Exercise 2.3: Django Models

1. Do some research on Django models. In your own words, write down how Django models work and what their benefits are.

    Django models are similar to SQL that developers use with Django to create tables and their attributes. Django models simplify the task of sending SQL queries to perform CRUD and similar operations on databases on Django's admin panel.
    To use models you should have a project and an app started within and you use two commands: 'makemigrations' and 'migrate' to update changes to the database. You can then add models to the models.py file of the app and register your model to the admin.py file to easily modify the database using the admin UI.
    In creating models, the whole model is defined as a class with database fields specified as class attributes (ex. 'CharField', 'DateField',..). Each field has field options that are arguments used to add constraints or characteristics to the corresponding field.

2. In your own words, explain why it is crucial to write test cases from the beginning of a project. You can take an example project to explain your answer.

    It is recommended to write automated tests starting early in a project and then write as much code needed to pass the test to avoid the sudden issue that leads the app to break or simply prevent bugs. It's important as it speeds up development time as programmers avoid patterns that produce errors and adopt best practices that prevent errors. Furthermore, it ensures a fully functional, tested and robust program, starting from the basics to the complex features of an app.