Python & Django Cheatsheet for Interviews

1. Python Basics

- Variables: a = 10, b = "Hello"

- Data Types: int, float, str, bool, list, tuple, dict, set

- Control Flow: if, elif, else; for loop; while loop

- Functions: def my_func(arg): return arg

- List Comprehension: [x for x in range(5) if x%2 == 0]

- Exception Handling:

```
try:

    # code

except Exception as e:

    print(e)
```

2. Object-Oriented Programming

- Class Definition:

```
class MyClass:

    def __init__(self, val):

        self.val = val
```

- Inheritance:

```
class ChildClass(ParentClass):

    pass
```

- Encapsulation, Abstraction, Polymorphism

3. Common Python Modules

- os: file operations

- sys: system-specific parameters

- datetime: date/time manipulation

- random: generate random numbers

- requests: HTTP requests

- json: JSON encoding/decoding

4. Django Basics

- Project Setup: django-admin startproject myproject

- App Creation: python manage.py startapp myapp

- Run Server: python manage.py runserver

- Models: Define database structure in models.py

- Admin: Register models in admin.py

- Views: Handle logic in views.py

- Templates: HTML with {{ variables }} and {% tags %}

- URL Routing: Define paths in urls.py

5. Django ORM

- Create: Model.objects.create(field='value')

- Read: Model.objects.all(), Model.objects.get(id=1)

- Filter: Model.objects.filter(name='John')

- Update: obj = Model.objects.get(id=1); obj.name = 'New'; obj.save()

- Delete: obj.delete()

6. Django Forms & Auth

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- Forms: Use forms.Form or forms.ModelForm

- Auth: Use django.contrib.auth for login, logout, user creation

- Middleware: Used for request/response processing