장고 Class Based View 제대로 알고 쓰기

당신의 파이썬/장고 페이스메이커가 되겠습니다. ;)

EP03. built-in CBV API (Generic display views)

Built-in CBV API

- Base views
  - View, TemplateView, Redirect View
- Generic display views
  - DetailView, ListView
- Generic date views
  - ArchiveIndexView, YearArchiveView, MonthArchiveView, WeekArchiveView, DayArchiveView, TodayArchiveView, DateDetailView
- Generic editing views
  - FormView, CreateView, UpdateView, DeleteView

https://docs.djangoproject.com/en/2.1/ref/class-based-views/

Generic display views

- DetailView
  - ← SingleObjectTemplateResponseMixin
    - ← TemplateResponseMixin
  - ← BaseDetailView
    - ← SingleObjectMixin
    - ← View
- ListView
  - ← MultipleObjectTemplateResponseMixin
    - ← TemplateResponseMixin
  - ← BaseListView
    - ← MultipleObjectMixin ← ContextMixin
    - ← View

https://docs.djangoproject.com/en/2.1/ref/class-based-views/generic-display/

DetailView

DetailView

- 1개 모델의 1개 Object에 대한 템플릿 처리
  - 모델명소문자 이름의 Model Instance를 템플릿에 전달
    - 지정 pk 혹은 slug에 대응하는 Model Instance

```python
from django.views.generic import DetailView
from .models import Post


post_detail1 = DetailView.as_view(model=Post)


class PostDetailtView(DetailView):
    model = Post

post_detail2 = PostDetailtView.as_view()
```

DetailView 상속관계

django.views.generic.detail.DetailView

- ← SingleObjectTemplateResponseMixin
  - template_name이 지정되지 않았다면, 모델명으로 템플릿 경로 유추
  - ← TemplateResponseMixin
- ← BaseDetailView
  - ← SingleObjectMixin : url_kwarg로 지정된 Model Instance 획득
    - ← ContextView
  - ← View

```python
class SingleObjectMixin(ContextMixin):
    model = None
    queryset = None
    slug_field = 'slug'
    context_object_name = None
    slug_url_kwarg = 'slug'
    pk_url_kwarg = 'pk'
    query_pk_and_slug = False

    def get_object(self, queryset=None):
        if queryset is None:
            queryset = self.get_queryset()

        pk = self.kwargs.get(self.pk_url_kwarg)
        slug = self.kwargs.get(self.slug_url_kwarg)
        if pk is not None:
            queryset = queryset.filter(pk=pk)

        if slug is not None and (pk is None or self.query_pk_and_slug):
            slug_field = self.get_slug_field()
            queryset = queryset.filter(**{slug_field: slug})

        if pk is None and slug is None:
            raise AttributeError(
                "Generic detail view %s must be called with either an object "
                "pk or a slug in the URLconf." % self.__class__.__name__)

        try:
            # Get the single item from the filtered queryset
            obj = queryset.get()
        except queryset.model.DoesNotExist:
            raise Http404(_("No %(verbose_name)s found matching the query") %
                {'verbose_name': queryset.model._meta.verbose_name})

        return obj
```

https://github.com/django/django/blob/2.1/django/views/generic/detail.py

```python
    def get_queryset(self):
        if self.queryset is None:
            if self.model:
                return self.model._default_manager.all()
            else:
                raise ImproperlyConfigured(
                    "%(cls)s is missing a QuerySet. Define "
                    "%(cls)s.model, %(cls)s.queryset, or override "
                    "%(cls)s.get_queryset()." % {
                    'cls': self.__class__.__name__
                })
        return self.queryset.all()

    def get_context_data(self, **kwargs):
        """Insert the single object into the context dict."""
        context = {}
        if self.object:
            context['object'] = self.object
            context_object_name = self.get_context_object_name(self.object)
            if context_object_name:
                context[context_object_name] = self.object
        context.update(kwargs)
        return super().get_context_data(**context)

    # 다른 코드들 생략

class BaseDetailView(SingleObjectMixin, View):
    """A base view for displaying a single object."""
    def get(self, request, *args, **kwargs):
        self.object = self.get_object()
        context = self.get_context_data(object=self.object)
        return self.render_to_response(context)
```

```python
class DetailView(SingleObjectTemplateResponseMixin, BaseDetailView):
    pass
```

ListView

ListView

- 1개 모델에 대한 List 템플릿 처리
  - 모델명소문자_list 이름의 QuerySet을 템플릿에 전달
- 페이징 처리 지원

```python
from django.views.generic import ListView
from .models import Post


post_list1 = ListView.as_view(model=Post)

post_list2 = ListView.as_view(model=Post, paginate_by=10)


class PostListView(ListView):
    model = Post
    paginate_by = 10

post_list3 = PostListView.as_view()


class PostListView(ListView):
    model = Post
    paginate_by = 10

    def get_queryset(self):
        qs = super().get_queryset()
        qs = qs.filter(...)
        return qs

post_list4 = PostListView.as_view()
```

ListView 상속관계

django.views.generic.list.ListView

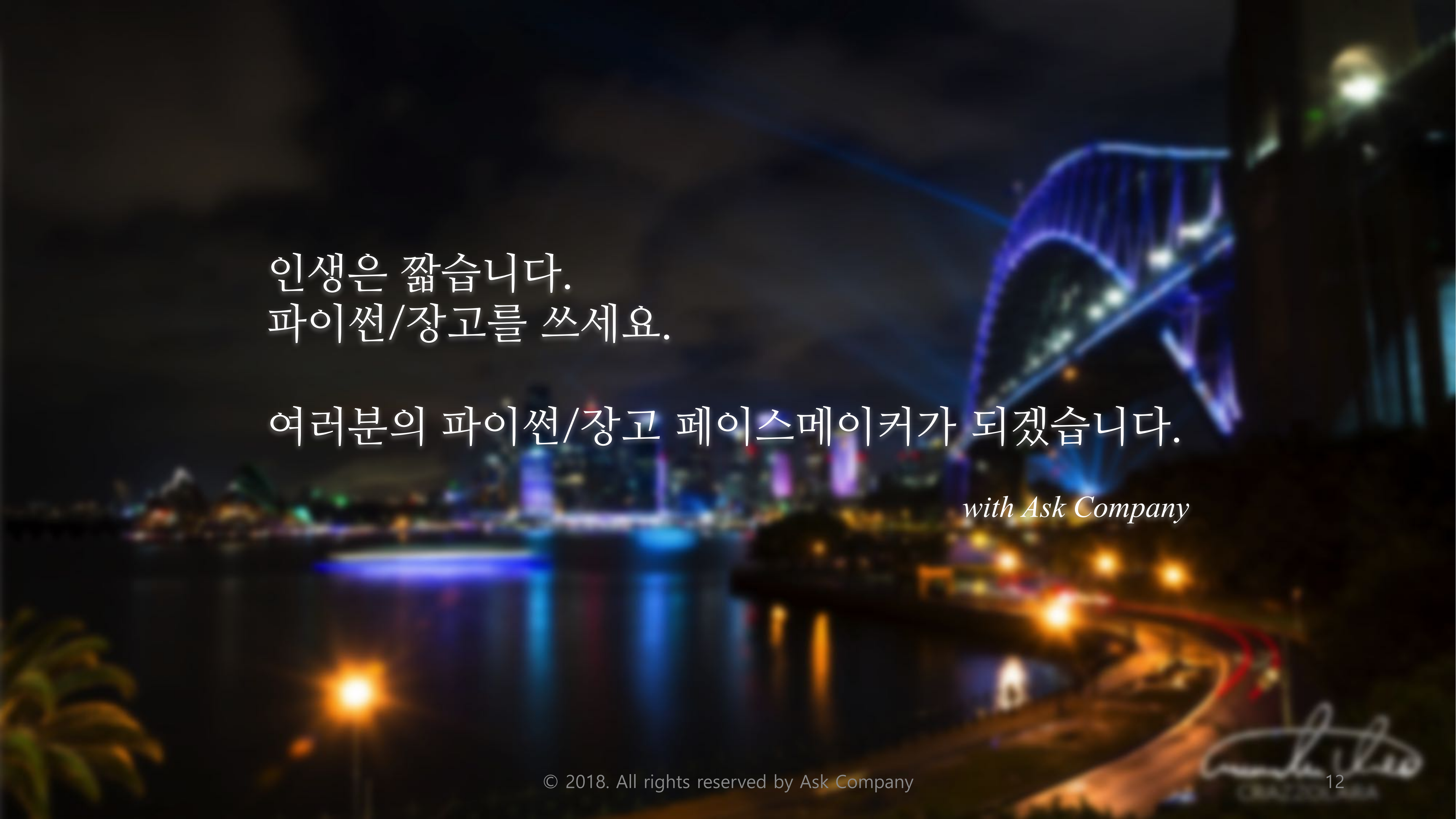
- ← MultipleObjectTemplateResponseMixin
  - template_name이 지정되지 않았다면, 모델명으로 템플릿 경로 유추
  - ← TemplateResponseMixin
- ← BaseListView
  - ← MultipleObjectMixin : Paginator가 적용된 QuerySet 획득
    - ← ContextMixin
  - ← View

```python
class MultipleObjectMixin(ContextMixin):
    """A mixin for views manipulating multiple objects."""
    allow_empty = True
    queryset = None
    model = None
    paginate_by = None
    paginate_orphans = 0
    context_object_name = None
    paginator_class = Paginator
    page_kwarg = 'page'
    ordering = None

    def get_queryset(self):
        # ...
        return queryset

    def paginate_queryset(self, queryset, page_size):
        # ...
        return (paginator, page, page.object_list, page.has_other_pages())

    def get_context_data(self, *, object_list=None, **kwargs):
        # ...
        if page_size:
            paginator, page, queryset, is_paginated = self.paginate_queryset(
                queryset, page_size)
            context = {
                'paginator': paginator, 'page_obj': page,
                'is_paginated': is_paginated, 'object_list': queryset
            }
        else:
            context = {
                'paginator': None, 'page_obj': None,
                'is_paginated': False, 'object_list': queryset
            }
        # ...
        return super().get_context_data(**context)
```

```python
class BaseListView(MultipleObjectMixin, View):
    """A base view for displaying a list of objects."""
    def get(self, request, *args, **kwargs):
        self.object_list = self.get_queryset()
        allow_empty = self.get_allow_empty()

        if not allow_empty:
            # When pagination is enabled and object_list is a queryset,
            # it's better to do a cheap query than to load the unpaginated
            # queryset in memory.
            if self.get_paginate_by(self.object_list) is not None and \
                    hasattr(self.object_list, 'exists'):
                is_empty = not self.object_list.exists()
            else:
                is_empty = not self.object_list
            if is_empty:
                raise Http404(_("Empty list and '%(class_name)s.allow_empty' is False.") % {
                    'class_name': self.__class__.__name__,
                })
        context = self.get_context_data()
        return self.render_to_response(context)
```

```python
class ListView(MultipleObjectTemplateResponseMixin, BaseListView):
    pass
```

https://github.com/django/django/blob/2.1/django/views/generic/list.py



인생은 짧습니다.
파이썬/장고를 쓰세요.

여러분의 파이썬/장고 페이스메이커가 되겠습니다.

with Ask Company