Mesut ÖNCEL Software Developer


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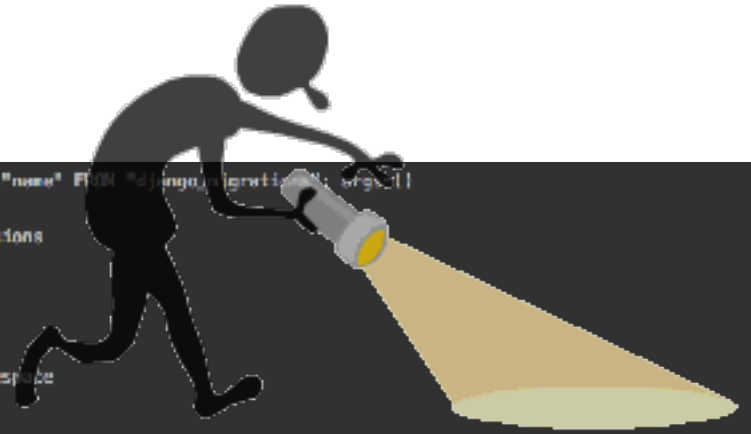
```
LOGGING = {
    'version': 1,
    'disable_existing_loggers': False,
    'formatters': {
        'simple': {
            'format': '%(levelname)s %(message)s'
        },
    },
    'handlers': {
        'log_to_stdout': {
            'level': 'DEBUG',
            'class': 'logging.StreamHandler',
            'formatter': 'simple',
            },
        },
    'loggers': {
        'main': {
            'handlers': ['log_to_stdout'],
            'level': 'DEBUG',
            'propagate': True,
        },
        'django.db': {
            'handlers': ['log_to_stdout'],
            'level': 'DEBUG',
            'propagate': True,
        }
    }
}
```



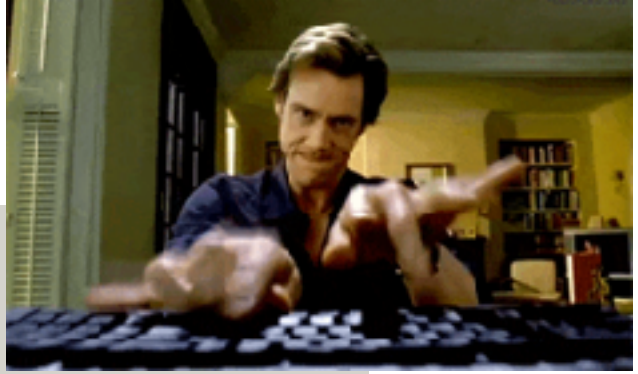
```
DEBUG (0.000) SELECT "django_migrations"."app", "django_migrations"."name" FROM "django_migrations"; args=()
Operations to perform:
  Apply all migrations: admin, auth, contenttypes, performance, sessions
Running migrations:
DEBUG (0.001)
          SELECT c.relname, c.relkind
          FROM pg_catalog.pg_class c
          LEFT JOIN pg_catalog.pg_namespace n ON n.oid = c.relnamespace
          WHERE c.relkind IN ('r', 'v')
              AND n.nspname NOT IN ('pg_catalog', 'pg_toast')
              AND pg_catalog.pg_table_is_visible(c.oid); args=None
DEBUG CREATE TABLE "performance_booking" ("id" serial NOT NULL PRIMARY KEY, "created_at" timestamp with time zone NOT NULL, "checkin_date" date NOT NULL, "checkout_date" date NOT NULL, "is_cancelled" varchar(25) NOT NULL); (params None)
DEBUG (0.014) CREATE TABLE "performance_booking" ("id" serial NOT NULL PRIMARY KEY, "created_at" timestamp with time zone NOT NULL, "checkin_date" date NOT NULL, "checkout_date" date NOT NULL, "is_cancelled" varchar(25) NOT NULL); args=None
DEBUG CREATE TABLE "performance_destination" ("id" serial NOT NULL PRIMARY KEY, "country_name" varchar(100) NOT NULL, "city_name" varchar(100) NOT NULL); (params None)
DEBUG (0.004) CREATE TABLE "performance_destination" ("id" serial NOT NULL PRIMARY KEY, "country_name" varchar(100) NOT NULL, "city_name" varchar(100) NOT NULL); args=None
DEBUG CREATE TABLE "performance_member" ("id" serial NOT NULL PRIMARY KEY, "full_name" varchar(150) NOT NULL, "email" varchar(100) NOT NULL, "phone" varchar(15) NOT NULL); (params None)
DEBUG (0.004) CREATE TABLE "performance_member" ("id" serial NOT NULL PRIMARY KEY, "full_name" varchar(150) NOT NULL, "email" varchar(100) NOT NULL, "phone" varchar(15) NOT NULL); args=None
DEBUG CREATE TABLE "performance_otel" ("id" serial NOT NULL PRIMARY KEY, "otel_name" varchar(255) NOT NULL, "destination_id" integer NOT NULL); (params None)
DEBUG (0.004) CREATE TABLE "performance_otel" ("id" serial NOT NULL PRIMARY KEY, "otel_name" varchar(255) NOT NULL, "destination_id" integer NOT NULL); args=None
```

Django Model Mimarisi Nasıl Olmalı?

```
class Member(models.Model):
    full_name = models.CharField(max_length=150)
    email = models.CharField(max_length=100, db_index=True)
    phone = models.CharField(max_length=15)

class Destination(models.Model):
    country_name = models.CharField(max_length=100)
    city_name = models.CharField(max_length=100)

class Otel(models.Model):
    destination = models.ForeignKey(Destination,
on_delete=models.CASCADE)
    otel_name = models.CharField(max_length=255, db_index=True)

class Booking(models.Model):
    otel = models.ForeignKey(Otel, on_delete=models.CASCADE)
    member = models.ForeignKey(Member, on_delete=models.CASCADE)
    created_at = models.DateTimeField()
    checkin_date = models.DateField()
    checkout_date = models.DateField()
    is_cancelled = models.CharField(max_length=25, db_index=True)
```

Uygun data tipi ve boyutları seçilmeli.

.save()



```
batch_size = 5000
for batch in tqdm(range(1, 100000, batch_size)):
    request_url = 'https://randomuser.me/api/?
    results={}'.format(batch_size)
    results = requests.request('GET', request_url)
    results = json.loads(results.text).get('results')
    if not isinstance(results, list):
        results = [results]
    for result in results:
        if not result:
            continue
        login = result.get('login')
        name = login.get('username')
        email = result.get('email')
        phone = '+9093408902384'
        Member(full_name=name, email=email, phone=phone).save()
```

Bulk Create

```
datas =[]
batch_size = 5000
for batch in tqdm(range(1, 100000, 5000)):
    request_url = 'https://randomuser.me/api/?
results={}'.format(batch_size)
    results = requests.request('GET', request_url)
    results = json.loads(results.text).get('results')
    if not isinstance(results, list):
        results = [results]
    for result in results:
        if not result:
            continue
        login = result.get('login')
        name = login.get('username')
        email = result.get('email')
        phone = '+9093408902384'
        datas.append(Member(
            full_name=name,
            email=email,
            phone=phone))
batch_size = 600
Member.objects.bulk_create(datas, batch_size)
```

Sorgu Optimizasyonu

Lazy-loaded

```
In [6]: qs = Member.objects.filter(email__contains='example')

In [7]: qs = qs.filter(pk__range=(324252,324270))

In [8]: qs
Out[8]: DEBUG (0.001) SELECT "performance_member"."id", "performance_member"."full_name",
"performance_member"."email", "performance_member"."phone"
                        FROM "performance_member"
                            WHERE ("performance_member"."email"::text LIKE '%example%' AND
"performance_member"."id"
                            BETWEEN 324252 AND 324270) LIMIT 21;
```

.get()

```
def get(self, *args, **kwargs):
        """
        Perform the query and return a single object matching the given
        keyword arguments.
        """
        clone = self.filter(*args, **kwargs)
        if self.query.can_filter() and not self.query.distinct_fields:
            clone = clone.order_by()
        num = len(clone)
        if num == 1:
            return clone._result_cache[0]
        if not num:
            raise self.model.DoesNotExist(
                "%s matching query does not exist." %
                self.model._meta.object_name
            )
        raise self.model.MultipleObjectsReturned(
            "get() returned more than one %s -- it returned %s!" %
            (self.model._meta.object_name, num)
```

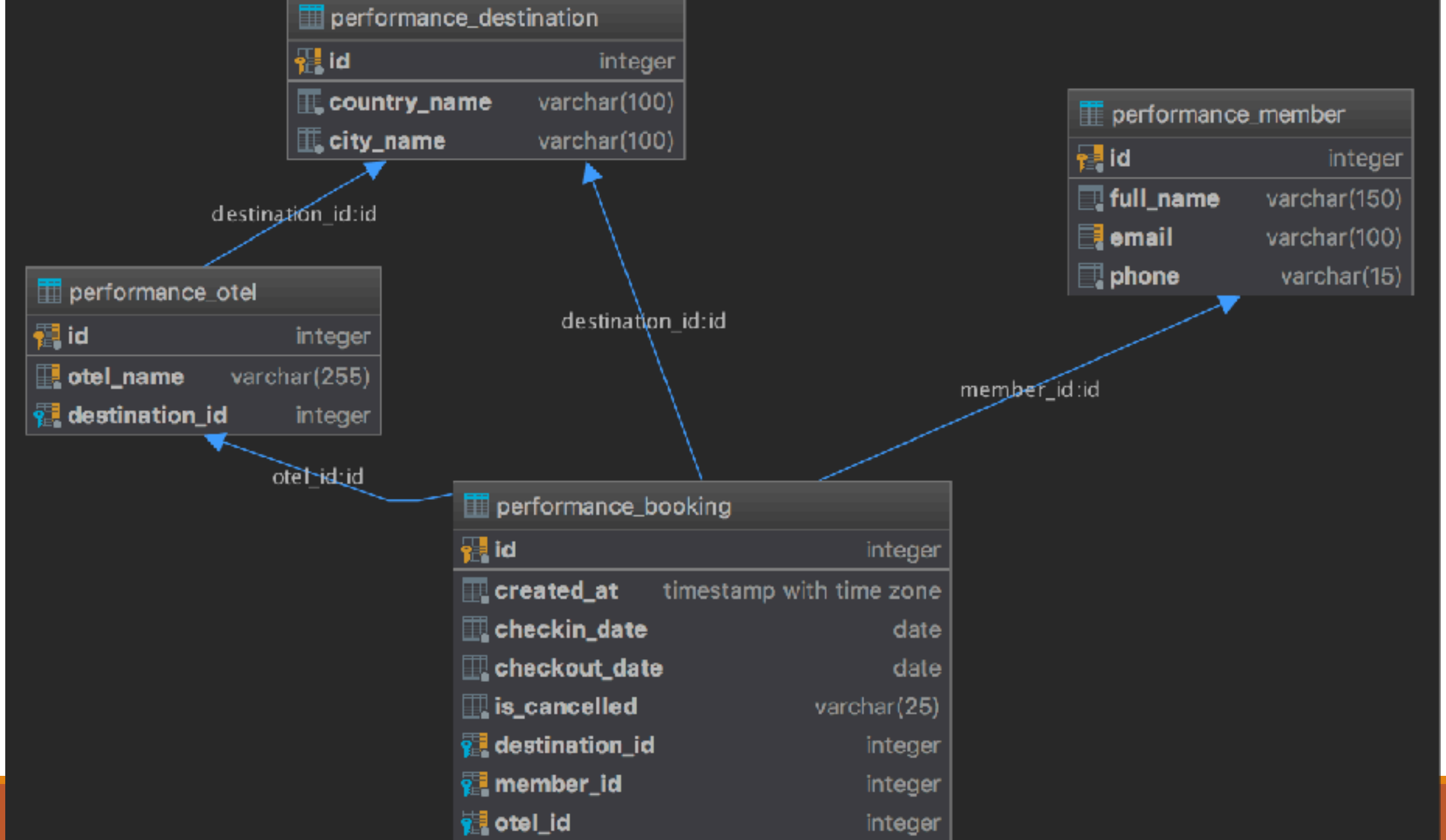
.get() vs .first()

```
Member.objects.filter(email='amber.hall@example.com').first()

DEBUG (0.005) SELECT "performance_member"."id", "performance_member"."full_name",
                     "performance_member"."email", "performance_member"."phone"
    FROM "performance_member"
        WHERE "performance_member"."email" = 'amber.hall@example.com'
        ORDER BY "performance_member"."id" ASC LIMIT 1;
```

```
Member.objects.get(email='amber.hall@example.com')

DEBUG (0.003) SELECT "performance_member"."id", "performance_member"."full_name",
                     "performance_member"."email", "performance_member"."phone"
    FROM "performance_member"
    WHERE "performance_member"."email" = 'amber.hall@example.com';
```

Extra Foreign Key Eklenmesi

```
class Member(models.Model):
    full_name = models.CharField(max_length=150)
    email = models.CharField(max_length=100, db_index=True)
    phone = models.CharField(max_length=15)

class Destination(models.Model):
    country_name = models.CharField(max_length=100)
    city_name = models.CharField(max_length=100)

class Otel(models.Model):
    destination = models.ForeignKey(Destination, on_delete=models.CASCADE)
    otel_name = models.CharField(max_length=255, db_index=True)

class Booking(models.Model):
    otel = models.ForeignKey(Otel, on_delete=models.CASCADE)
    member = models.ForeignKey(Member, on_delete=models.CASCADE)
    created_at = models.DateTimeField()
    checkin_date = models.DateField()
    checkout_date = models.DateField()
    is_cancelled = models.CharField(max_length=25)
    destination = models.ForeignKey(Otel, on_delete=models.CASCADE)
```


performance_destination
id integer
country_name varchar(100)
city_name varchar(100)
performance_member
id integer
full_name varchar(150)
email varchar(100)
phone varchar(15)
destination_id:id
destination_id:id
member_id:id
performance_otel
id integer
otel_name varchar(255)
destination_id integer
otel_id:id
performance_booking
id integer
created_at timestamp with time zone
checkin_date date
checkout_date date
is_cancelled varchar(25)
destination_id integer
member_id integer
otel_id integer

.exists()

```
In [3]: members = Member.objects.exclude(email='amber.hall@example.com').filter(full_name='sadleopard927')

In [4]: if members:
   ...:     print(True)
   ...:
DEBUG (0.077) SELECT "performance_member"."id", "performance_member"."full_name", "performance_member"."email",
                     "performance_member"."phone"
                     FROM "performance_member"
                     WHERE (NOT ("performance_member"."email" = 'amber.hall@example.com')
                     AND "performance_member"."full_name" = 'sadleopard927');
True
```


```
In [2]: members =
Member.objects.exclude(email='sofia.king@example.com').filter(full_name='sadleopard927')

In [3]: members.exists()
DEBUG (0.016) SELECT (1) AS "a"
                     FROM "performance_member"
                     WHERE (NOT ("performance_member"."email" = 'sofia.king@example.com')
                     AND "performance_member"."full_name" = 'sadleopard927') LIMIT 1;
Out[3]: True
```

.count()

```
In [4]: len(members)
DEBUG (0.105) SELECT "performance_member"."id",
"performance_member"."full_name",
                    "performance_member"."email", "performance_member"."phone"
                FROM "performance_member" WHERE (NOT
("performance_member"."email" = 'sofia.king@example.com')
```

```
In [2]: members = Member.objects.exclude(email='sofia.king@example.com').filter(full_name='sadleopard927')

In [3]: members.count()
DEBUG (0.078) SELECT COUNT(*) AS "__count" FROM "performance_member" WHERE (NOT
("performance_member"."email" = 'sofia.king@example.com') AND "performance_member"."full_name" =
'sadleopard927');
```

.iterator()

.defer() - .only()

.prefect_related()

```
In [89]: Destination.objects.prefetch_related('booking_set')

Out[89]: DEBUG (0.002) SELECT "performance_destination"."id",
"performance_destination"."country_name",
                        "performance_destination"."city_name" FROM "performance_destination" LIMIT
21; args=()
DEBUG (0.001) SELECT "performance_booking"."id", "performance_booking"."otel_id",
"performance_booking"."member_id",
                     "performance_booking"."created_at", "performance_booking"."checkin_date",
"performance_booking"."checkout_date",
                     "performance_booking"."is_cancelled", "performance_booking"."destination_id"
                     FROM "performance_booking"
                     WHERE "performance_booking"."destination_id" IN (1, 2, 3); args=(1, 2, 3)
<QuerySet [<Destination: Destination object (1)>, <Destination: Destination object (2)>,
<Destination: Destination object (3)>]>
```

.select_related()

```
In [90]: Booking.objects.select_related('member')

Out[90]: DEBUG (0.005) SELECT "performance_booking"."id", "performance_booking"."otel_id",
"performance_booking"."member_id",
                                "performance_booking"."created_at",
"performance_booking"."checkin_date", "performance_booking"."checkout_date",
                                "performance_booking"."is_cancelled",
"performance_booking"."destination_id", "performance_member"."id",
                                "performance_member"."full_name", "performance_member"."email",
"performance_member"."phone"
                                FROM "performance_booking"
                                INNER JOIN "performance_member"
                                ON ("performance_booking"."member_id" = "performance_member"."id")
LIMIT 21; args=()
<QuerySet [<Booking: Booking object (2)>, <Booking: Booking object (3)>, <Booking: Booking object
(4)>, <Booking: Booking object (5)>, <Booking: Booking object (6)>]>
```

```
In [89]: qs = Destination.objects.filter(city_name='Isparta')

In [90]: for otel in qs.first().otel_set.all():
    ...:     for booking in otel.booking_set.all():
    ...:         print(booking.member.full_name)
    ...:
```

```
DEBUG (0.001) SELECT "performance_destination"."id", "performance_destination"."country_name", "performance_destination"."city_name" FROM "performance_destination" WHERE "performance_destination"."city_name" = 'Isparta' ORDER BY "performance_destination"."id" ASC LIMIT 1; args=('Isparta',)

DEBUG (0.000) SELECT "performance_otel"."id", "performance_otel"."destination_id", "performance_otel"."otel_name" FROM "performance_otel" WHERE "performance_otel"."destination_id" = 2; args=(2,)

DEBUG (0.000) SELECT "performance_booking"."id", "performance_booking"."otel_id", "performance_booking"."member_id", "performance_booking"."created_at", "performance_booking"."checkin_date", "performance_booking"."checkout_date", "performance_booking"."is_cancelled", "performance_booking"."destination_id" FROM "performance_booking" WHERE "performance_booking"."otel_id" = 5; args=(5,)

DEBUG (0.000) SELECT "performance_member"."id", "performance_member"."full_name", "performance_member"."email", "performance_member"."phone" FROM "performance_member" WHERE "performance_member"."id" = 324254; args=(324254,)
angryelephant752

DEBUG (0.000) SELECT "performance_booking"."id", "performance_booking"."otel_id", "performance_booking"."member_id", "performance_booking"."created_at", "performance_booking"."checkin_date", "performance_booking"."checkout_date", "performance_booking"."is_cancelled", "performance_booking"."destination_id" FROM "performance_booking" WHERE "performance_booking"."otel_id" = 4; args=(4,)

DEBUG (0.000) SELECT "performance_member"."id", "performance_member"."full_name", "performance_member"."email", "performance_member"."phone" FROM "performance_member" WHERE "performance_member"."id" = 324254; args=(324254,)
angryelephant752
```

```
qs=Destination.objects.filter(city_name='Isparta').
                       prefetch_related(Prefetch('otel_set__booking_set',
                          queryset=Booking.objects.select_related('member')))

In [88]: for otel in qs.first().otel_set.all():
    ...:     for booking in otel.booking_set.all():
    ...:         print(booking.member.full_name)
    ...:
```

```
DEBUG (0.001) SELECT "performance_destination"."id", "performance_destination"."country_name",
"performance_destination"."city_name" FROM "performance_destination" WHERE "performance_destination"."city_name" = 'Isparta'
ORDER BY "performance_destination"."id" ASC LIMIT 1; args=('Isparta',)
```

```
DEBUG (0.000) SELECT "performance_otel"."id", "performance_otel"."destination_id", "performance_otel"."otel_name" FROM
"performance_otel" WHERE "performance_otel"."destination_id" IN (2); args=(2,)
```

```
DEBUG (0.001) SELECT "performance_booking"."id", "performance_booking"."otel_id", "performance_booking"."member_id",
"performance_booking"."created_at", "performance_booking"."checkin_date", "performance_booking"."checkout_date",
"performance_booking"."is_cancelled", "performance_booking"."destination_id", "performance_member"."id",
"performance_member"."full_name", "performance_member"."email", "performance_member"."phone" FROM "performance_booking"
INNER JOIN "performance_member" ON ("performance_booking"."member_id" = "performance_member"."id") WHERE
"performance_booking"."otel_id" IN (4, 5); args=(4, 5)
angryelephant752
angryelephant752
```

.delete()

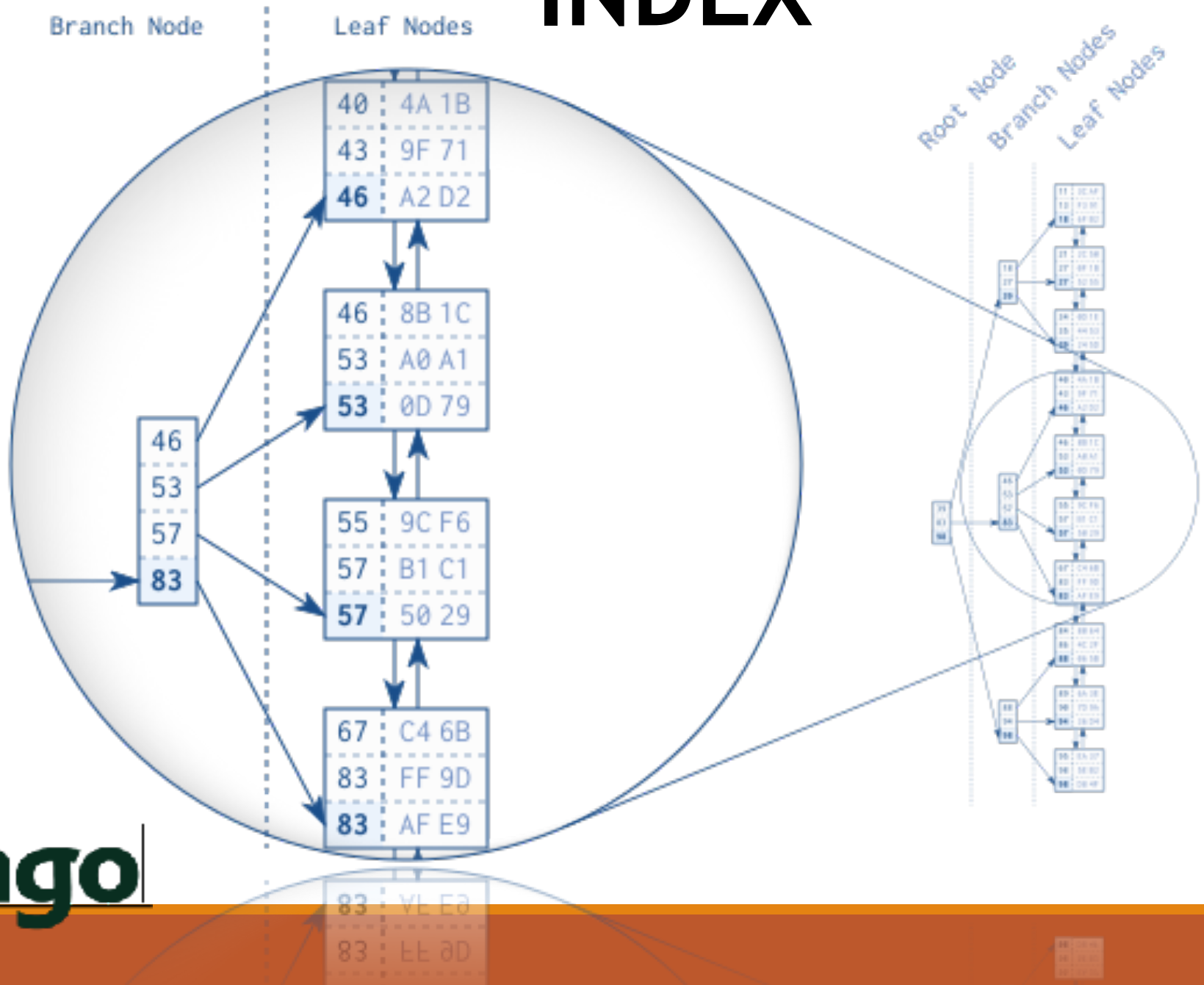
```
members=Member.objects.all()
members.delete()

DEBUG (0.001) DELETE FROM "performance_member" WHERE "performance_member"."id"
IN (101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115,
 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131,
 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147,
 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163,
 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179,
 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195,
 196, 197, 198, 199, 200);
DEBUG (0.001) DELETE FROM "performance_member" WHERE "performance_member"."id" IN
(1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23,
24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44,
45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65,
66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86,
87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100);
Out[3]: (57000, {'performance.Booking': 0, 'performance.Member': 57000})
```


Truncate Table

```
class Member(models.Model):
    full_name = models.CharField(max_length=150)
    email = models.CharField(max_length=100, db_index=True)
    phone = models.CharField(max_length=15)

    @classmethod
    def truncate(cls):
        with connection.cursor() as cursor:
            cursor.execute('TRUNCATE TABLE "{0}" CASCADE'.format(cls._meta.db_table))
```

```
members = Member.truncate()
DEBUG (0.012) TRUNCATE TABLE "performance_member" CASCADE;
```

INDEX


Branch Node
Leaf Nodes
40 4A 1B
43 9F 71
46 A2 D2
46 8B 1C
53 A0 A1
53 0D 79
55 9C F6
57 B1 C1
57 50 29
67 C4 6B
83 FF 9D
83 AF E9
46
53
57
83
Root Node
Branch Nodes
Leaf Nodes


django

Index Operation

Concurrent Index

```
class Migration(migrations.Migration):
    atomic = False # disable transaction
    dependencies = [('performance', '0018_xxx_idx_booking')]
    operations = [
                migrations.RunSQL('CREATE INDEX CONCURRENTLY email_idx
      ON booking (email)')
         ]
```

Partial Index

```
class Migration(migrations.Migration):

    dependencies = [
        ('performance', '0019_email_idx_booking'),
    ]

    operations = [
        migrations.RunSQL(
            "CREATE INDEX idx_booking ON performance_booking (created_at) where
is_cancelled='booked';",
        )

    ]
```

TEŞEKKÜRLER