

COURSE CODE

LECTURER

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CONTENTS

These lecture notes were collated by me from a mixture of sources , the two main sources being the lecture notes provided by the lecturer and the content presented in-lecture. All other referenced material (if used) can be found in the *Bibliography* and *References* sections.

The primary goal of these notes is to function as a succinct but comprehensive revision aid, hence if you came by them via a search engine , please note that they're not intended to be a reflection of the quality of the materials referenced or the content lectured.

Lastly, with regards to formatting, the pdf doc was typeset in L^AT_EX, using a modified version of Stefano Maggiolo's [class](#)

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1 INTRODUCTION

1.1 definition. Web Application is a distributed information management system. In essence it is an application , usually spread around several machines, which allows users to query and manipulate data, and which is then displayed via the browser

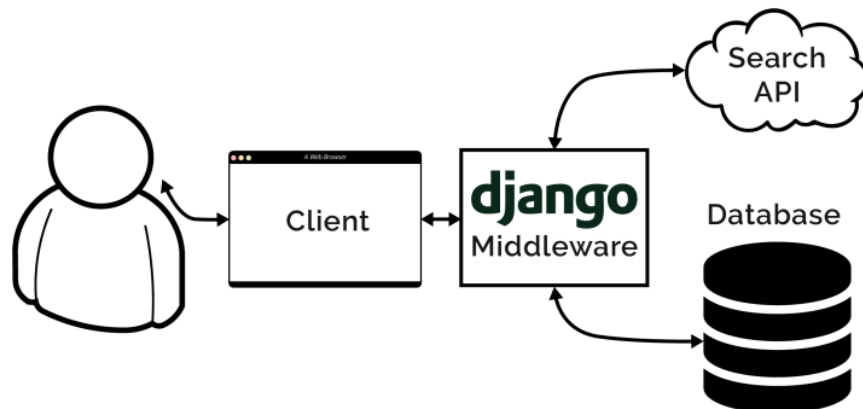
1.2 remark. The distinction between a website and a web app is less clear nowadays, but the main feature of a web app seems to be its interactive nature, as opposed to the more expository nature of simple websites

1.3 definition. Distributed Information Management System (DIM) a group of machines working together but appearing to the user as a single entity. These systems have major advantages, such as concurrent and independent operation. One machine can fail or be upgraded without the system failing

Architecture

A common system architecture for a DIM is represented in the diagram below. Web development has a wide range of tools and new frameworks and languages come into being every other week. In this class, we'll focus on the tools listed below but in general each tool group performs certain tasks which are essential to each bit of the system

1.4 remark. Most web apps follow a 3-tier architecture : Presentation, Application, Data. The rango app will also include an external service , the Bing search API



Overview of the 3-tier system architecture for our Rango application.

1.5 definition. User machine or person which initiates contact with the client

1.6 definition. Client program sitting on the user device which sends/accepts requests/responses and acts on the messages by communicating to them the user and/or by altering state in some way

1.7 remark. A request is usually done via HTTP where the data to be sent is

embedded, and responses are also sent via HTTP with content usually delivered in a markup language like XHTML or JSON

1.8 definition. Middleware Responsible for accepting and sending responses on server side and for coordinating messages

1.9 remark. In this course we'll be using Django

1.10 remark. The database is usually kept in a separate node

Tools Covered

Proficiency expected

- | | |
|-------------------|--------------------|
| 1. Python | 8. AJAX |
| 2. Django | 9. Github |
| 3. HTML/CSS | 10. Pip |
| 4. HTTP GET/POST | 11. PythonAnywhere |
| 5. XML/XHTML/JSON | 12. IDLE |
| 6. JS | 13. Venv |
| 7. JQuery | 14. Draw.io |