The REST Ascendancy

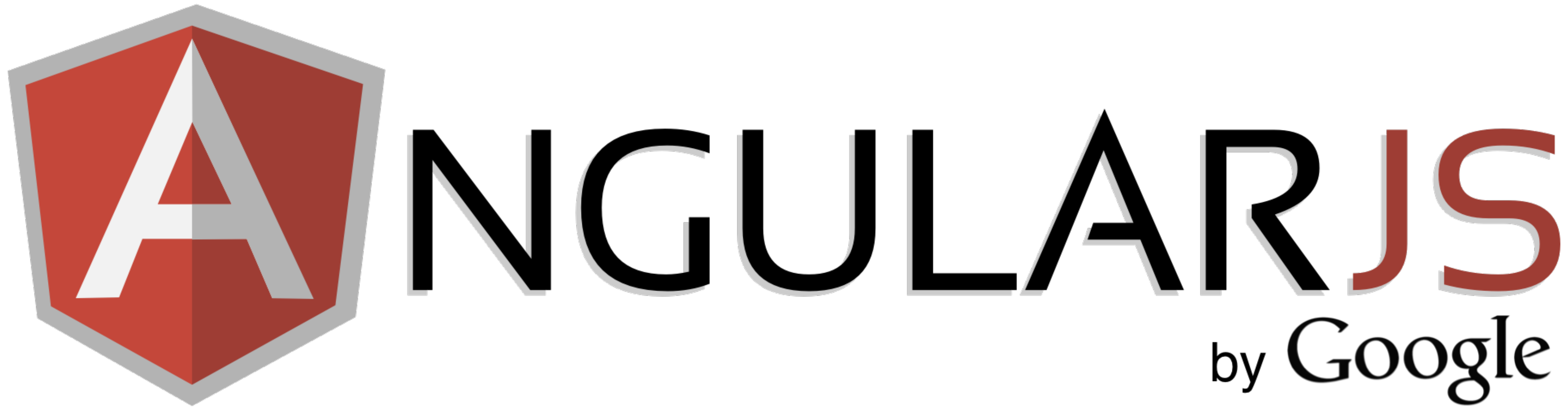
OUTLINE

1. WHY REST
2. BEST OF THE REST
3. PAIN POINTS
4. THE FUTURE

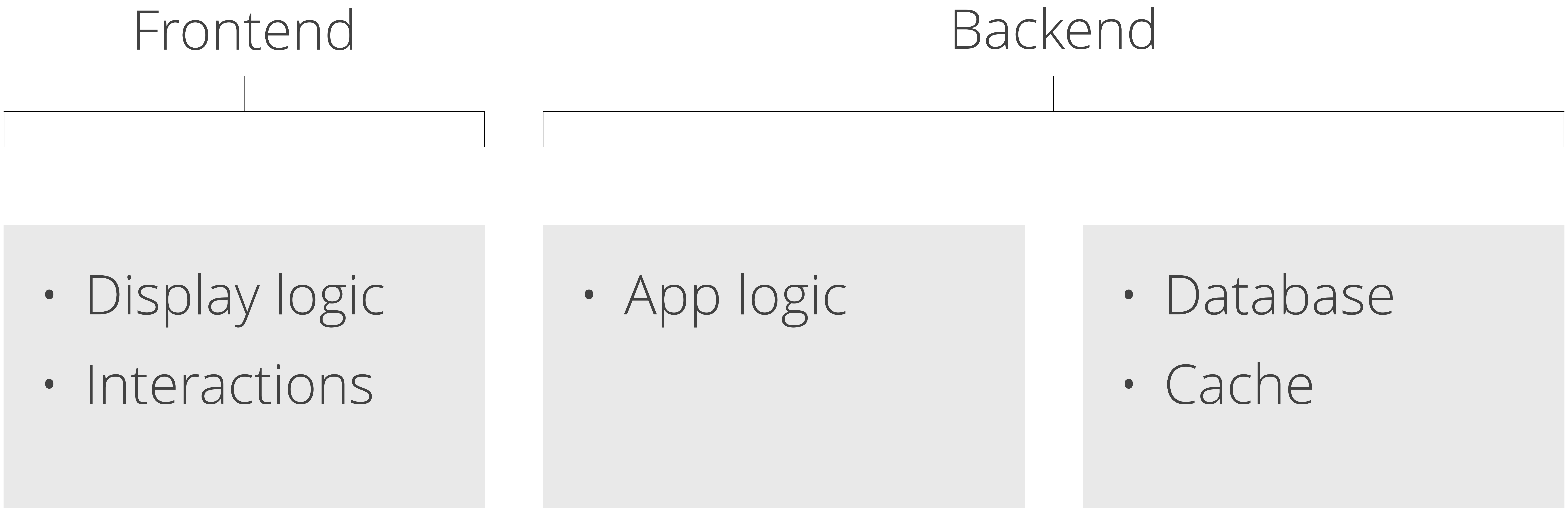
1. WHY REST

2. STATE OF REST
3. PAIN POINTS
4. THE FUTURE

The REST Ascendancy



BACKBONE.JS



Frontend

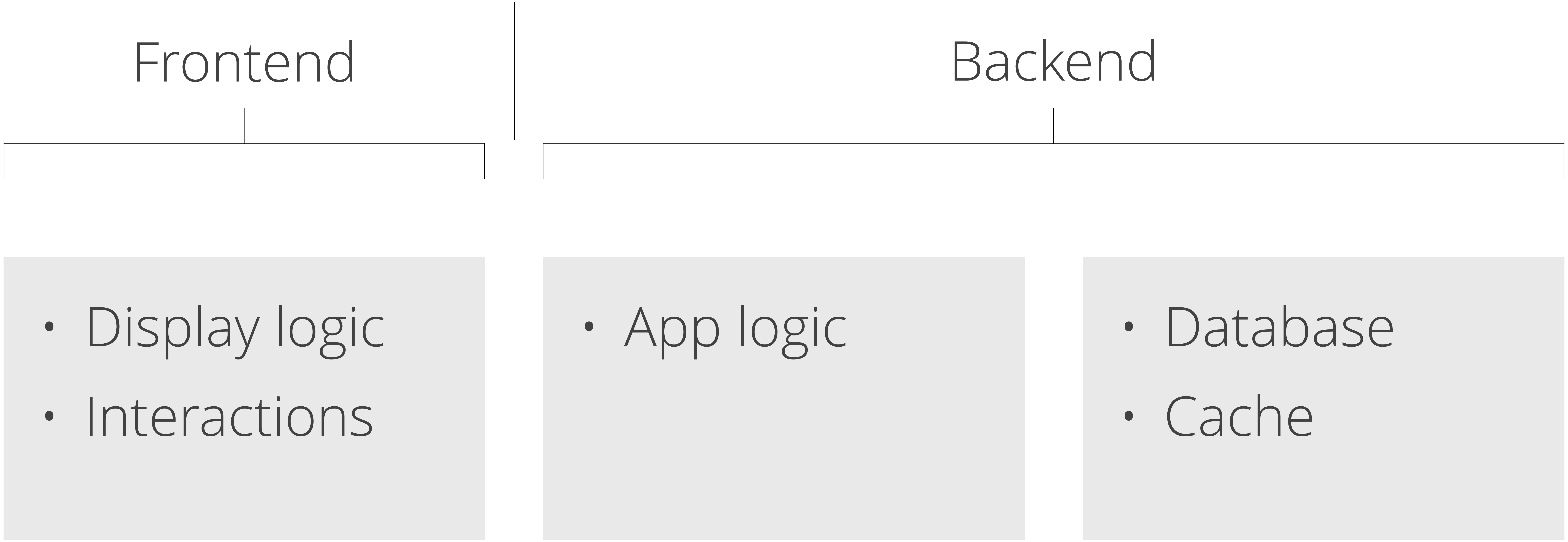
Backend

- Display logic
- Interactions

- App logic

- Database
- Cache

HTML!



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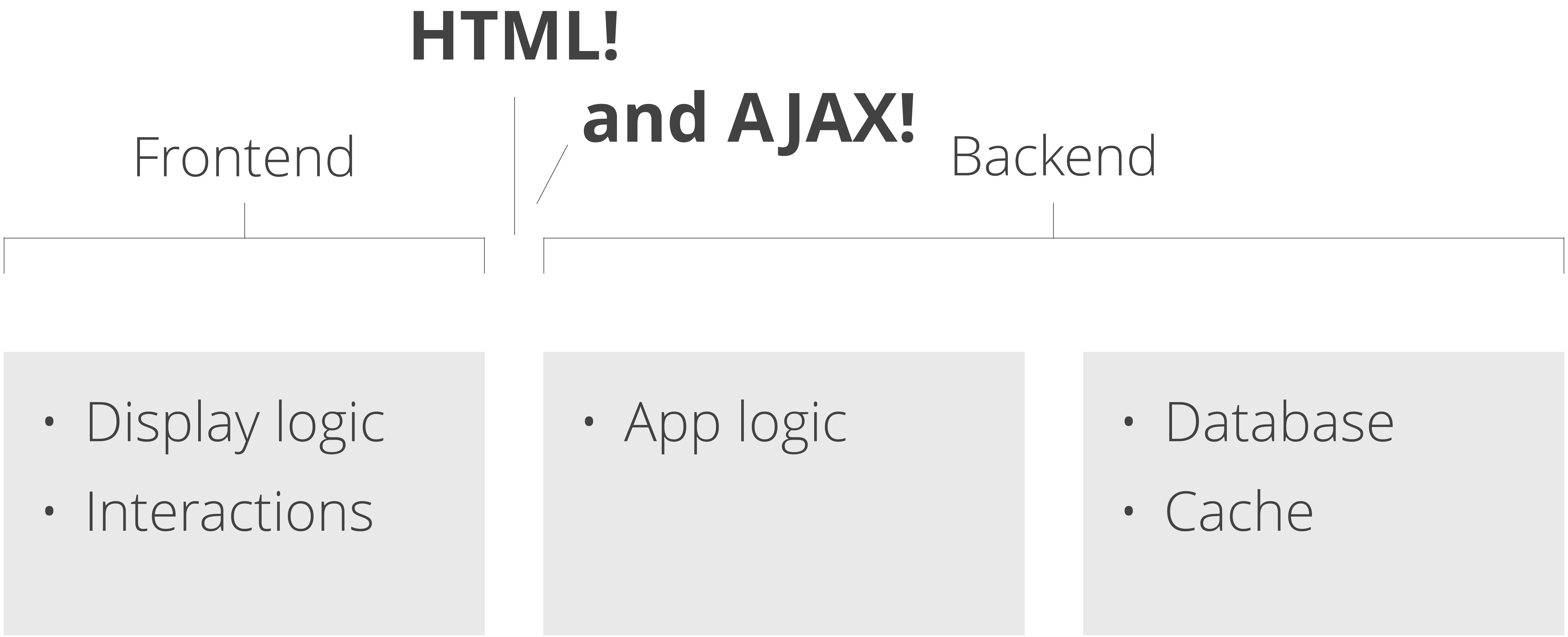

HTML!

and AJAX!

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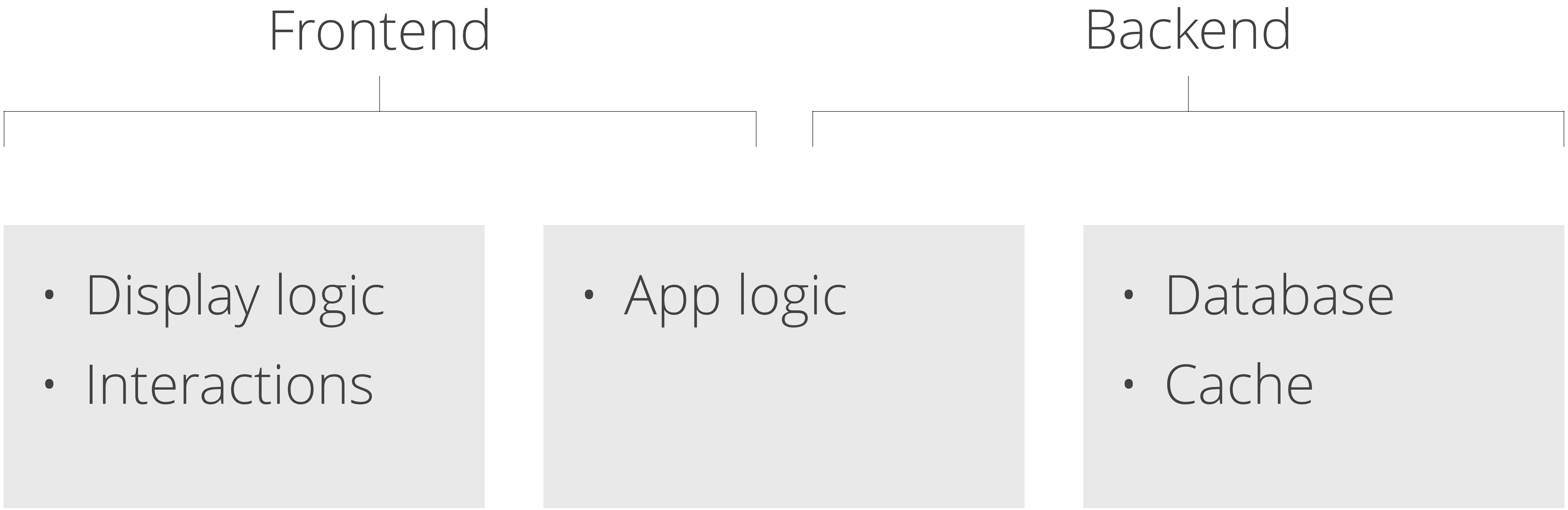

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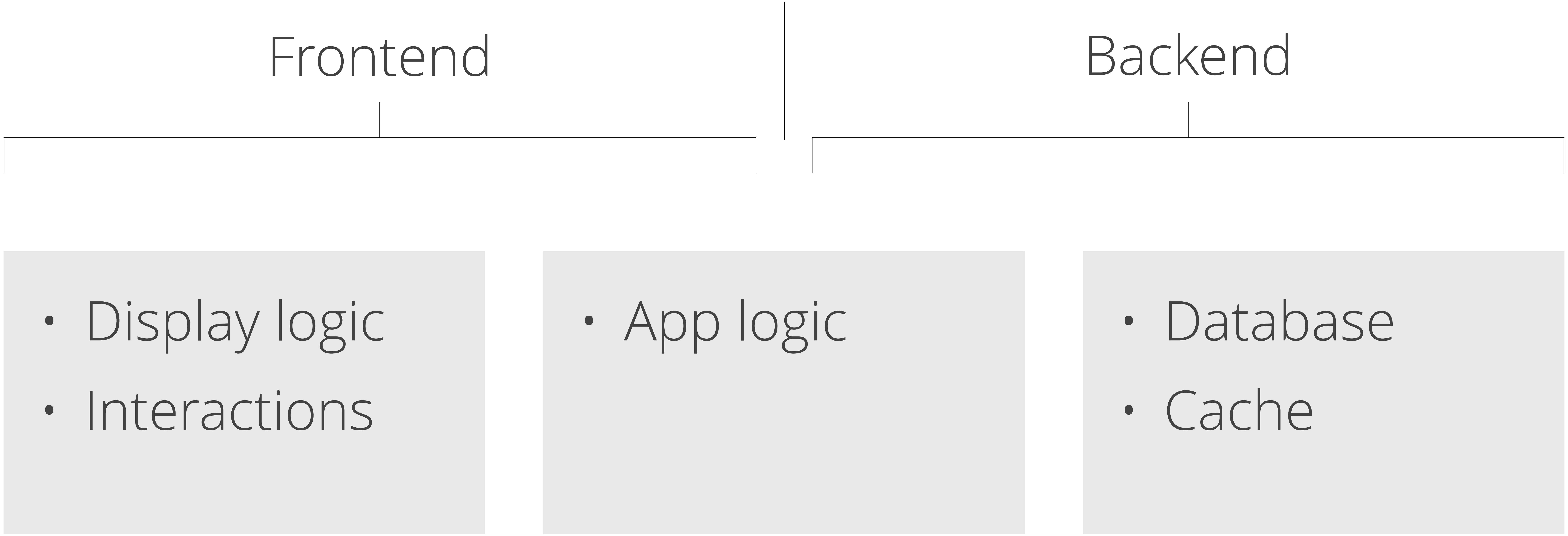
Representational State Transfer!



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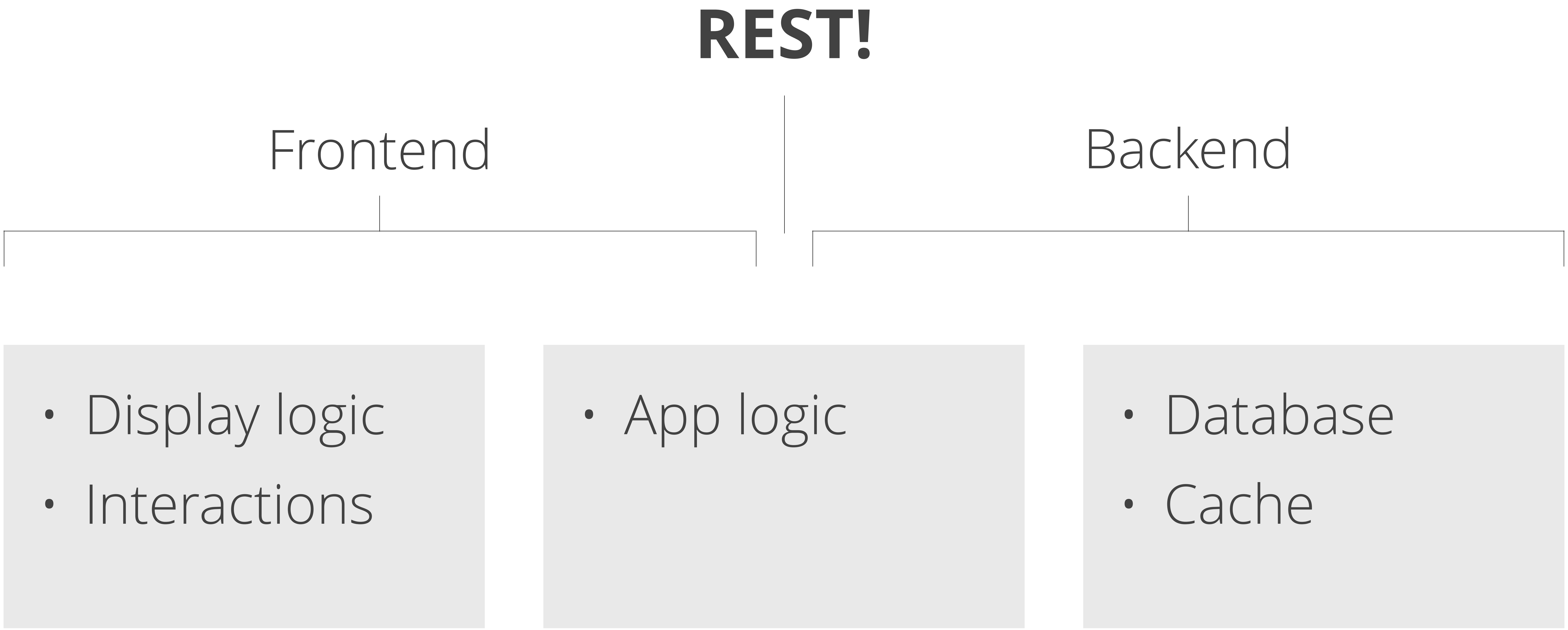

REST!

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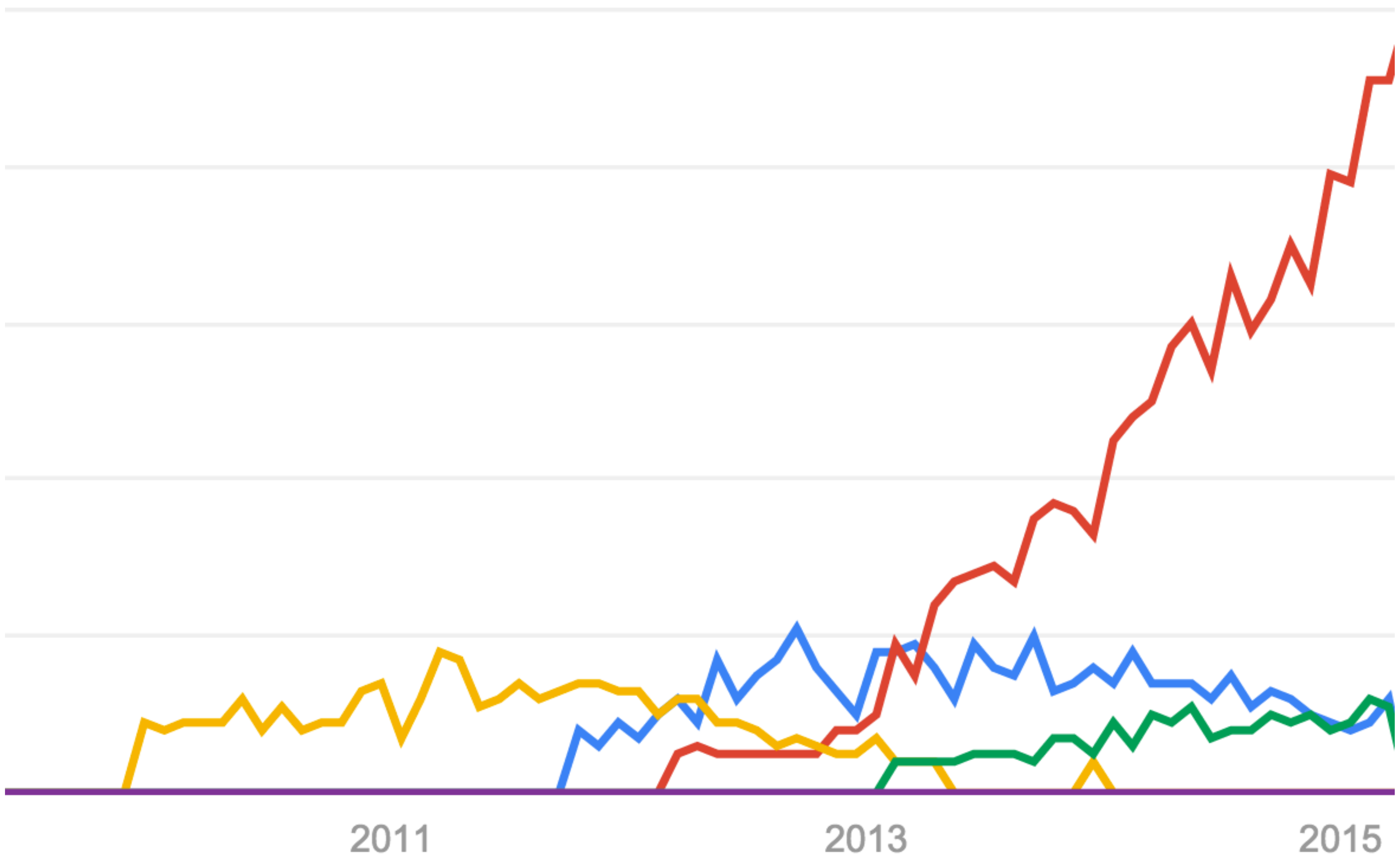

Django REST Framework
172,000 downloads

Flask RESTful
60,000 downloads

Django Tastypie
37,000 downloads

Pyramid Cornice
12,000 downloads

Django Piston
4,000 downloads

SERIALIZERS

```
class CatSerializer(serializers.ModelSerializer):

    class Meta:
        model = Cat
        fields = ['id', 'age', 'hair', 'grumpiness',]
```

VIEWS

```
class CatViewSet(viewsets.ModelViewSet):

    queryset = Cat.objects.all()
    serializer_class = CatSerializer
```

PERMISSIONS

```
class OwnerOrReadOnlyPermission(permissions.BasePermission):

   def has_object_permission(self, request, view, obj):
        if request.method in permissions.SAFE_METHODS:
            return True
        return obj.owner == request.user
```

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WHO’S THE CONSUMER?

Your API

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Developers

Your API

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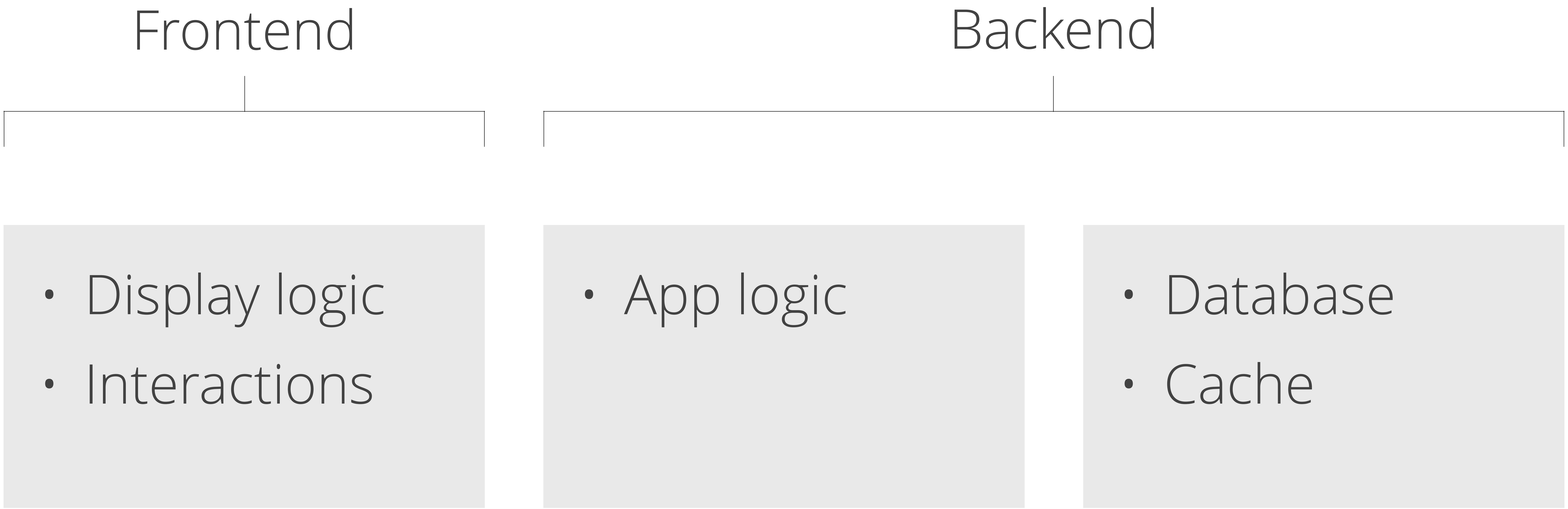
Developers

Your App

Your API



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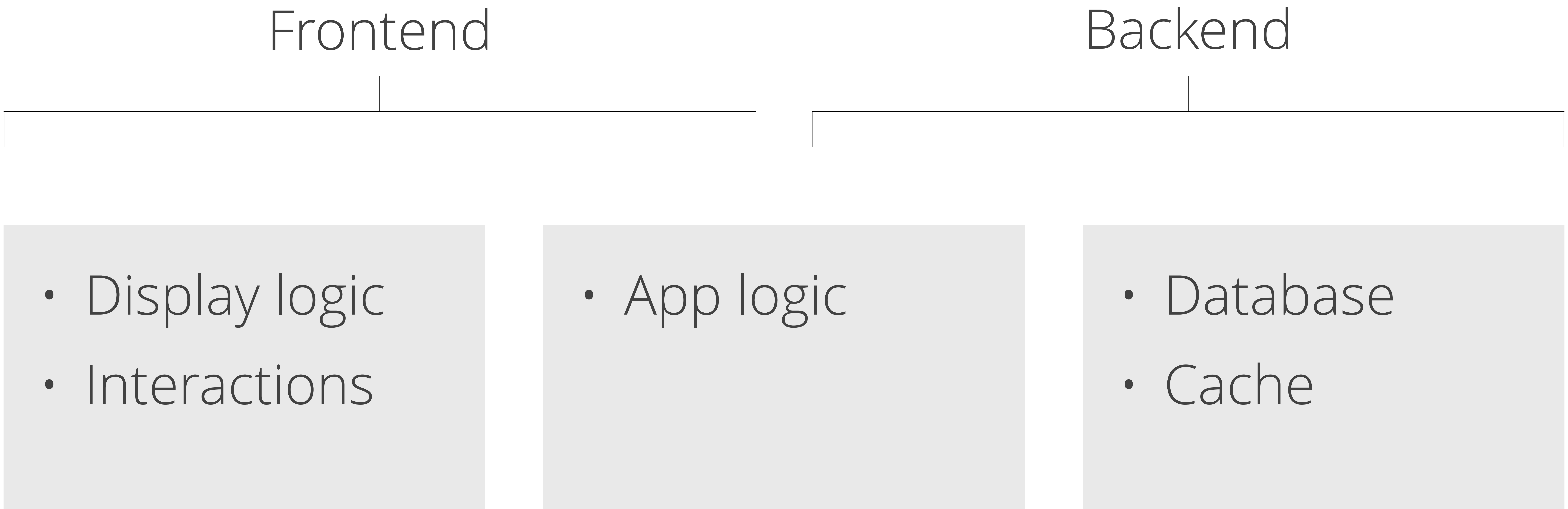

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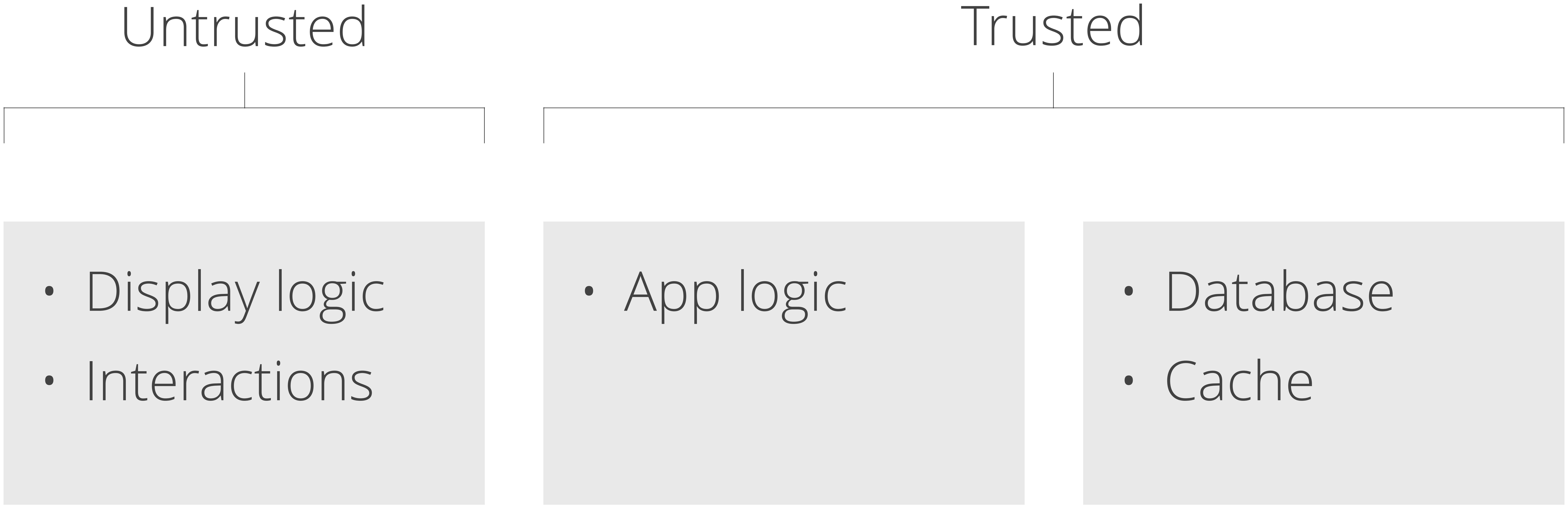

Untrusted

- Display logic
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Trusted

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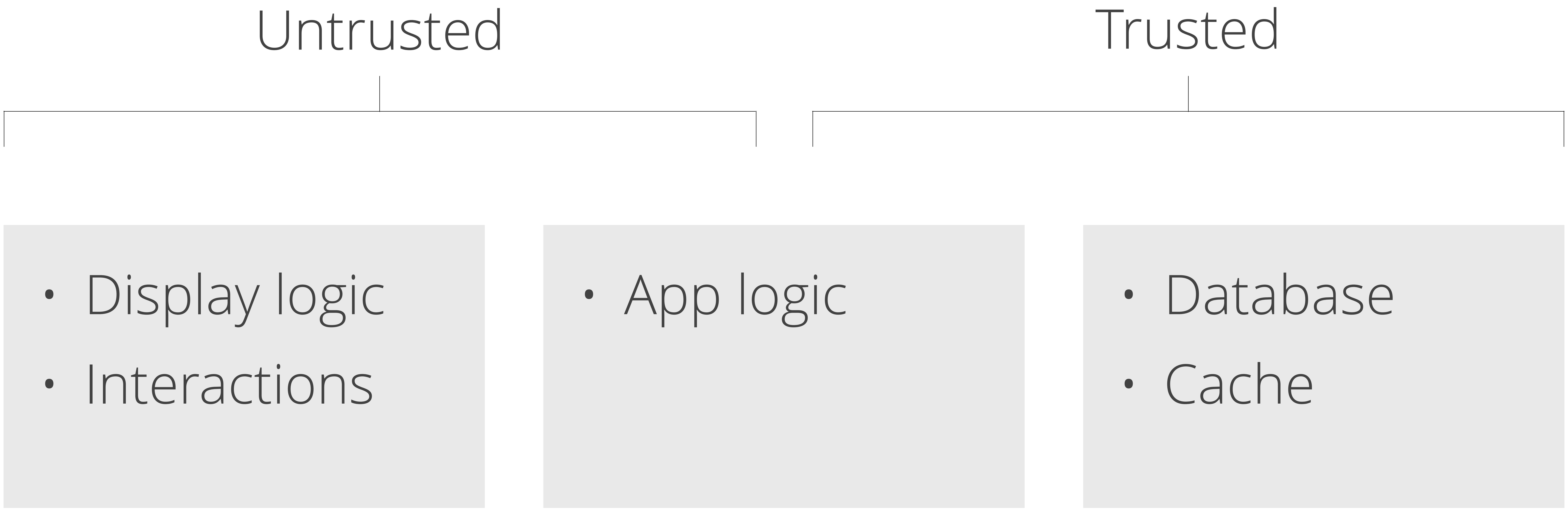

Untrusted

Trusted

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- Interactions

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AUTHENTICATION

AUTHENTICATION

```
'rest_framework.authentication.SessionAuthentication'
```

- Session auth

AUTHENTICATION

```
example.com/api/products/?jwt=eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJzdWIiOiIxMjM0NTY3ODkwIiwibmFtZSI6IkpvaG4gRG9lIDIiLCJhZG1pbiI6dHJ1ZX0.wUJs5ArG9bewMeW3mZONhhAGs877ZWJWZlMHlROTyKU
```

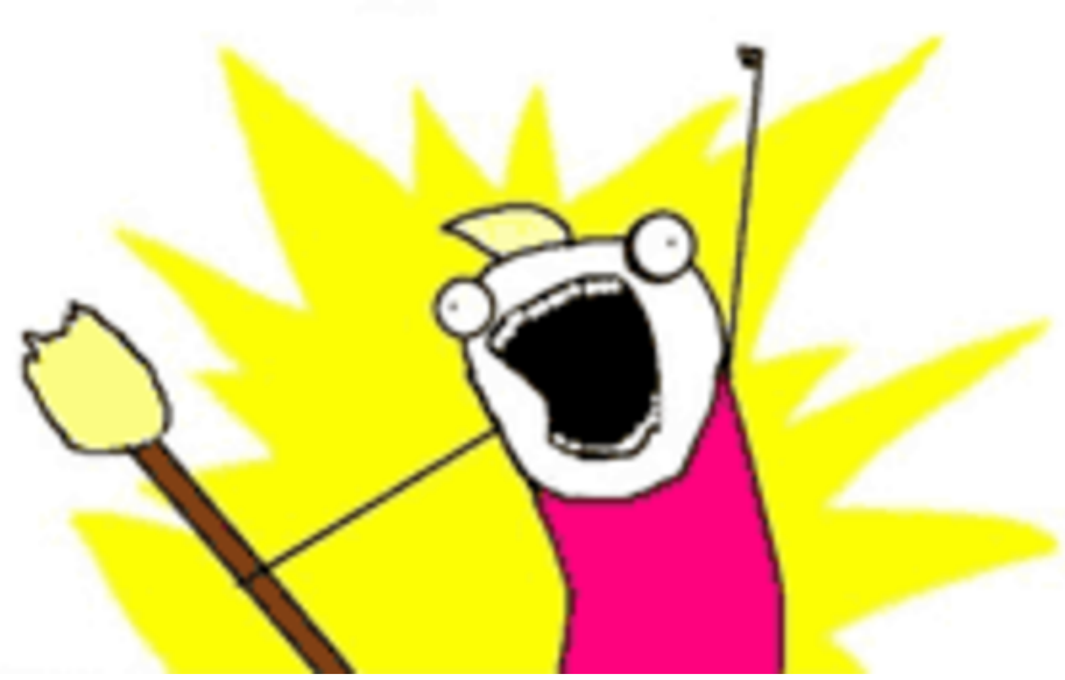
- Session auth
- Token auth

AUTHENTICATION

```
example.com/api/products/?
sign=svf668fe0d-a2ab-4855-bb65-baf210b1e64c:bZyPId_-Qmi5B-
YUkifs5FLEqqI
```

- Session auth
- Token auth
- Signed auth

AUTHENTICATION



- Session auth
- Token auth
- Signed auth
- All the things!

PERMISSIONS

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- Table-level permissions

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- Column-level permissions

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REAL EXAMPLE

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```
class OrderViewSet(SignViewSetMixin, viewsets.ModelViewSet):
    queryset = Order.objects.all()
    permission_classes = [
        Or(
            And(IsOrganizationMember, IsReadOnly),
            And(IsOrganizationAdmin, patch_fields_factory()),
            IsVendorAdmin,
            And(SignedObjectActionPermission, IsReadOnly),
            IsAdminUser,
        )
    ]
    ...
```

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class OrderViewSet(SignViewSetMixin, viewsets.ModelViewSet):
    ...
    def get_queryset(self):
        queryset = super(OrderViewSet, self).get_queryset()
        if self.request.user.is_authenticated():
            if self.request.user.is_staff:
                return self.queryset
            return self.queryset.filter(
                Q(organization__accounts=self.request.user) |
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REAL EXAMPLE — LIBRARIES

- Django REST Framework

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- rest_condition (forked)
- signed viewsets (in-house)
- patch fields factory (in-house)

REAL EXAMPLE — CODE LOCATIONS

- ViewSet class mixin

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- Permission classes (not depicted)

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EMBETTERMENT

- Better tokens and signed URLs

EMBETTERMENT

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- Combined list/object permissions

EMBETTERMENT

- Better tokens and signed URLs
- Combined list/object permissions
- Permission organization

chewse

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