COMP110 WORKSHEET A: SPACECHEM

Version 1.0
BSc Computing for Games

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Introduction

SpaceChem is a puzzle game released in 2011 by independent developers Zachtronics. The gameplay consists of solving problems in a visual programming environment, and as such requires many of the skills required of a programmer. This worksheet allows you to begin developing these skills, even if you are not yet comfortable with the syntax of more conventional programming languages such as Python.

To complete this worksheet:

(a) **Play** SpaceChem — it is available on the PCs in the Teaching Space, or it can be purchased from Steam for around £7;
(b) **Complete** all of the "research" and "production" levels on the planets of Sernimir II, Sernimir IV, and Danopth.

"The planet was a wretched wasteland, but I was so absorbed in the work that I hardly noticed. SpaceChem's reactor technology took what I had learned at university and transformed the principles of science to create new chemicals and compounds. I was enraptured by the process, which effectively amounted to alchemy."

— SpaceChem

Submission instructions

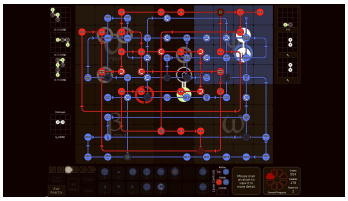
Begin by **forking** the GitHub repository at the following URL:

`https://github.com/Falmouth-Games-Academy/comp110-worksheets`

Once each level has been completed, upload a **video** of your solution to YouTube using the in-game upload feature. Create a YouTube playlist for your videos, and add a link to it to the `README.md` file within the `worksheet_A` directory. Note that SpaceChem disables its YouTube recording feature for "defense" levels; you do **not** need to submit videos for these.

In addition, take a **screenshot** of the reactor circuit (or of each reactor circuit in the case of multi-reactor levels). Upload your screenshots, with appropriate file names, to the `worksheet_A` directory within your GitHub repository. Again, screenshots are **not** required for "defense" levels.

Attend the scheduled worksheet feedback session on **Monday September 26th 2016**, ensuring that you have uploaded all material to GitHub before this time.



SpaceChem is a puzzle game in which players must apply computational thinking to build circuits which assemble chemical molecules.

Marking criteria

Remember that **it is better to submit incomplete work than to submit nothing at all**. If you do not manage to finish all assigned levels by the deadline, upload videos and screenshots of whatever levels you have completed and you will receive a passing grade.

To demonstrate **basic competency**, upload **at least one** completed level video to YouTube and **at least one** screenshot to GitHub, as instructed above.

To demonstrate **basic proficiency**, upload videos to YouTube and screenshots

to GitHub for **all** "Research" and "Production" levels on Sernimir II, Sernimir IV, and Danopth.

To demonstrate **novice competency**, achieve basic proficiency plus **one** of the following:

- Solve "Everyday is the First Day" in 300 cycles or fewer;
- Solve "It Takes Three" in 20 symbols or fewer;
- Solve at least **two** further levels from Alkonost.

To demonstrate **novice proficiency**, achieve basic proficiency plus **two** of the criteria above.

To demonstrate **professional competency**, achieve basic proficiency plus **all three** of the criteria above.