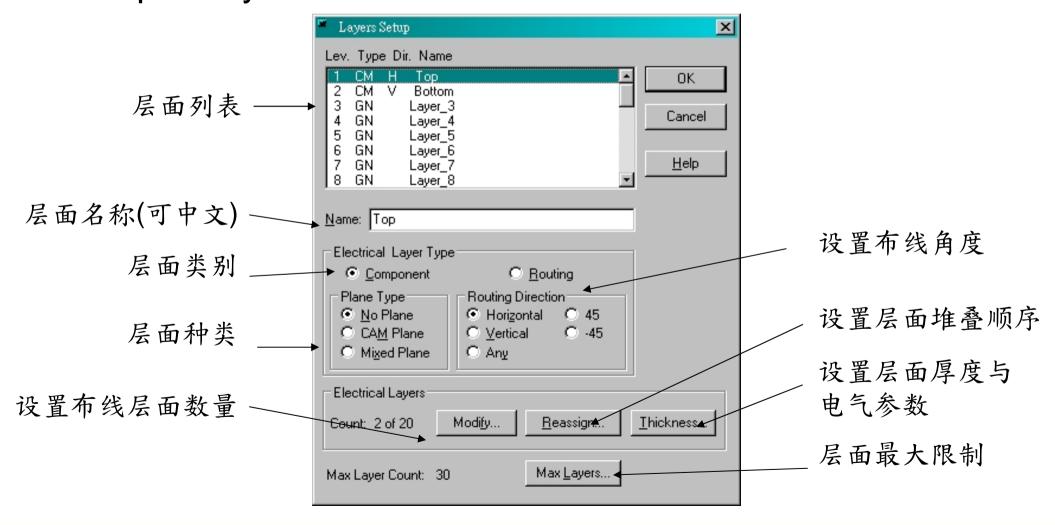
- Add Part
- Add Connection
- Add Power Ground Off-page
- Add Bus
- Add Hierarchical Symbol

# 第六课

PCB设置与规则

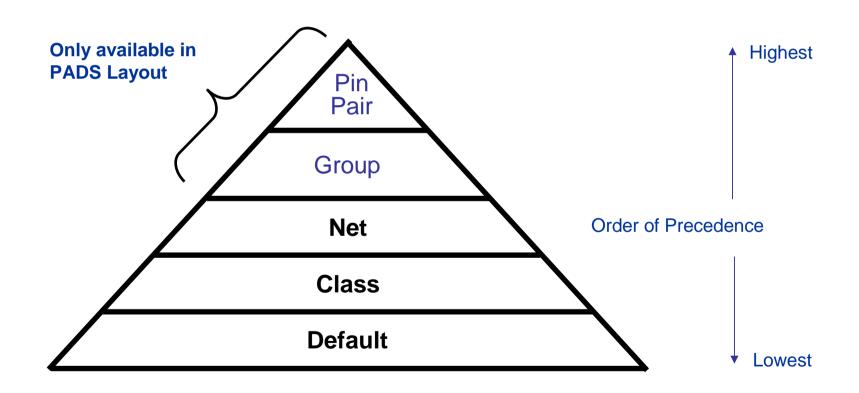
### 层面堆叠

Setup > Layer Definition



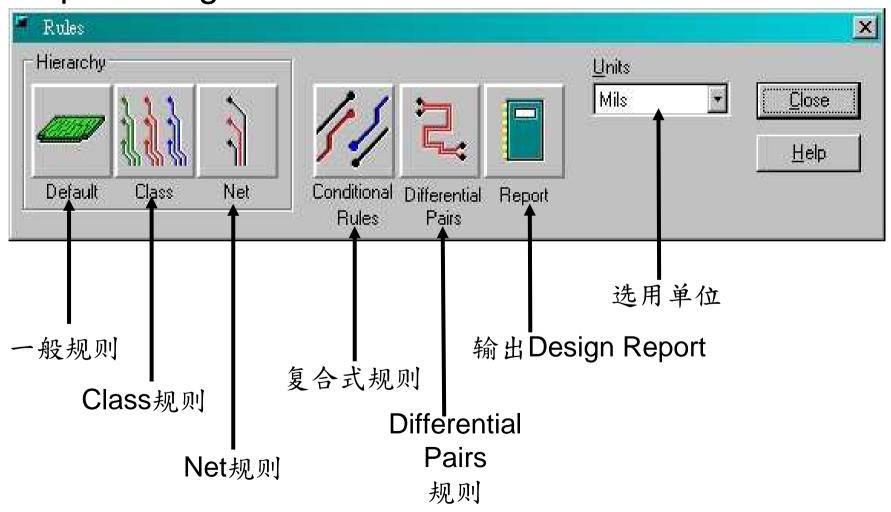
### 设置规则

• 规则优先顺序



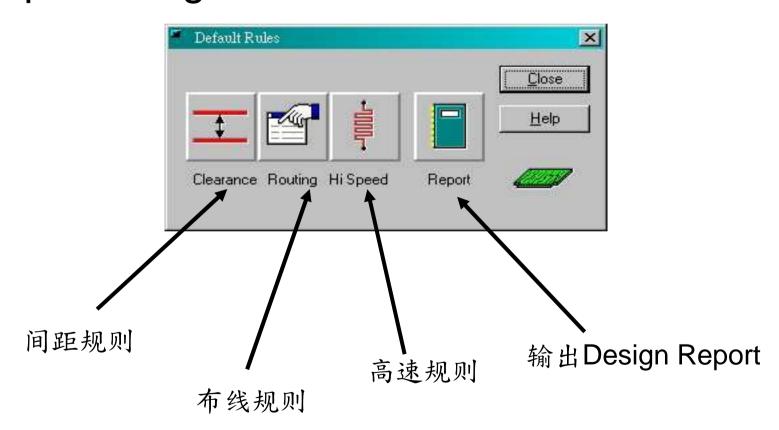
### 设置规则

Setup > Design Rules

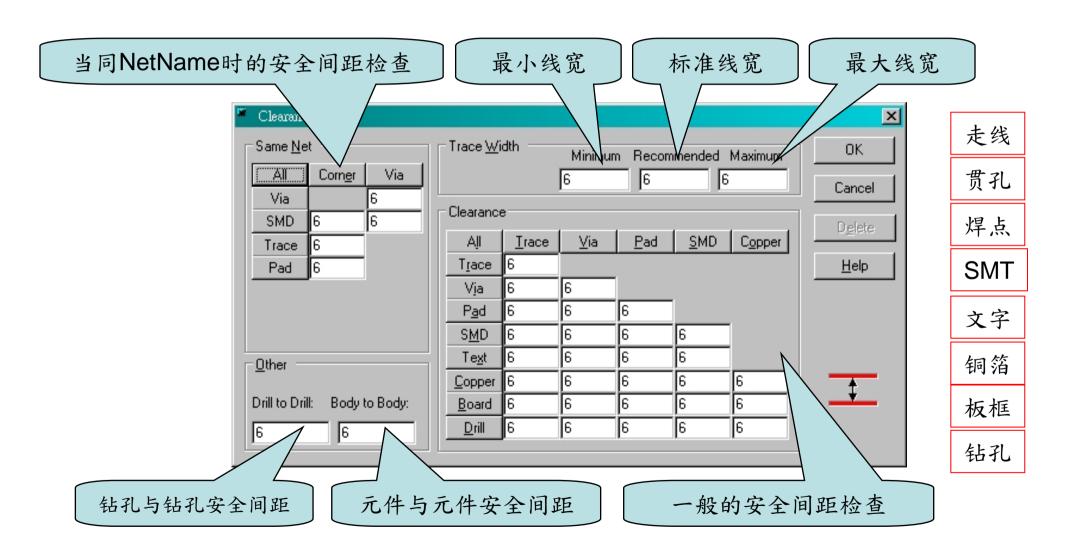


### 设置规则

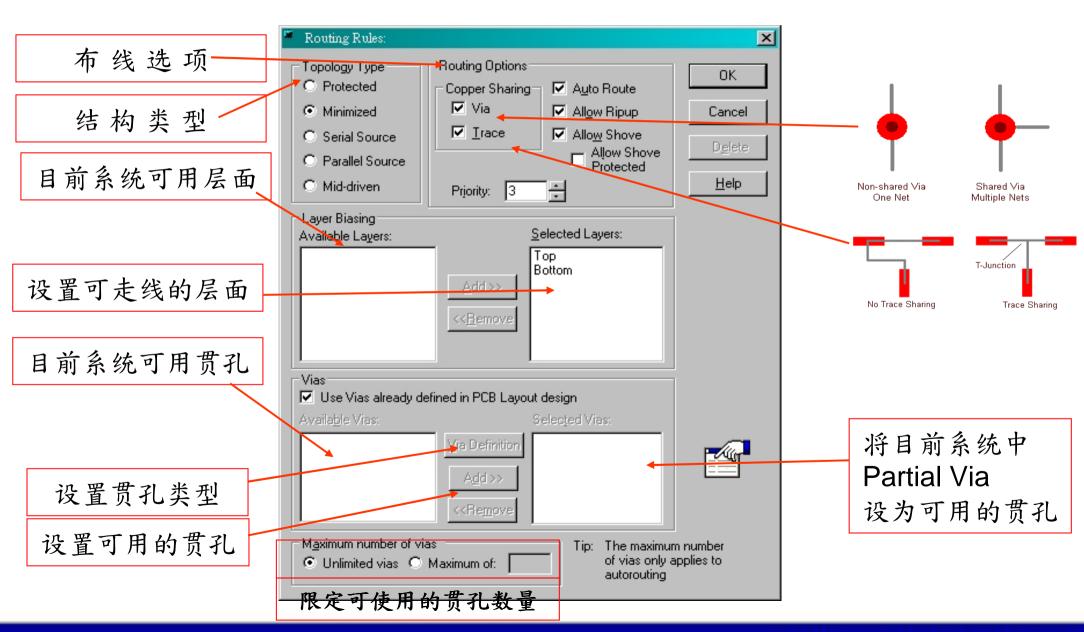
Setup > Design Rules > Default



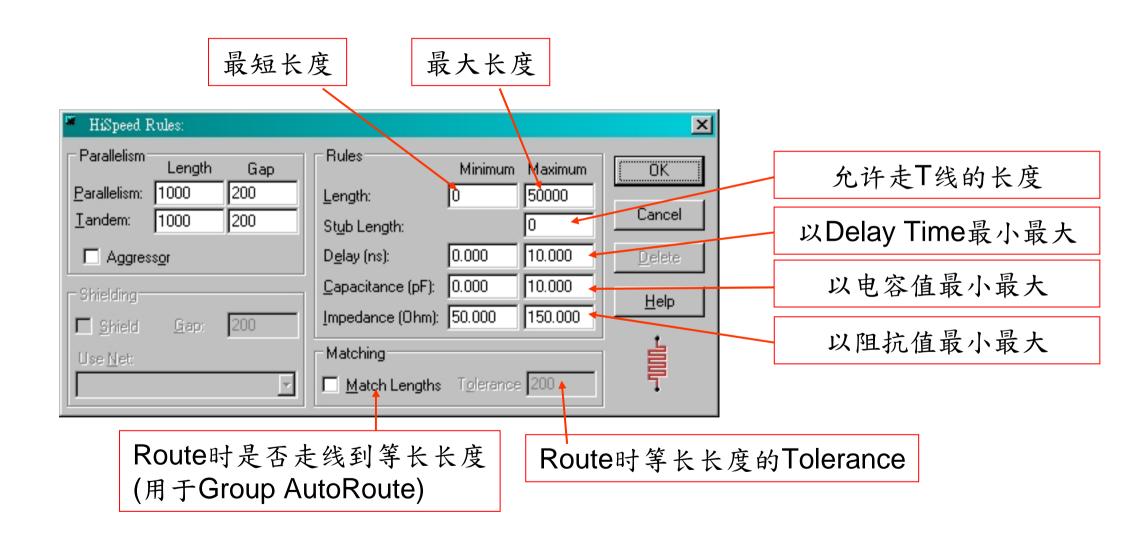
### Setup > Design Rules > Default > Clearance



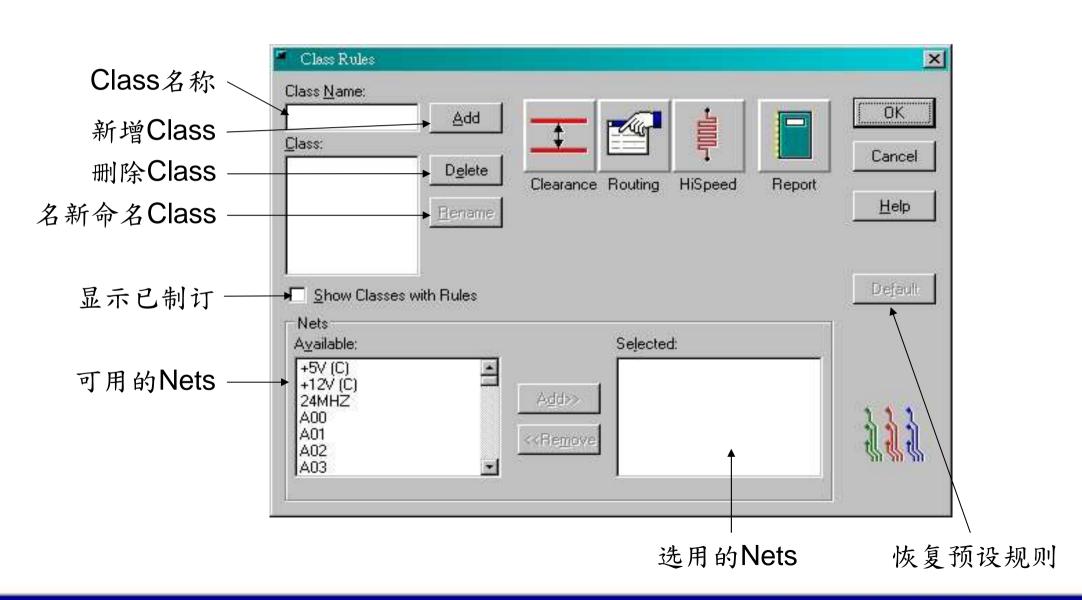
#### Setup > Design Rules > Default > Routing



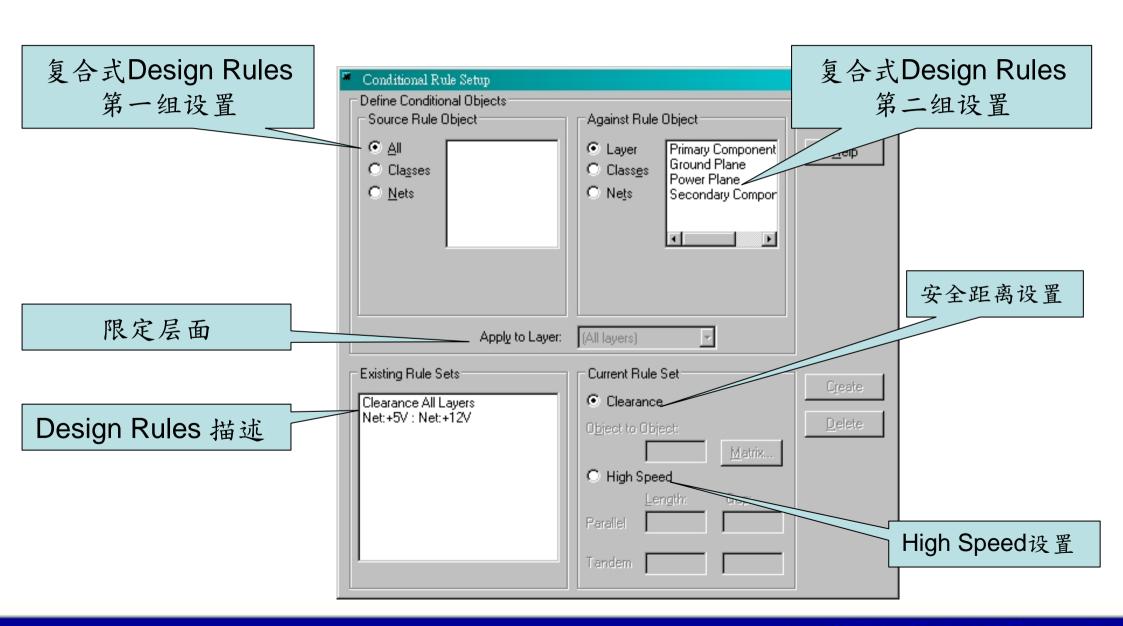
#### Setup > Design Rules > Default > HiSpeed



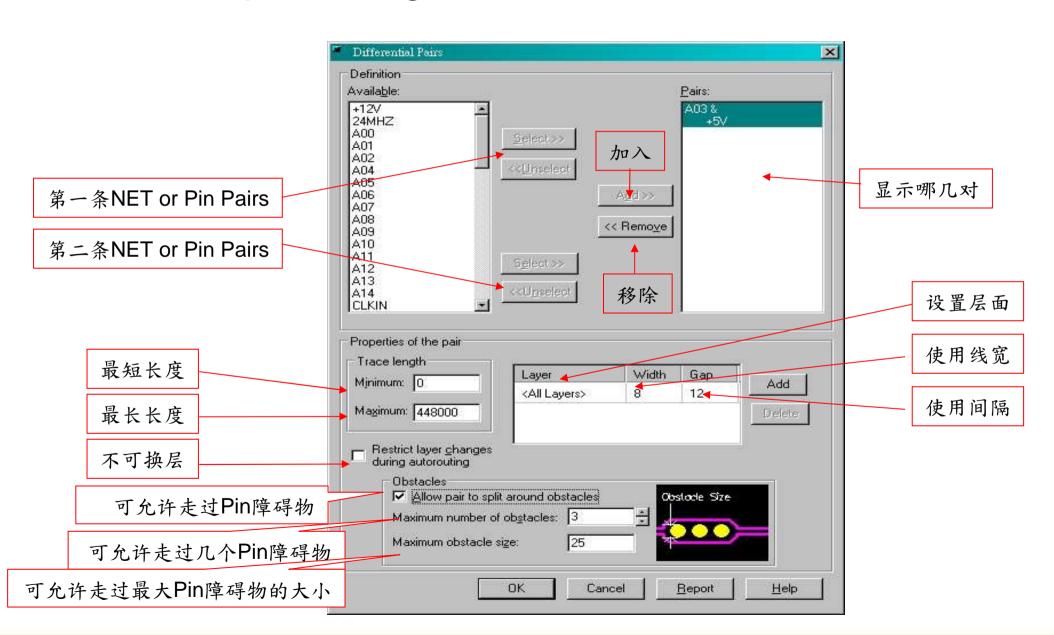
#### Setup > Design Rules > Class



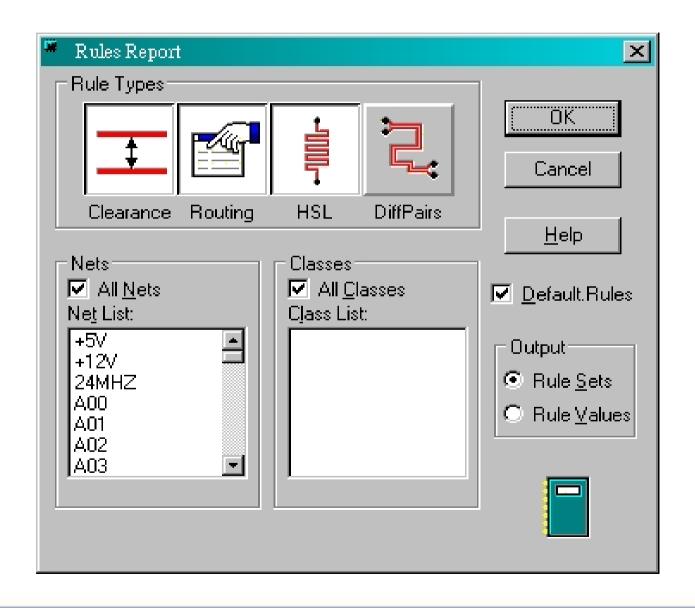
#### Setup > Design Rules > Conditional Rule



#### Setup > Design Rules > Differential Pairs



#### Setup > Design Rules > Report



#### 练习五

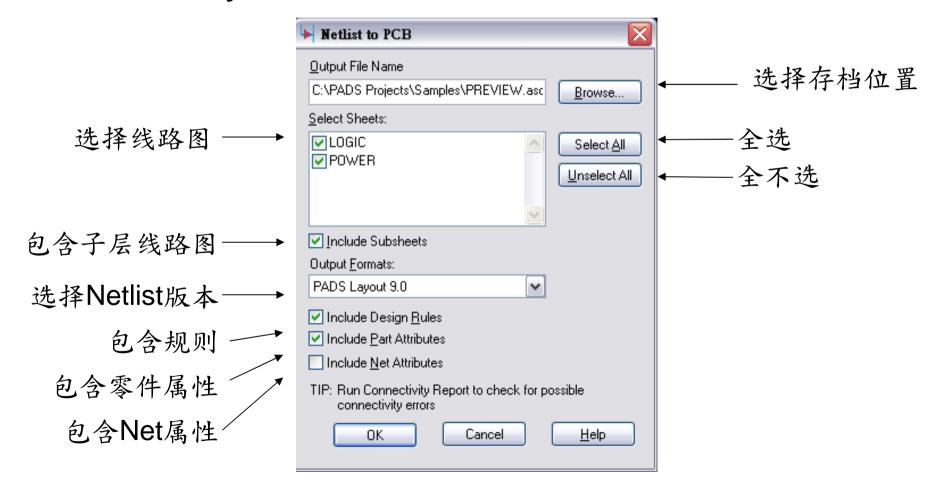
- 层面堆叠
- Clearance Rule
- Routing Rule
- HiSpeed Rule
- Class Rule
- Conditional Rule
- Differential Pairs
- Report

第七课

资料输出

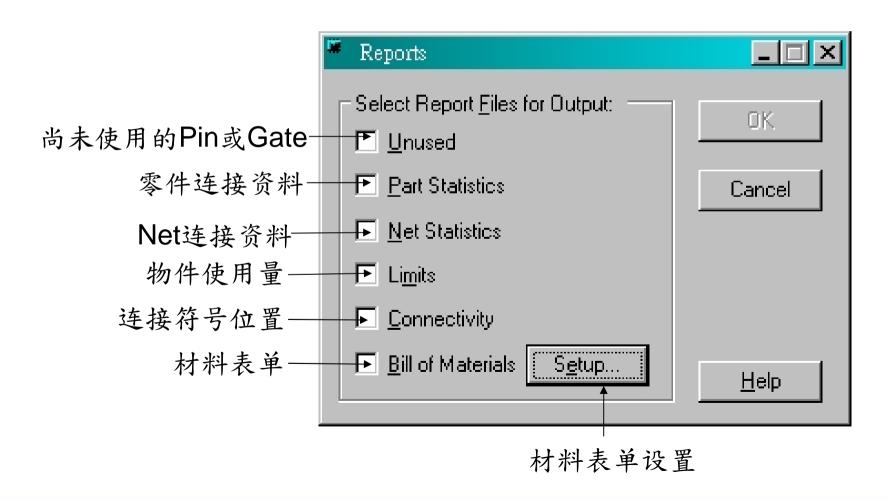
# 输出连线关系(Netlist)文件

Tools > Layout Netlist



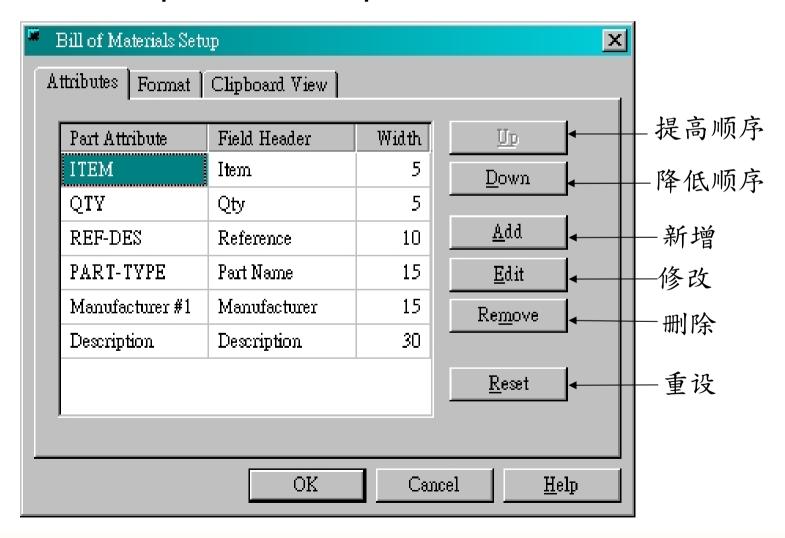
### 输出报表

File > Reports



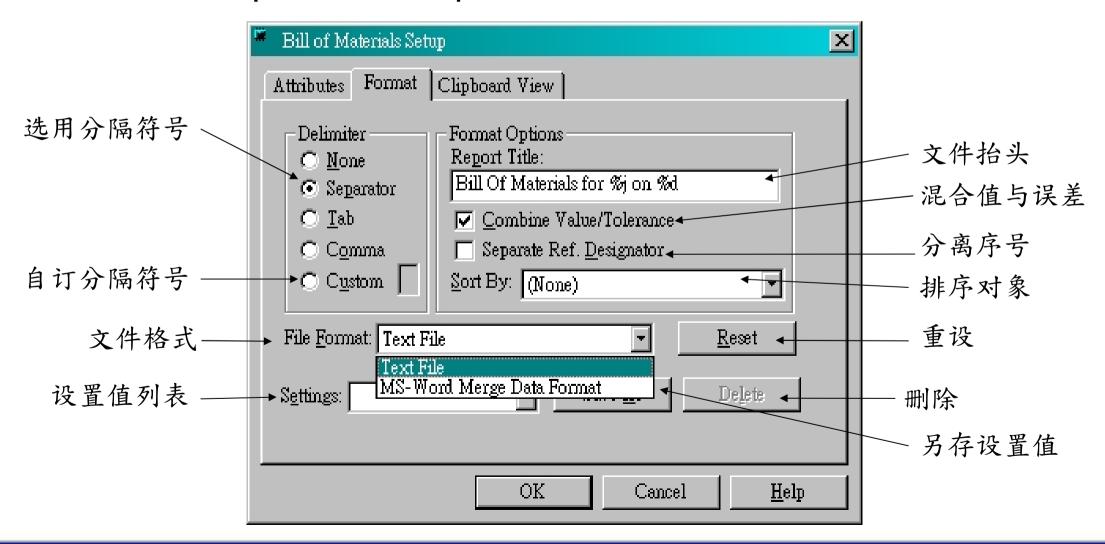
### 输出报表 1/3

File > Reports > Setup > Attributes 页面



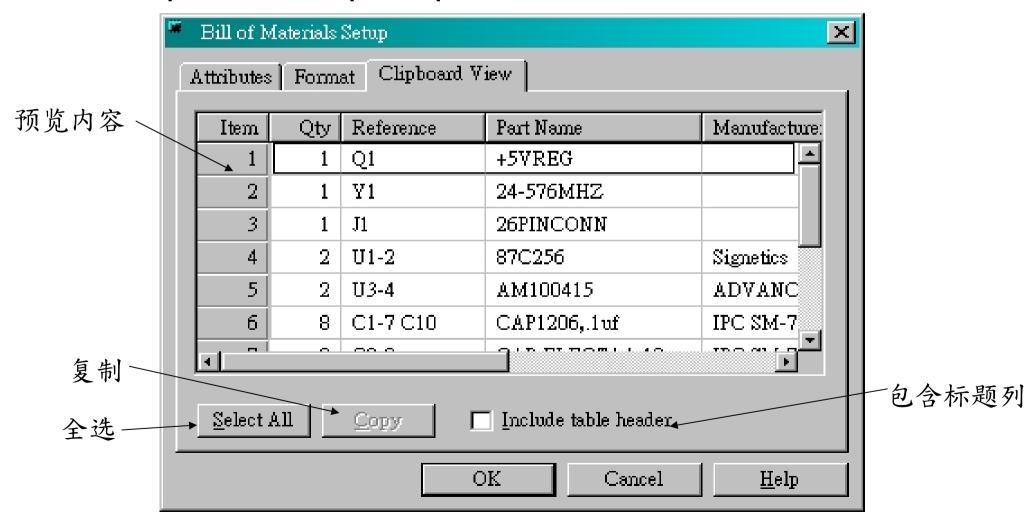
### 输出报表 2/3

• File > Reports > Setup > Format 页面



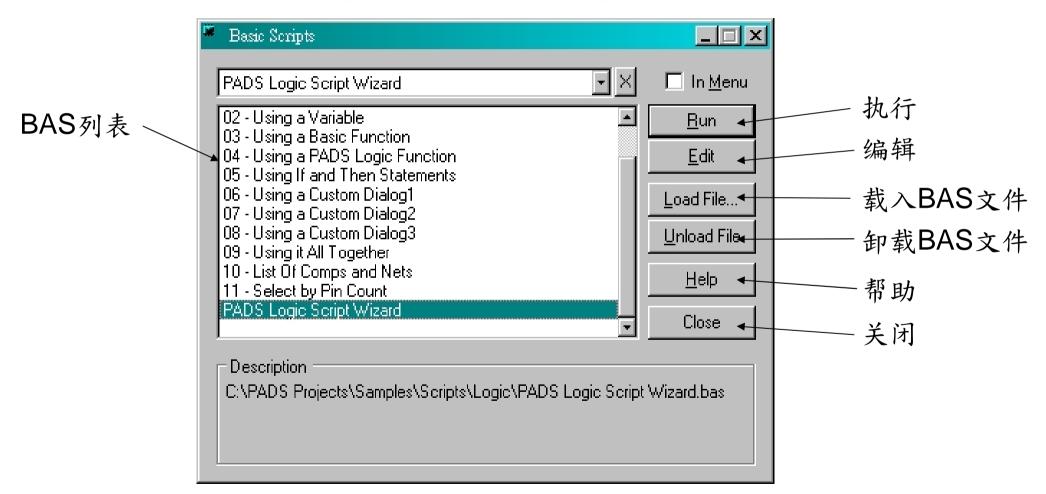
### 输出报表 3/3

File>Reports>Setup>Clipboard View页面



### 辅助程序与范例

Tools > Basic Scripts > Basic Scripts...



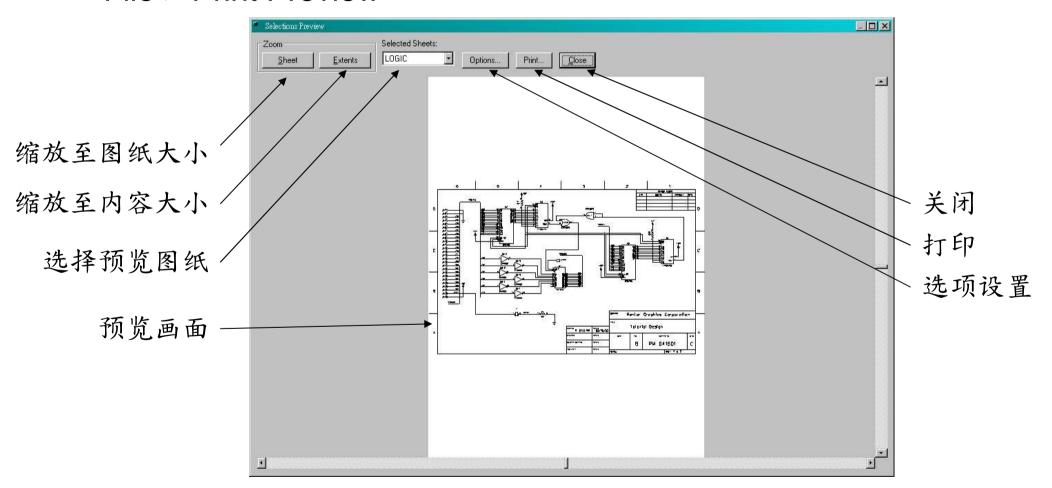
# 打印 1/3

• File > Print



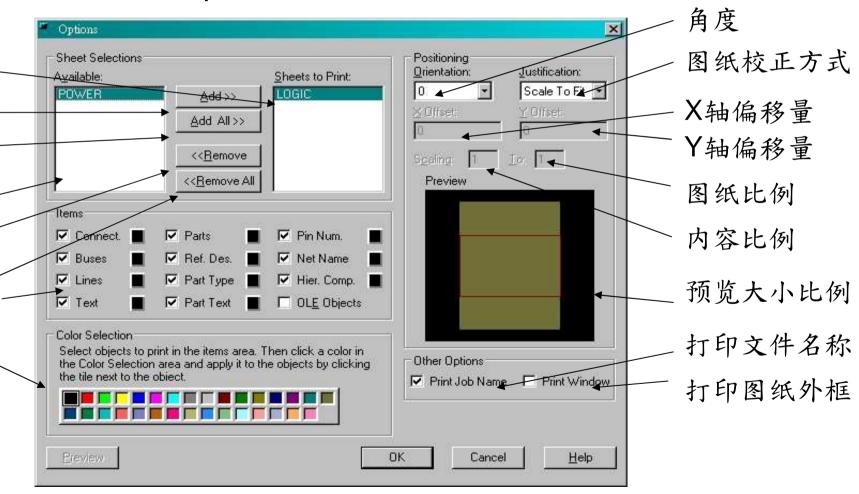
# 打印 2/3

- File > Print > Preview
- File > Print Preview

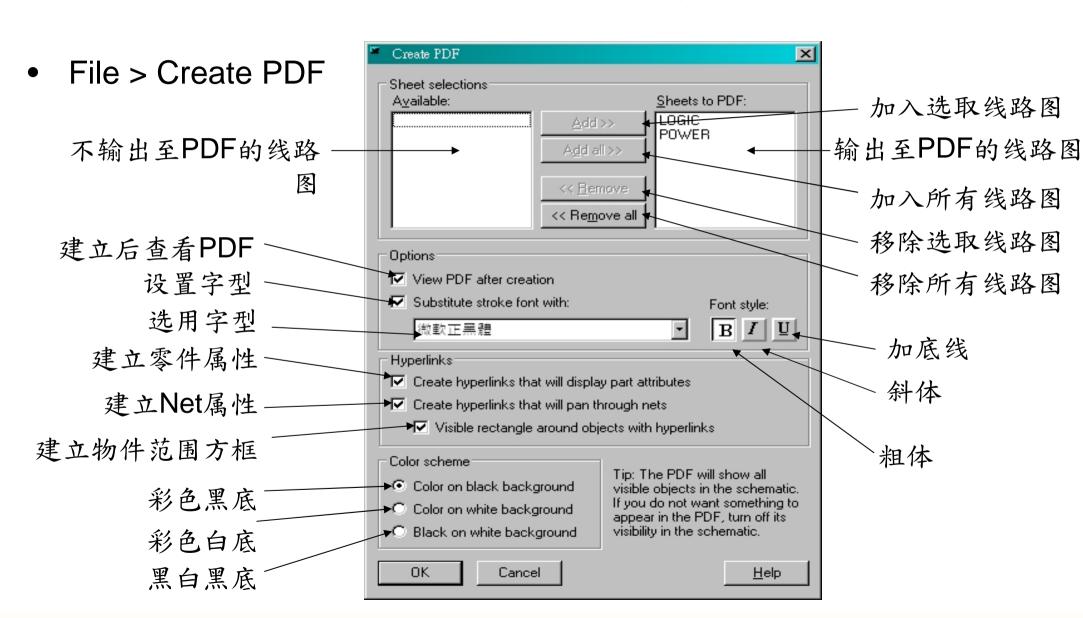


# 打印 3/3

- File > Print > Options
- File > Print Preview > Options

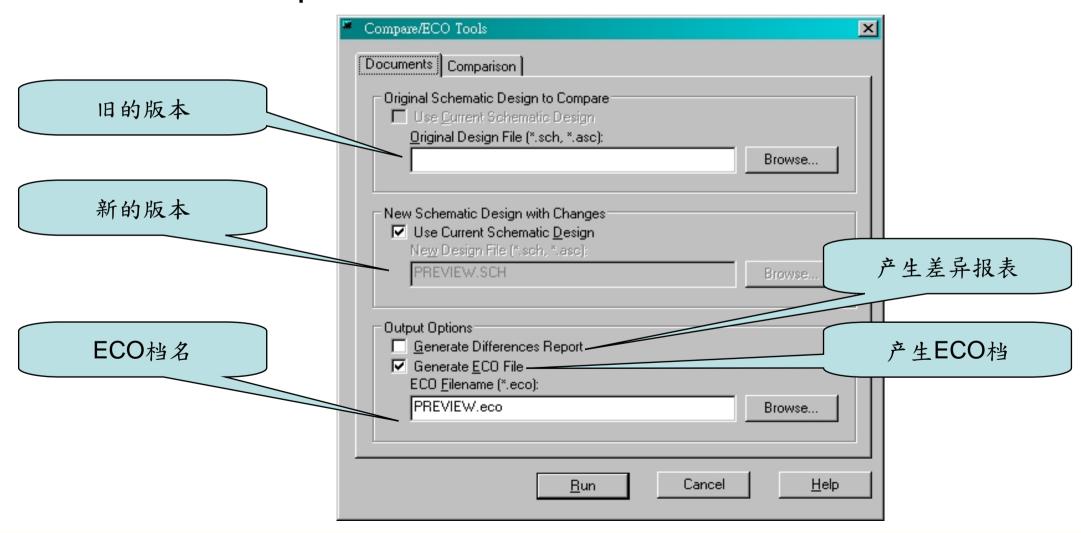


### 建立PDF文件



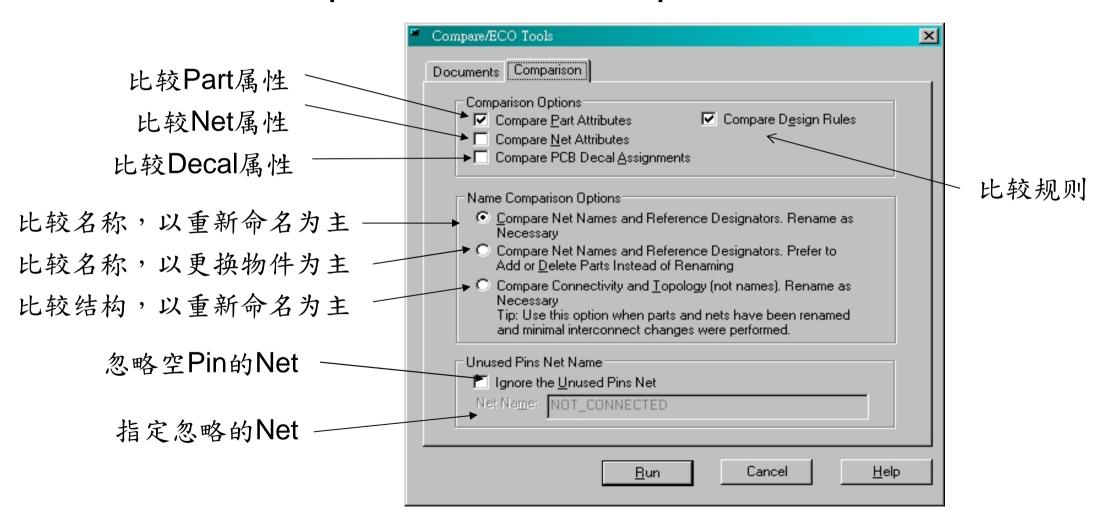
#### ECO比较 1/2

Tools > Compare/ECO > Documents 页面



#### ECO比较 2/2

Tools > Compare/ECO > Comparison 页面



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#### 练习六

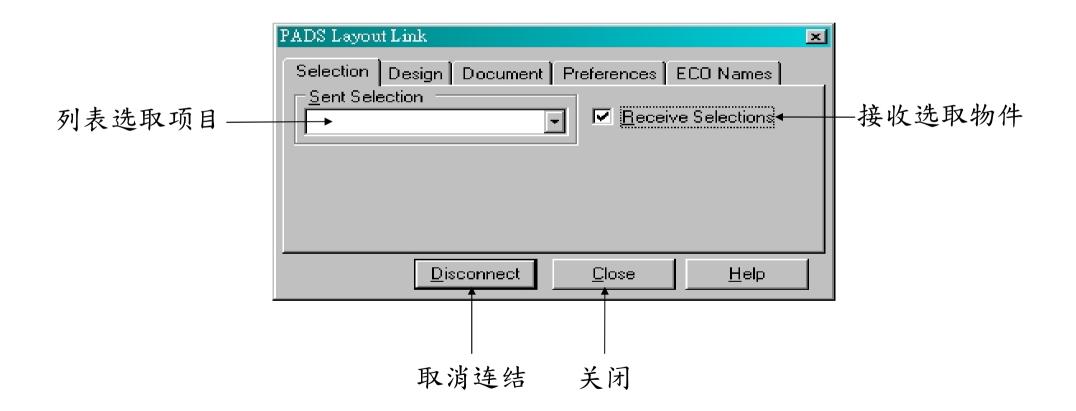
- 输出连线关系(Netlist)文件
- 输出报表
- 辅助程序与范例
- 打印
- 建立PDF文件
- ECO比较

# 第八课

连结器

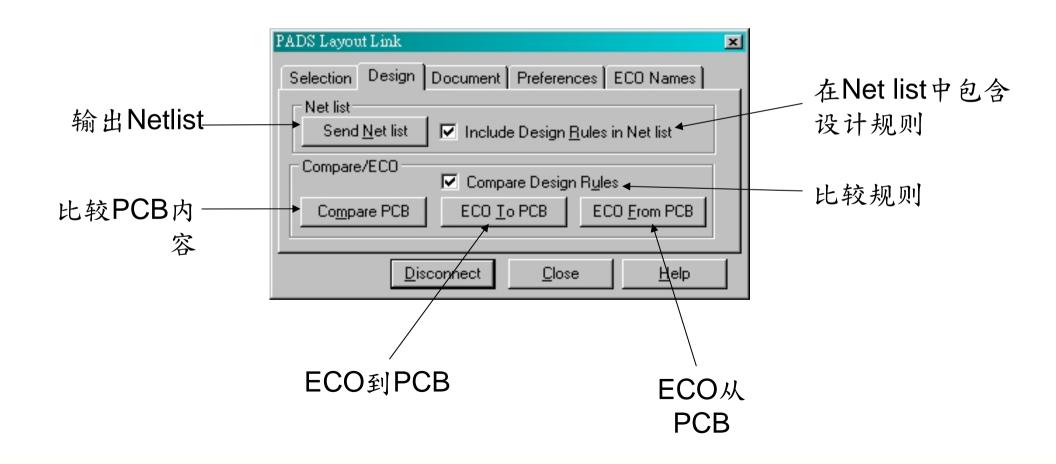
# PADS Layout 连结器 1/5

Tools > PADS Layout > Selection 页面



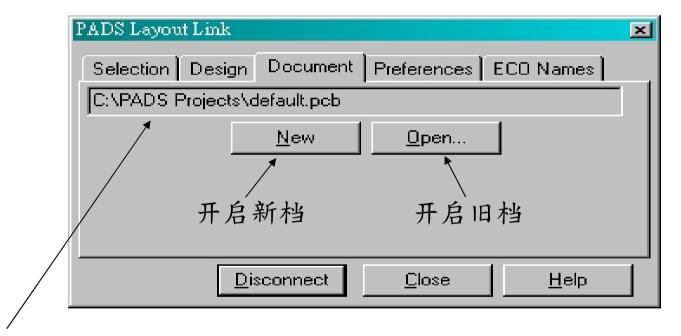
# PADS Layout 连结器 2/5

Tools > PADS Layout > Design 页面



# PADS Layout 连结器 3/5

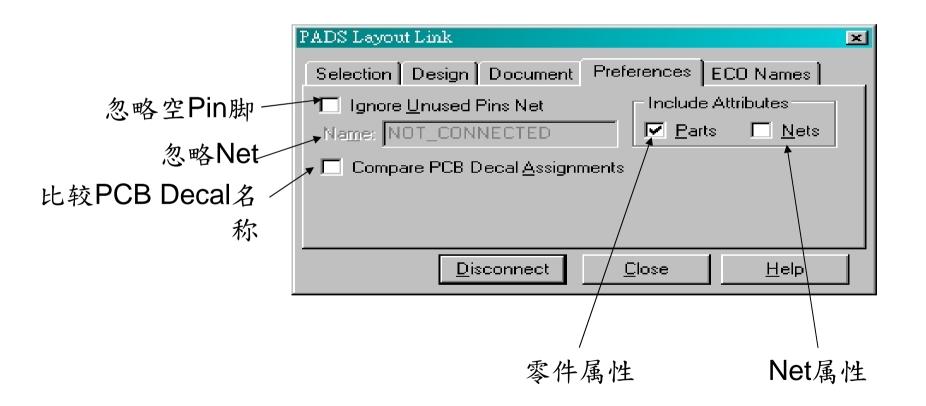
Tools > PADS Layout > Document 页面



连结Layout文件名称

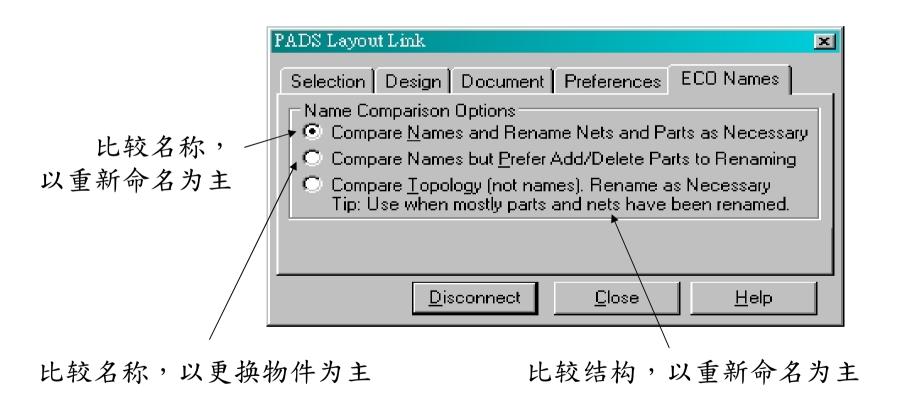
# PADS Layout 连结器 4/5

Tools > PADS Layout > Preferences 页面



# PADS Layout 连结器 5/5

Tools > PADS Layout > ECO Names 页面



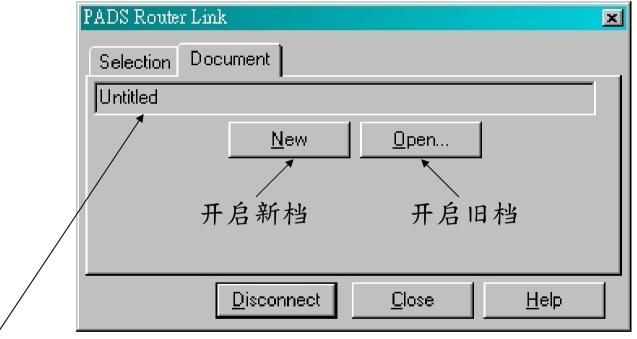
#### PADS Router 连结器 1/2

• Tools > PADS Router > Selection 页面



#### PADS Router 连结器 2/2

• Tools > PADS Router > Document 页面



连结Router文件名称

### 练习七

- PADS Layout 连结器
- PADS Router 连结器

# 课程结束

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