

```
import types
```

```
def private(*privates):
    def onDecorator(aClass):
        class onInstance:
            def __init__(self, *args, **kargs):
                self.wrapped = aClass(*args, **kargs)
                self.private_fields=privates
            def __getattr__(self, attr):
                if attr in privates:
                    raise TypeError('private attribute fetch: ' + attr)
                else: return getattr(self.wrapped, attr)
            def __setattr__(self, attr, value):
                if attr == 'wrapped': self.__dict__[attr] = value
                elif attr in privates:
                    raise TypeError('private attribute change: ' + attr)
                else: setattr(self.wrapped, attr, value)
        return onInstance
    return onDecorator
```

```
def make_getter(name):
    def getter(self):
        return self.__dict__[name]
    return getter
```

```
def make_setter(name):
    def setter(self, value):
        self.__dict__[name] = value
    return setter
```

```
gen_selectors = {'get': make_getter, 'set':make_setter}
```

```
def selectors(*fields_to_mask):
    def onDecorator(aClass):
        class SelectorsClass:
            def __init__(self, *args, **kargs):
                self.wrapped = aClass(*args, **kargs)

                for selector_type in fields_to_mask[0].keys():
                    for field in fields_to_mask[0][selector_type]:
                        if (field in self.wrapped.private_fields):
                            self.wrapped.wrapped.__dict__[ \
                                selector_type+field[0].upper()+field[1:] \
                            ] = \
                                types.MethodType( \
                                    gen_selectors[selector_type](field), \
                                    self.wrapped.wrapped \
                                )
                        else:
                            raise TypeError( \
                                'attempt to add a selector for a non private attribute: ' \
                                + field)

            def __getattr__(self, attr):
                return getattr(self.wrapped, attr)
            def __setattr__(self, attr, value):
                if attr == 'wrapped': self.__dict__[attr] = value
                else: setattr(self.wrapped, attr, value)
        return SelectorsClass
    return onDecorator
```