

Patchy

An Alternative to Monkey Patching

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Monkey-patching

- Modifying objects defined in another module:

```
In [1]: import sys
```

```
In [2]: def explode():  
...:     print("Boom")  
...:
```

```
In [3]: sys.explode = explode
```

```
In [4]: sys.explode()  
Boom
```

Monkey-patching

- ▶ Who has written a monkey patch?
- ▶ Who has worked on codebase that relied on monkey patching somewhere?



Situation at YPlan

- ▶ A few monkey-patches on Django to customize things not designed for customization
- ▶ e.g. changing admin class `history_view`, a 35 line function, by 1 line:

```
def history_view(self, request, obj_id, context=None):  
    # First check if the user can see this history.  
    model = self.model  
    obj = get_object_or_404(model, pk=unquote(obj_id))  
  
    # Changed from 'self.has_change_permission':  
    if not self.has_view_permission(request, obj):  
        raise PermissionDenied  
  
    # ... 30 more lines  
  
from django.contrib.admin import ModelAdmin  
ModelAdmin.history_view = history_view
```

Introducing Patchy

- *Patch the source of python functions at runtime (not monkey-patching - actual patch-patching)*



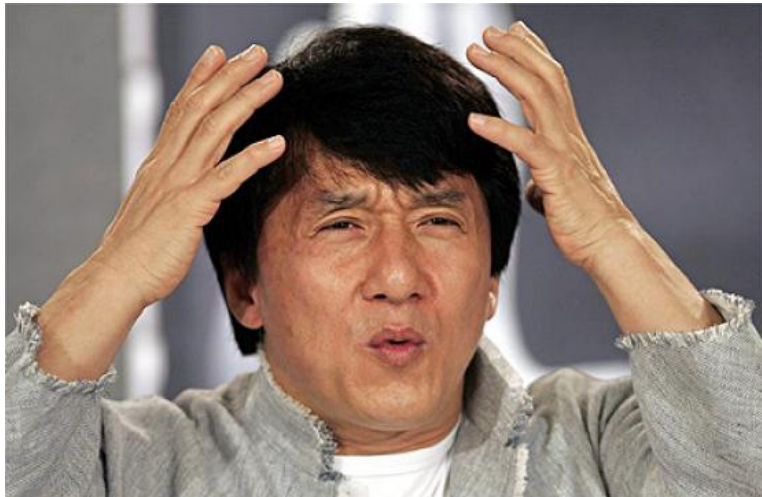
Patchy

- ▶ Actual patch-patching:

```
>>> def sample():
...     return 1
>>> sample()
1
>>> patchy.patch(sample, """\
...     @@ -1,2 +1,2 @@
...         def sample():
...             - return 1
...             + return 9001
...         """ )
>>> sample()
9001
```

Patchy

- ▶ People like 'whut?'



Admin patch

```
from django.contrib.admin.options import ModelAdmin

patchy.patch(ModelAdmin.history_view, """\
@@ -5,7 +5,7 @@ def history_view(self, request, object_id, ex
     model = self.model
     obj = get_object_or_404(self.get_queryset(request), pk=
-     if not self.has_change_permission(request, obj):
+     if not self.has_view_permission(request, obj):
         raise PermissionDenied

     # Then get the history for this object.
""")
```

- ▶ Expresses the change in code rather than a comment
- ▶ More robust - only the lines around the change are needed

How it work?



- Magic.

Thank you



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