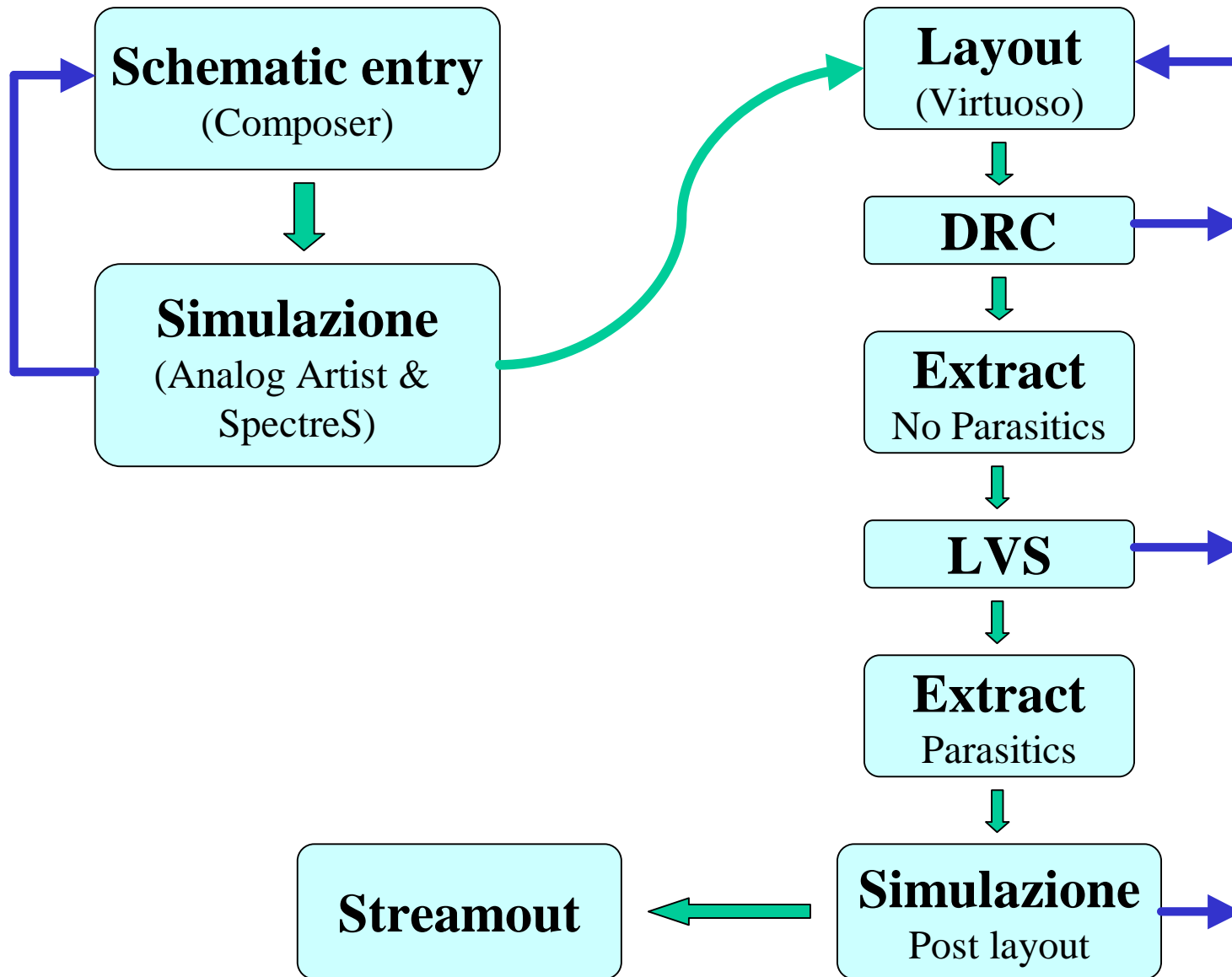
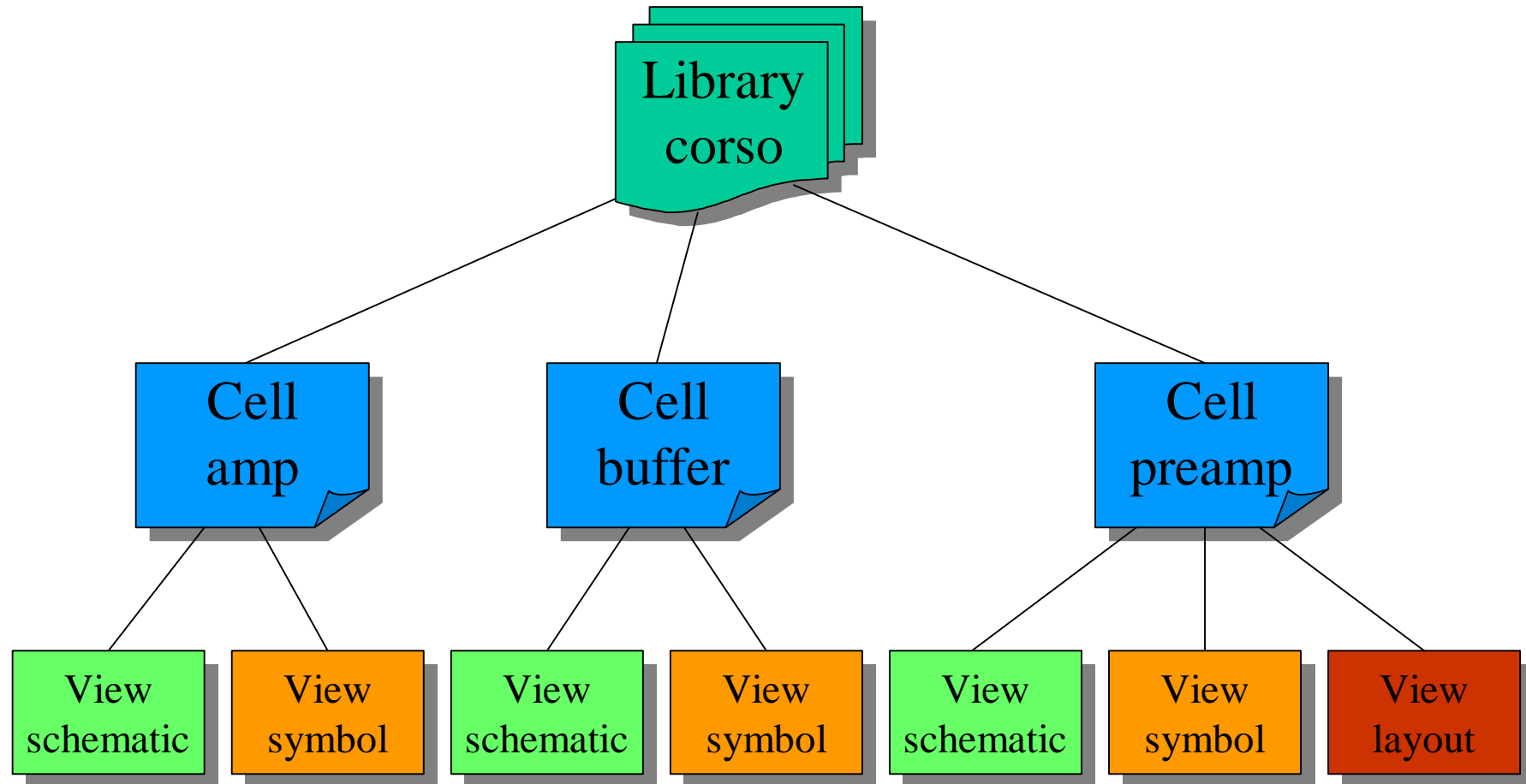


Flusso di progettazione di un ASIC analogico



Struttura delle librerie Cadence



Come si lanciano le applicazioni (icms e openbook)

- icms - ambiente analogico/digitale
- layout - layout editor
- icde - design entry
- icfb - front to back (tutto)
- openbook

L'ambiente Cadence

Schematic Window

Library Manager

The image displays the Cadence Composer-Schematic Editing environment. The main window, titled "Composer-Schematic Editing: miocorso preamp schematic", shows a schematic diagram of a preamp circuit. The circuit includes an input "in", a network "net10", and an output "out". It features several components: a buffer "b1", a preamp "preamp", and four operational amplifiers "MA1", "MA2", "MA3", and "MA4". Power supplies are labeled "avdd!" and "avss!". Component values are specified, such as "500.0000u", "150.00000u", "400.00000u", and "160.00000u".

The Library Manager window, titled "Library Manager: WorkArea: /home/giuseppe/corso", is open on the left. It shows a table of components:

Library	Category	Cell	View
miocorso		preamp	Ischematic
SCHEMA		amp	layout
SFTLIB		buffer	schematic
TECH_BYE		chan	symbol
TECH_CYE		fbnetw	
US_8ths		preamp	
analogLib			
basic			
cdsDefTech			
corso			
functional			
microwave			
miocorso			
sbaLib			

The Console window, titled "icde - Log: /home/giuseppe/CDS.log", is open at the bottom. It shows the following text:

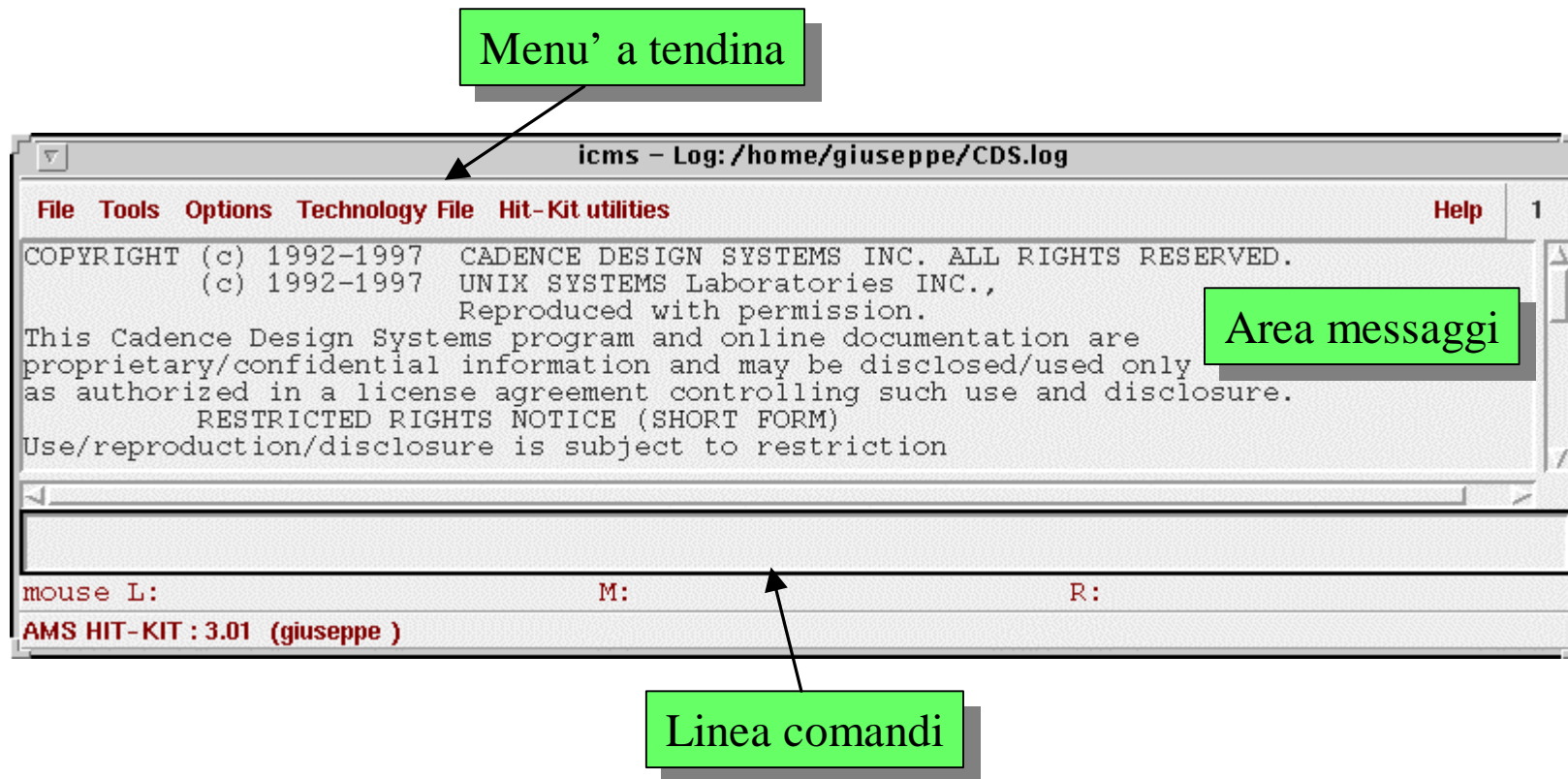
```
File Tools Options Technology File Hit-Kit utilities Help 1
Loading $HOME/.cdsinit_personal file from the AMS .cdsinit file.
END OF USER CUSTOMIZATION

mouse L: schSingleSelectPt() M: schHiMousePopUp() R: hiRepeat()
AMS HIT-KIT : 3.01 (giuseppe - DFII)
```

CIW

Command Interpreter Window (CIW)

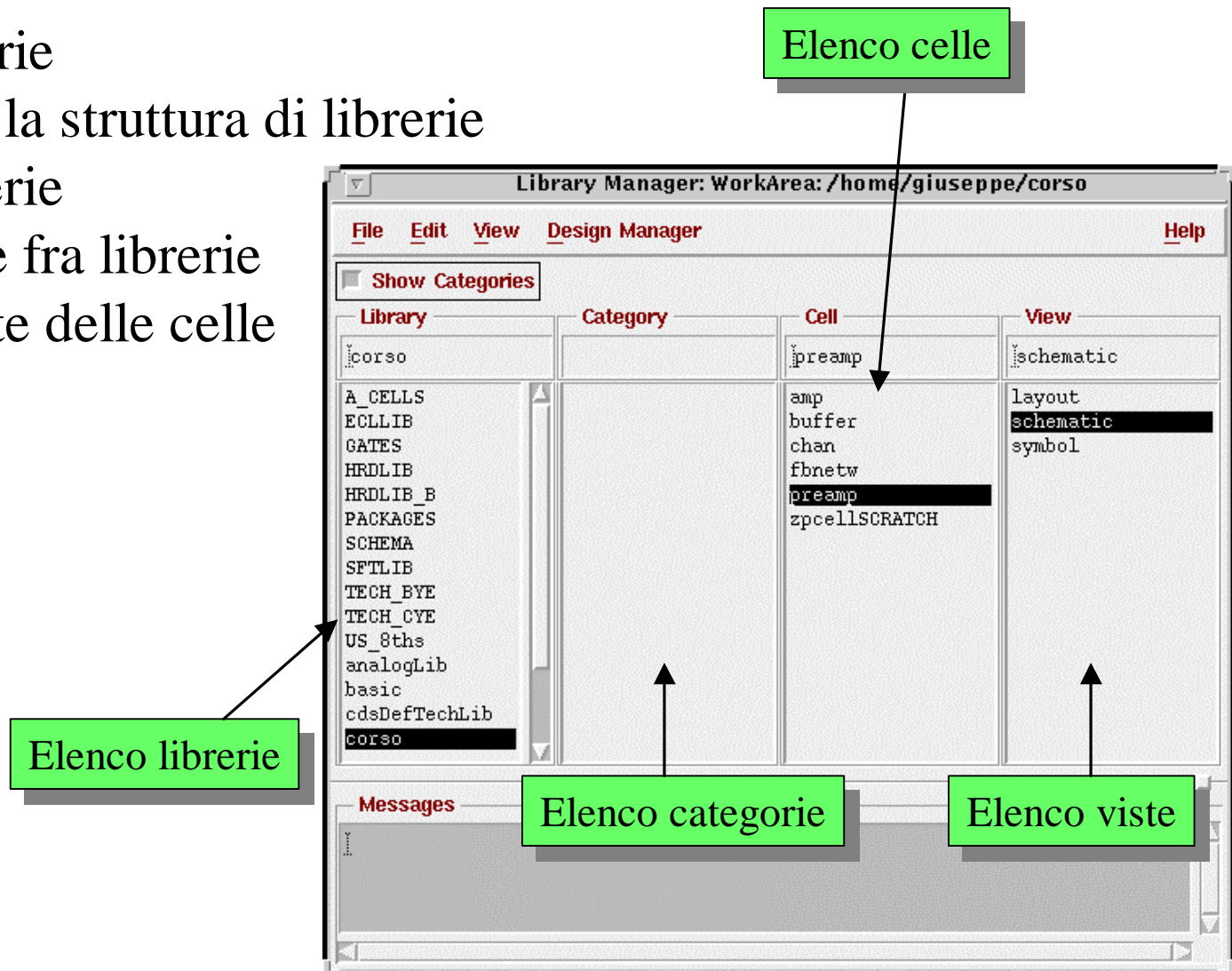
- Visualizza i messaggi e gli errori
- Permette di inserire comandi
- Permette di lanciare utility dal menu'



Library Manager

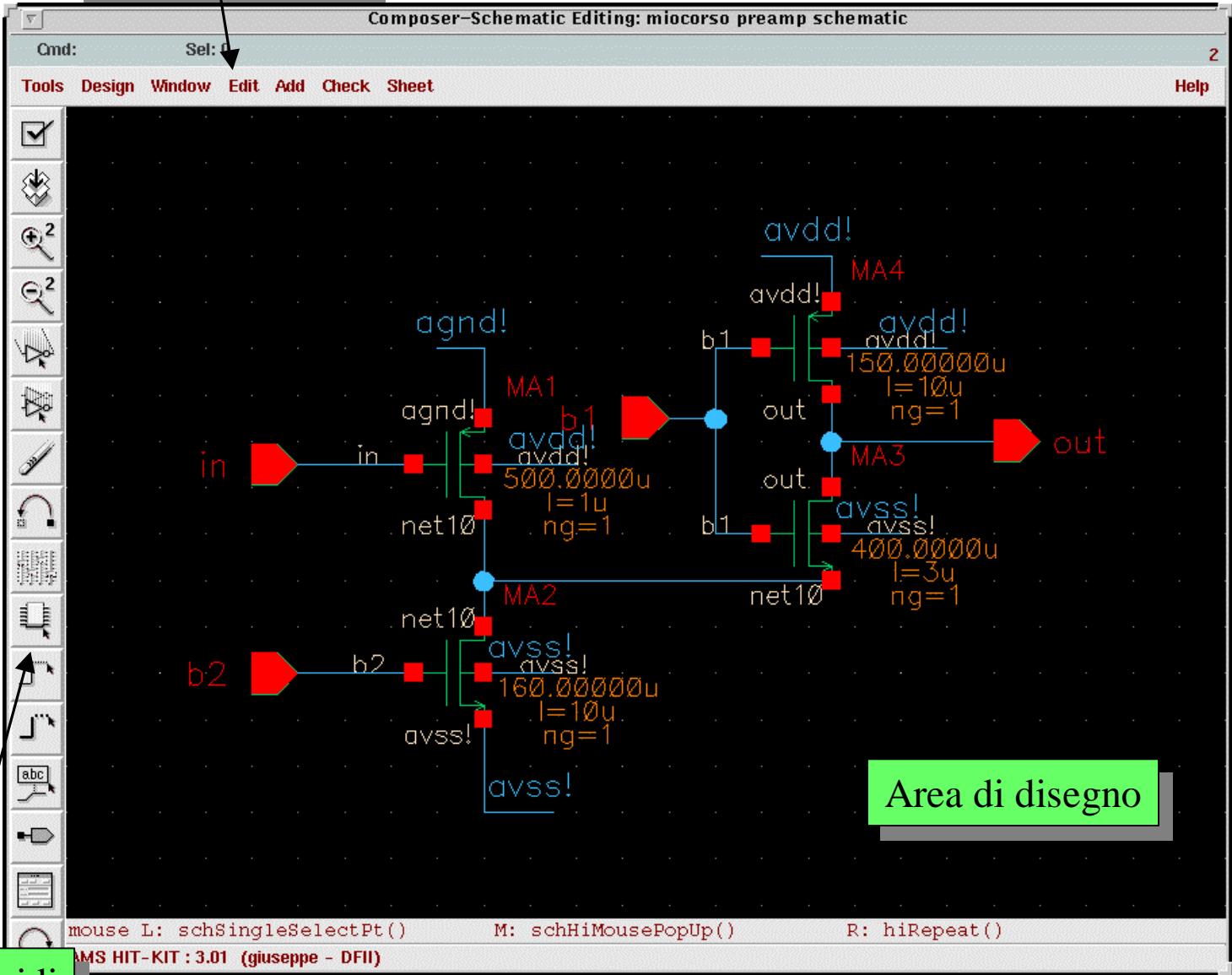
Permette di:

- Creare Librerie
- Visualizzare la struttura di librerie
- Copiare librerie
- Copiare celle fra librerie
- Aprire le viste delle celle



Menu' a tendina



Schematic window



Menu' rapidi

Navigazione negli schematici

Tasti rapidi:

- ESC
- Window Fit (f)
- Window => Zoom In (z)
- Window => Zoom In by 2 (]) 
- Window => Zoom Out by 2 ([) 
- ←↑→↓
- Design => Hierarchy => Descend Edit ... (E)
- Design => Hierarchy => Descend Read ... (e)
- Design => Hierarchy => Return (^e)
- tasto destro mouse & drag

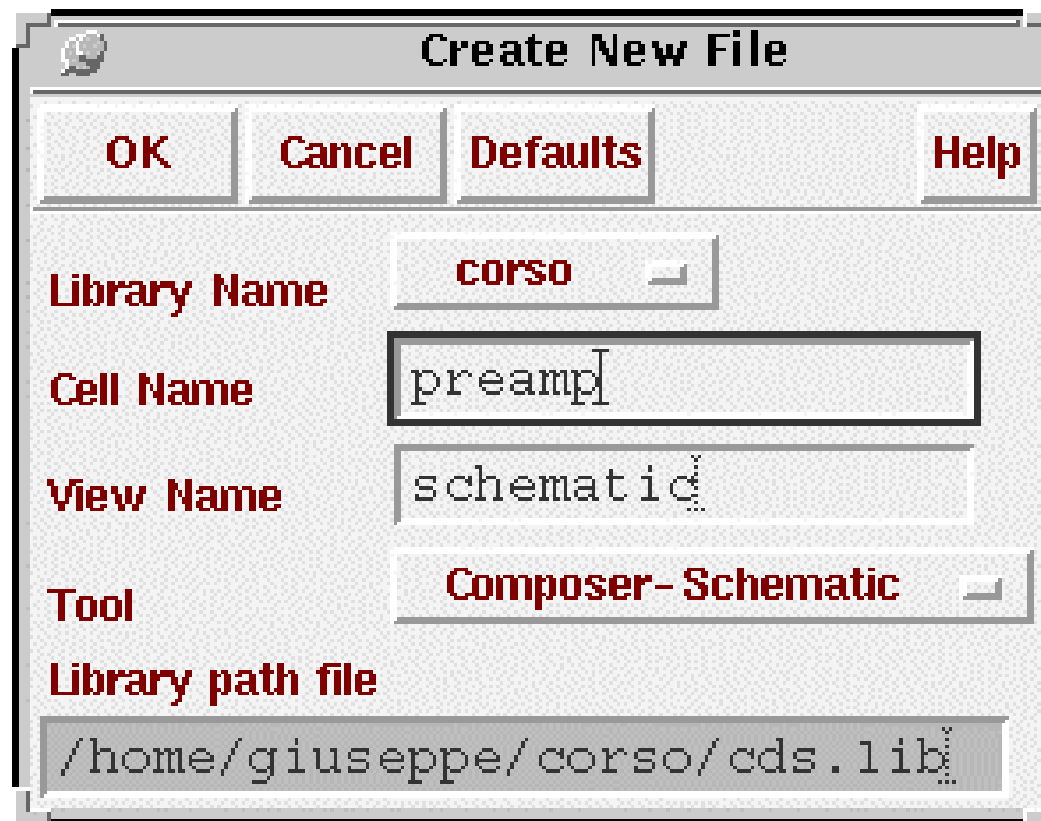
Creazione della libreria

- CIW => File => New => Cellview
- Library Manager => File => New => Cellview





Creazione dello schematico

- CIW => File => New => Cellview
- Library Manager => File => New => Cellview



Salvataggio dello schematico

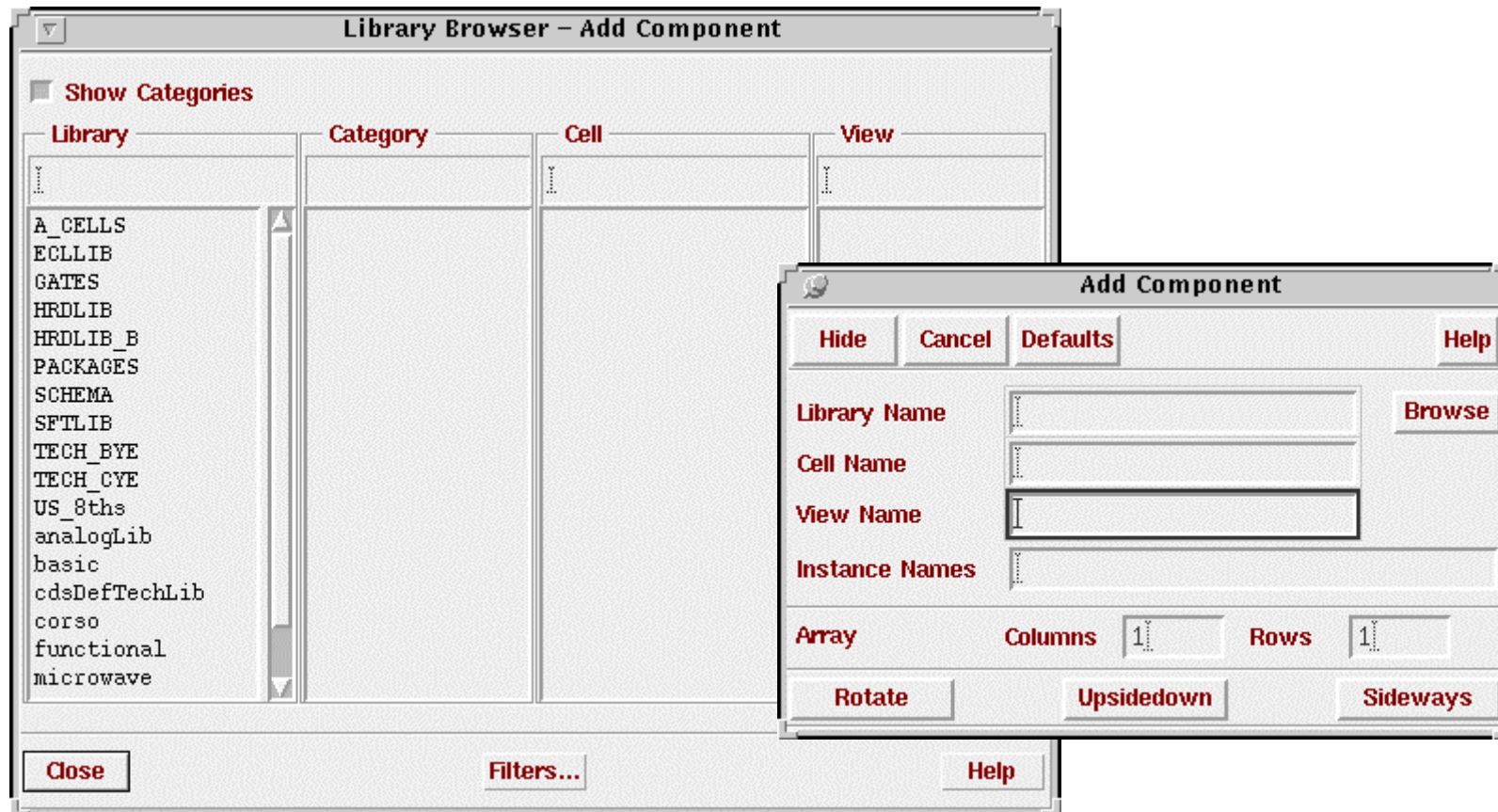
- Design => Check and Save (X)
- 

- Design => Save (S)
- 

- Design => Save As (^S)

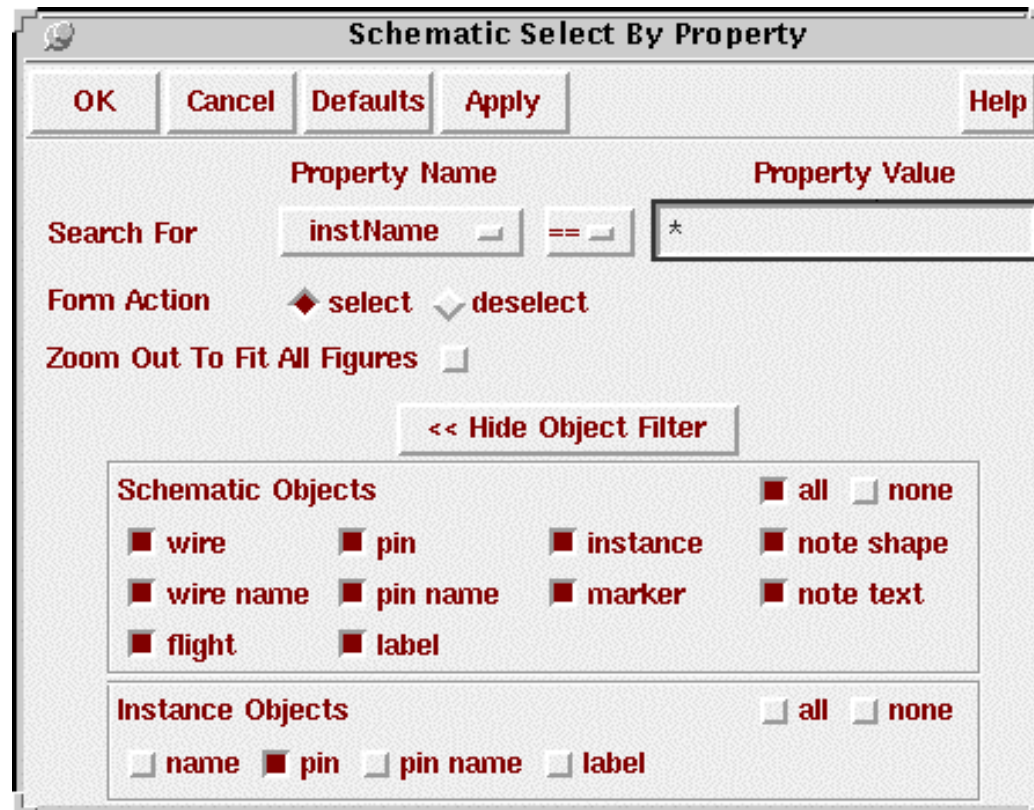
Inserimento di componenti

- Add=> Component (i)
- Pulsante centrale del mouse => Add Component



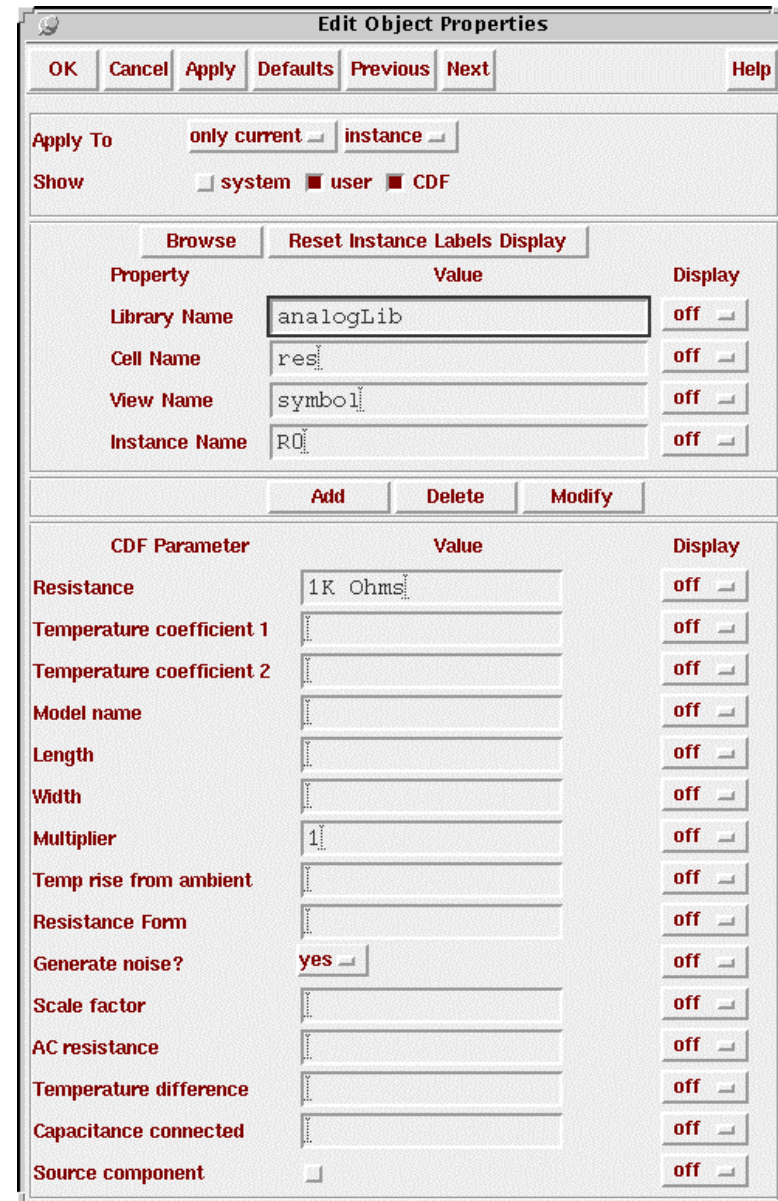
Selezione di oggetti

- Edit => Select => (All, By Property ,Filter)
- Click col tasto sinistro sull'oggetto
- Shift Click - aggiunge alla selezione
- Alt Click - Rimuove dalla selezione
- Drag col tasto sinistro



Modifica delle proprietà dei componenti

- Edit => Properties => Objects (q)
- Pulsante centrale del mouse => Properties



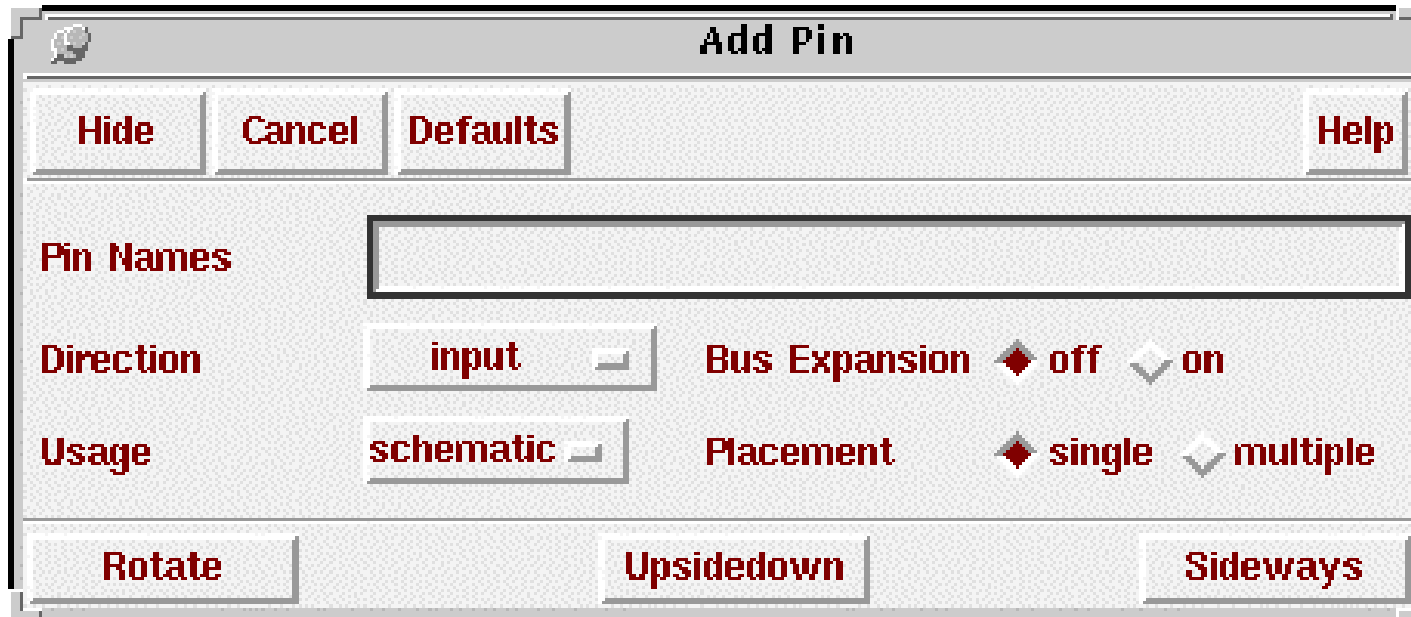
The screenshot shows the 'Edit Object Properties' dialog box. At the top, there are buttons for 'OK', 'Cancel', 'Apply', 'Defaults', 'Previous', 'Next', and 'Help'. Below these, there are dropdown menus for 'Apply To' (set to 'only current') and 'instance' (set to 'instance'). There are also checkboxes for 'Show' with options 'system', 'user', and 'CDF'. The main area is divided into two sections: 'Property' and 'CDF Parameter'. The 'Property' section has a 'Browse' button and a 'Reset Instance Labels Display' button. It contains a table with columns 'Property', 'Value', and 'Display'. The 'CDF Parameter' section also has a table with columns 'CDF Parameter', 'Value', and 'Display'. Buttons for 'Add', 'Delete', and 'Modify' are located between the two tables.

Property	Value	Display
Library Name	analogLib	off
Cell Name	res	off
View Name	symbol	off
Instance Name	R0	off


CDF Parameter	Value	Display
Resistance	1K Ohms	off
Temperature coefficient 1		off
Temperature coefficient 2		off
Model name		off
Length		off
Width		off
Multiplier	1	off
Temp rise from ambient		off
Resistance Form		off
Generate noise?	yes	off
Scale factor		off
AC resistance		off
Temperature difference		off
Capacitance connected		off
Source component	<input type="checkbox"/>	off


Inserimento dei pin di I/O

- Add=> Pin (p)
- Pulsante centrale del mouse => Add Pin
- 



Inserimento dei fili

- Add => Wire (narrow) (**w**)
- Pulsante centrale del mouse => Wire (narrow)
- 

- Add => Wire (wide) (**W**)
- 

Nominare i fili

- Add => Wire Name (I)



Add Wire Name

Hide **Cancel** **Defaults** **Help**

Names

Font Height **Bus Expansion** off on

Font Style **Placement** single multiple

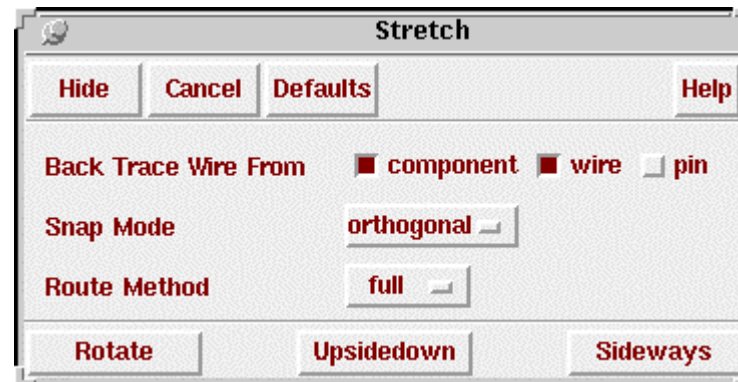
Justification **Purpose** label alias

Entry Style **Show Offset Defaults**

Rotate

Muovere gli oggetti

- Edit => Stretch (m)

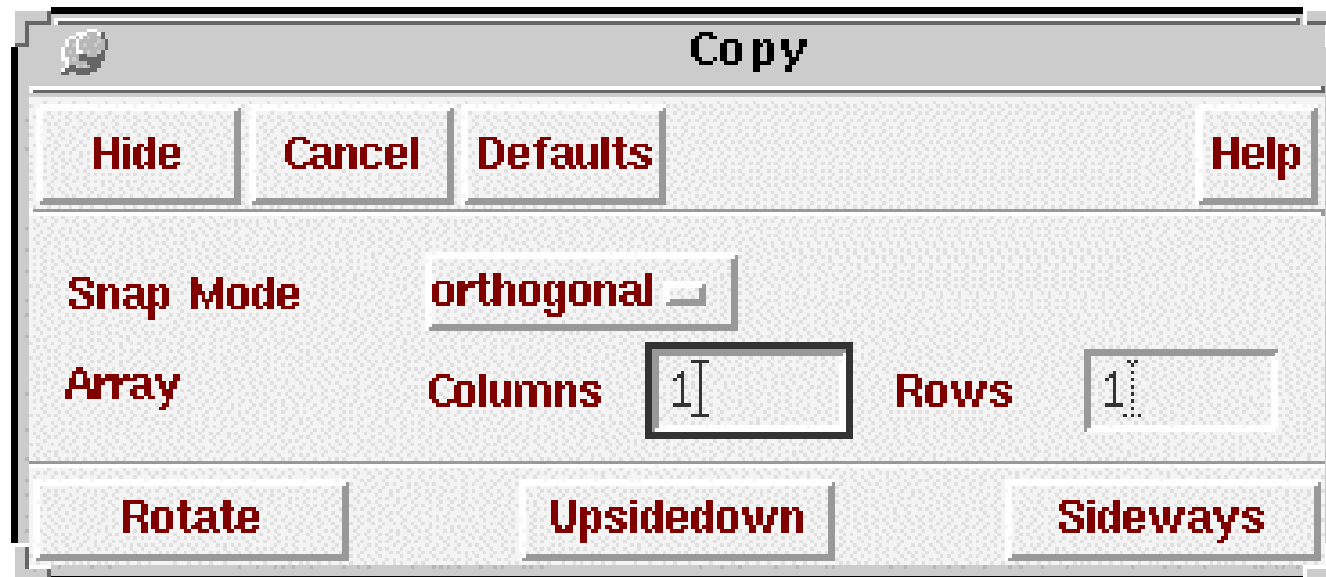


- Edit => Move (M)



Copiare Oggetti

- Edit => Copy (c)



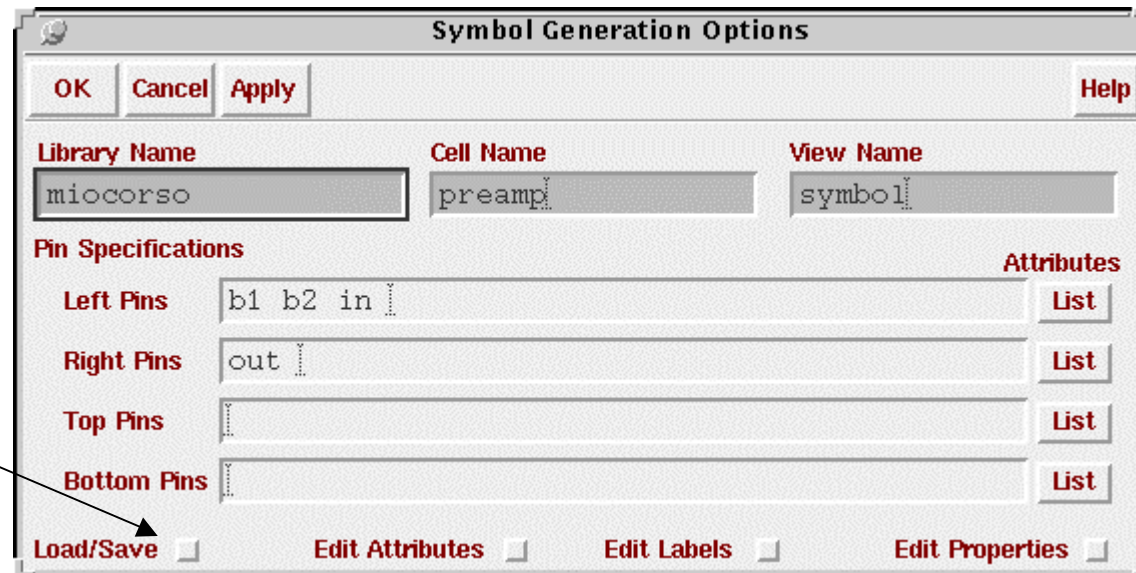
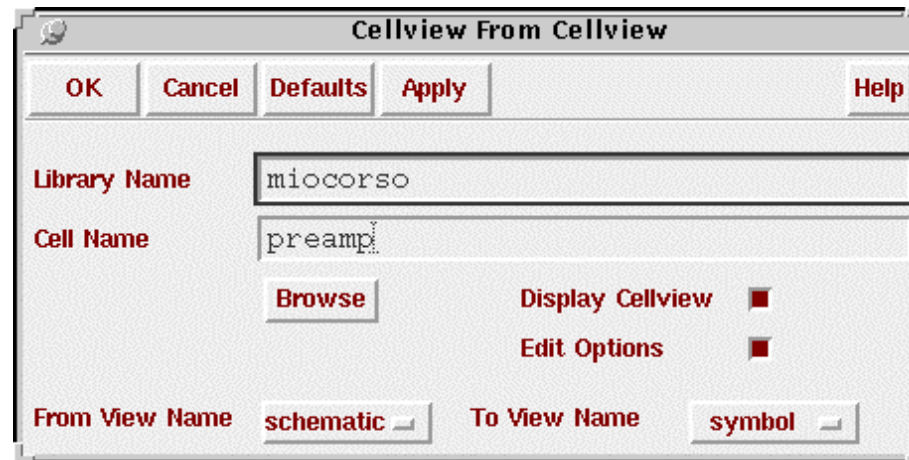
Cancellare Oggetti

- Edit => Delete (**del**)



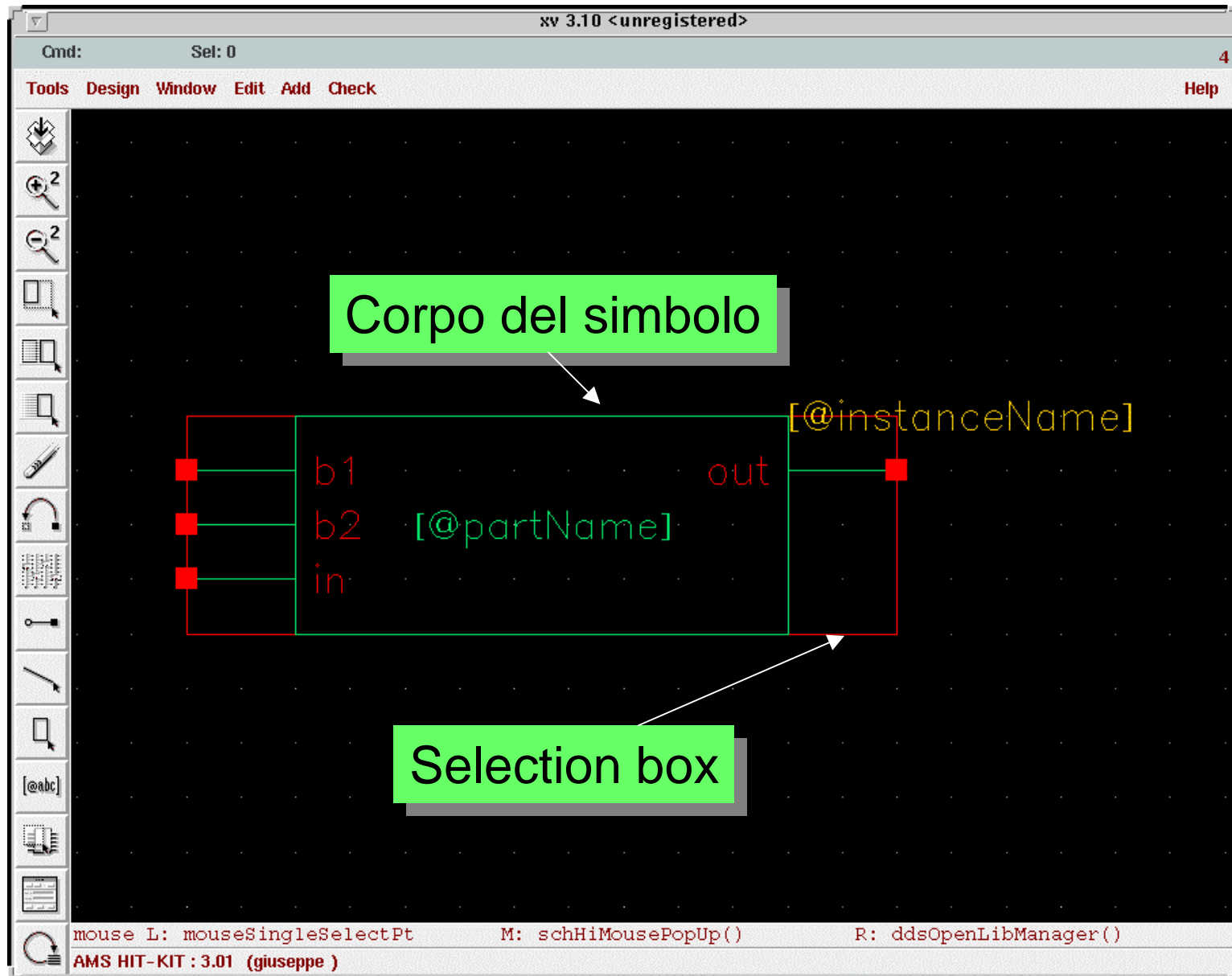
Creazione del simbolo

- Design => Create Cellview => From Cellview



Carica Symbol Template

Symbol Window



Component Description Format (CDF)

- CIW => Tools => CDF => Edit

Edit Component CDF

OK Cancel Apply Help

CDF Selection Cell Library CDF Type Effective

Library Name SCHEMA

Cell Name rdifn

Browse

File Name

Load Save File Name Select Change Directory

Component Parameters

Name	Add	Edit	Move	Select To Delete
model	rdifn			<input type="checkbox"/>
r	1k			<input type="checkbox"/>
w	10u			<input type="checkbox"/>
l	10u			<input type="checkbox"/>
m	1			<input type="checkbox"/>
ResShape	45_deg			<input type="checkbox"/>
Bends	0			<input type="checkbox"/>
version	3.00 - cyx			<input type="checkbox"/>
dtemp				<input type="checkbox"/>

Simulation Information

Edit

auCd PLUS MINUS

auLvs PLUS MINUS

Esercitazione

- Creare in ~/corso la libreria “miocorso”
- Creare la cella **preamp**
- Creare la cellview schematic
- Disegnare lo schematico usando le celle della libreria SCHEMA
- Creare il simbolo e provare a modificarlo
- Disegnare gli schematici per le celle **buffer** e **fbnetw**
- Creare il disegno gerarchico (**chan**)
- Creare il top (**amp**) usando le celle della libreria analogLib