Lancaster University
Leipzig

Programming Clinic

LZPMPC005 | Week 20

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This Week

1. **Recall on last week's clinic**
2. **Feedback on last week projects**
3. **Weeks 20-23: Event-driven Programming**
4. **Next week project**
5. **Useful links and examples**

20.1

Recall on last week's clinic

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Organising Visitor Tours and Facilitating Animal Interactions

> “Virtual Safari” offers guided tours where visitors can learn about and interact with certain animals. The system should help organise these tours, ensuring visitor safety and animal well-being.

Suggested Approach:

You should enhance the existing system by:

- Creating classes for guided tours, detailing the route, duration, and animals included
- Implementing methods to schedule tours, ensuring no two tours overlap in the same habitat
- Tracking visitor interactions and feedback for each tour

Key points: *consider implementing a feature that would allow instant feedback from visitors to their tour guide to continuously improve the tour experience as it is taking place.*

20.2

Feedback on last week projects

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Feedback on last week projects

1. Use Docker containers for easier deployment
2. Integrate data validation in your method implementations
3. The sequence diagrams should match your software live demo
4. All the implemented feature should be tested through a web browser and they should all return a Django template
5. Provide a proper Readme documentation that contains a clear guideline to deploy your application
6. All your weekly slides should be included in your Github repositories
7. Clean up your repo: hidden files, unnecessary files and folders, use the .gitignore file.
8. GitHub is the tool for exchanging codes and setting up the tasks
9. Use correct UML notations for the use case, sequence and class diagrams

20.3

Weeks 20-23: Event-driven Programming

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Weeks 20-23: Event-driven Programming

> The next four weeks of the group project will allow you to design functions or services (hosted in two backend servers) that will be used by a client interface (frontend coded in TypeScript)

Scenario: Online Auctions

Suggested programming languages: `TypeScript`, `Python`, `C++` and `SQL`

It will consist of the following tasks:

1. Week 20: Implementing Item Listings and Real-time Bidding
2. Week 21: Managing Auction Timers and Notifying Winning Bids
3. Week 22: Facilitating User Reviews and Collecting Feedback
4. Week 23: Implementing Dynamic Pricing and Organising Flash Sales

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20.4

Next week project

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Implementing Item Listings and Real-time Bidding

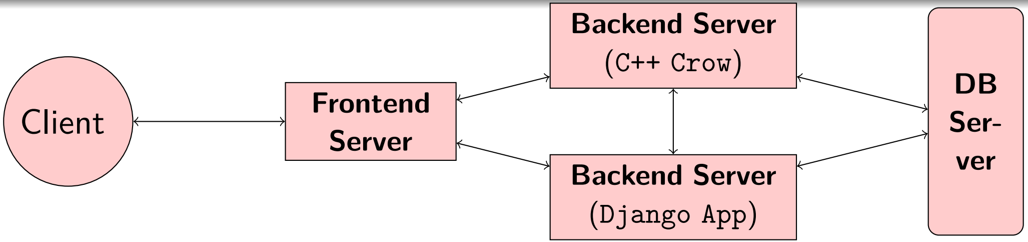
> “eBid”, a budding online auction platform, wants to allow users to list items for auction and enable real-time bidding. They need a system where sellers can list items with details like starting price, description, and images. Buyers should be able to place real-time bids on these items.

Suggested Approach:
It will be compulsory to start by defining classes for different items, item categories, and users of your systems, including the use case and sequence diagrams. You will then implement the features for:

- Creating new item listings
- Placing bids in real-time as buyers interact with the platform

Key points: *Ensure that the system updates bid amounts in real-time for all users viewing the item; also, consider using web sockets or similar technologies for real-time data transmission.*

New software architecture



- **Client**: it could be any browser of your choice, e.g., firefox, Google chrone, Safari
- **Frontend**: the template in your previous project is now replace by a JS framework such as ReacJS or Angular
- **Backend**: our **Django** backend will stay unchanged. We wiil add a `C++` Crow server
- **DB**: here you are free to use a DB manager of your choice, e.g., MongoDB, PostgreSQL, MariaDB, etc...

20.5

Useful links and examples

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Useful links and example

- Django and Angular Tutorials
- CRUD Operations: Django and Angular
- How to connect Django to React JS
- Django And React Applications