GTK4 and SWOOP

Mapping GTK to SWOOP Classes

Three Things

- SWOOP
- External library interface
- GTK

SWOOP

SwiftForth includes an object-oriented programming package called SWOOP, SwiftForth Object-Oriented Programming. It includes all the essential OOP features, including:

- **Encapsulation**: combining data and methods into a single package that responds to messages.
- **Information hiding**: the ability of an object to possess data and methods that are not accessible outside its class.
- **Inheritance**: the ability to define a new class based on a previously defined "parent" class. The new class automatically possesses all members of the parent; it may add to or replace these members or define behaviors for deferred members.
- **Polymorphism**: the ability of different sub-classes of a class to respond to the same message in different ways.

Simple Example: POINT

```
CLASS POINT

VARIABLE X
VARIABLE Y

: SET ( x y -- )   Y !  X ! ;
: GET ( -- x y )   X @  Y @ ;
: SHOW ( -- )   X @ .  Y @ . ;

END-CLASS
```

Simple Example: POINT

```
POINT BUILDS ORIGIN


5 ORIGIN X !
6 ORIGIN Y !
```

Simple Example: POINT

POINT BUILDS ORIGIN

5 ORIGIN X !

6 ORIGIN Y !

5 6 ORIGIN SET

Simple Example: POINT

```
POINT BUILDS ORIGIN

5 ORIGIN X !
6 ORIGIN Y !

5 6 ORIGIN SET

ORIGIN X @  ORIGIN Y @
```

Simple Example: POINT

POINT BUILDS ORIGIN

5 ORIGIN X !
6 ORIGIN Y !

5 6 ORIGIN SET

ORIGIN X @   ORIGIN Y @

ORIGIN GET

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External Library Interface

```
LIBRARY <filename>


FUNCTION: <name> ( args -- return )


CALLBACK: ( xt n -- )
```

GTK Library Interface

```
XLIBRARY <filename1> <filename2> …


GCALLBACK: ( xt -- )
```