



# Summary Sheet for NeXT Interface Builder Lab

## Process

- 1) Draw User Interface
- 2) Make Connections
- 3) *Create Custom Object*
  - Subclass Object or View*
  - Instantiate Custom Object*
  - Edit Object Using Inspector*
  - Add Actions and Outlets*
  - Make Connections to Custom Object*
- 4) Save IB files (create directory and name)
- 5) Create Project
- 6) *Un-parse Custom Object*
- 7) *Add Instance Variables to ".h" Files*
- 8) *Add Code to ".m" Files*
- 9) *Save .h and .m Files*
- 10) Make and Run

Note: all steps in italic can be skipped if you are not creating custom objects.

## Include Files

Catch All (with slower compiles)  
`#import <appkit/applkit.h>`

For faster compile and line replace with:  
`#import <appkit/Form.h>`  
`#import <appkit/Control.h>`

If you are doing Postscript Wraps:  
`#import <dpsclient/wraps.h>`

## Sample message statements:

Getting data from Sliders:

```
myFloat = [sender floatValue];
```

Sending data to Sliders:

```
[sliderOutlet setFloatValue:myFloat];
```

Getting data from Forms:

```
myDouble = [myForm doubleValueAt:0];  
myFloat  = [myForm floatValueAt:0];  
myInt    = [myForm intValueAt:0];  
myStr    = [myForm stringValueAt:0];
```

Sending data to Forms:

```
[outForm setDoubleValue:myDouble at:0];  
[outForm setFloatValue:myFloat at:0];  
[outForm setIntValue:myInt at:0];  
[outForm setStringValue:myString at:0];
```



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## Sample Postscript drawSelf::

Add to .m file to draw a line

```
- drawSelf:(NXRect*)r :(int)c
{
    NXEraseRect(&bounds);
    PSsetgray(NX_BLACK);
    PSsetlinewidth(5.0);
    PSnewpath();
    PSmoveto(50.0, 20.0);
    PSlineto(100.0, 70.0);
    PSstroke();
    return self;
}
```

## Accessing the Center of a View

```
xo = bounds.size.width/2.0;
yo = bounds.size.height/2.0;
```

## To Initialize New Objects

Subclass of non-views:

```
+new{
    self = [super new];
    floatValue = 0.7;
    return self;
}
```

Subclass of views:

```
+newFrame:(const NXRect *)tF{
    self = [super new];
    floatValue = 0.7;
    return self;
}
```

## Sample Postscript Commands

To move the pen:

```
PSmoveto(x, y);
```

To draw a line:

```
PSlineto(x, y);
```

To translate the origin:

```
PStranslate(x, y);
```

To rotate the coordinate system:

```
PSrotate(angle in degrees);
```

To scale the coordinate system:

```
PSscale(xmag, ymag);
```

To draw an arc:

```
PSarc(x,y,radius,angle1,angle2);
```

To draw a smooth curve:

```
PScurveto(x1,y1,x2,y2,x3,y3,...);
```

To set the gray level use:

```
PSsetgray(NX_BLACK);
```

Or use NX\_WHITE, NX\_LTGRAY, and NX\_DKGRAY. White is 1.0 and Black is 0.0.

## Sample UNIX Commands

```
$ pwd - present working directory
$ cd <DIR> - change directory
$ ls - list files
$ make - compile and link
```

## To Debug

```
$ make debug
$ gdb progname
gdb> b drawSelf::
gdb> run
```