CM1101 Computational Thinking

Project

Dr Kirill Sidorov
SidorovK@cardiff.ac.uk
www.facebook.com/kirill.sidorov

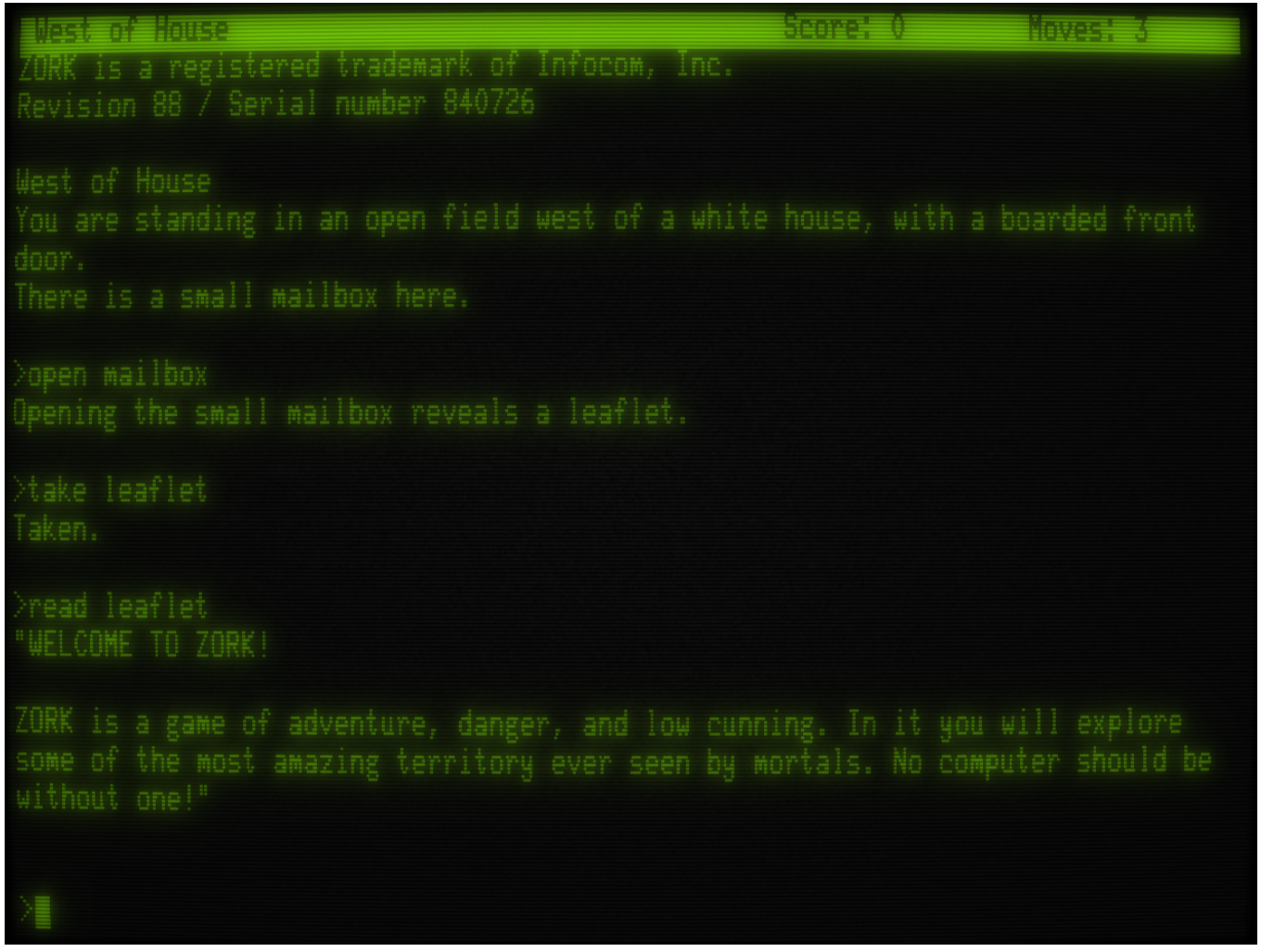
School of Computer Science and Informatics
Cardiff University, UK

Skills

Concepts you know so far (or will know shortly):

- Values, variables, data types.
- How Python evaluates expressions. Arithmetic.
- Boolean expressions.
- Control structures (`if`, `while`) etc.
- Operations on strings. Indexing.
- Lists (arrays).
- Dictionaries.
- Functions. Parameters and arguments. Return values.
- Modules.

Task: Develop a text-based adventure game in Python



How to approach the game

- You will be working first individually, then in teams.
- To help you get started, I have put together two templates:
  - Exercise "Beginnings of a Game": very basic movement around the map.
  - Exercise "Improving the Game" adds inventory items and a basic verb-object parser.
- There are two sets of lab exercises, each of which asks to complete the corresponding template.
- Upon completion, you should have a very basic working text adventure game.
- Finish these exercises **INDIVIDUALLY**. These are **ASSESSED**.
- Only then start working as a group.

Working in teams

- When several people work on the same project concurrently they need to coordinate their efforts.
- Organise and control revisions they make to the shared code in a methodical and logical way.
- This is what revision control systems are for.
- You will be using a popular system called **Git** to manage your shared code.
- I have put together a further set of lab exercises that teaches you how to use **Git**.

Approximate plan

- Week 1–2:
  - Complete the Lab Exercises 1, 2, 3.
  - Learn to use Git (guided lab exercises). Each member of the team obviously needs to do it on their own.
  - Complete the first game exercise/template.
- Late Week 2–early Week 3: Complete the second game exercise/template.
- Week 3: start working on your final game (you may start sooner, of course) **IN TEAMS**.
- End of Week 3: demonstrate your working solution to both game template exercises.
  This is **worth 10% (each)** of CM1101 marks.
- Week 4 Thursday: present and "sell" your final game.
  This is **worth 50%**.
- Week 4 Friday: exhibition and awards.

Prizes

PRIZES:

- For the best overall performance in CM1101.
- **Best game**.
- Funniest external task picture.

Ceremony at 14:10, Friday Week 4.

Ideas for games

- Arbitrary victory conditions.
- Non-linear story line. Multiple endings.
- RPG-like player.
- Score. Saving and loading.
- Time/turn limit. Real-time as opposed to turn-based.
- NPCs and monsters. Combat system.
- Sound and graphics.
- Other assets, *e.g.* trailer.
- You are encouraged to come up with you own ideas!
- This is completely free-style! Anything goes!
- It **must** still be a **text-based adventure**.