

Practical Session 1: Getting Started

Overview

The aims for this week's practical are:

1. Getting started with the Scratch environment.
2. Decide which route you are going to take, Scratch or Python/Pygame. If you choose the Python/Pygame route, you will need to prove that you are capable of doing so. Those that already have programming experience should be aware that Scratch has limited functionality while Python/Pygame are more flexible, but also more challenging to learn.
3. For those interested in Python/Pygame, getting started with this environment.

Task 1.1 – For all students

The first thing you must do is to start using Scratch and become familiar with the environment. Only after you have used this environment should you consider the Python/Pygame route.

Scratch should already be installed on all the assigned University computers, so you can simply start Scratch by selecting the shortcut from the programs menu or on the desktop. If Scratch is not installed or you are using your own laptop:

1. Download Scratch from http://info.scratch.mit.edu/Scratch_1.4_Download. If you are using a University computer you won't have installation privileges, so you will need to download WinScratch1.4.zip. If using your own computer, download the appropriate install file for your Operating System ... Linux users will either have to use the experimental package, or run the windows version using WINE.
2. Unzip the files to the desktop, or run the installer program, as appropriate.
3. You should now be able to start the program through a shortcut or by directly starting the executable.

The documentation available for on the MIT's Scratch website is enough for you to get started, so have fun! Remember your tutor is there to help.

Getting Started Guide - <http://info.scratch.mit.edu/@api/deki/files/936/=ScratchGettingStartedv14.pdf>

Reference Guide - http://info.scratch.mit.edu/Support/Reference_Guide_1.4

Task 1.2 – For all students

Now that you have been introduced to Scratch, it's time to make a choice. Do you want to continue using Scratch, or move on to Python/Pygame?

Things to consider:

Scratch	Python/Pygame
Easy to learn	Takes a bit more effort to get to grips with
Visual drag 'n' drop code blocks	Textual programming language
Hard to "break"	Easy to "break" if your code syntax isn't correct
Quite limited functionality	Very flexible with extensive functionality
Projects can run in a web browser	Projects have to be run on a compatible OS
All that is required for this module	Can help prepare you more for further modules
2D only	2D and 3D support
You'll never use it again	Can be used to create future projects
Coursework is individually assessed	Coursework is group-based

Although you are being asked to make this decision in the first week, it can be changed. If you use Scratch but find it to be far too limited then you can try Python/Pygame, while if you use Python/Pygame but decide it's a bit too much to take on just now then you can continue using Scratch. However, you must talk to your tutor if you want to change which route you will be taking as timing and circumstances may make this infeasible (i.e. you need to make the final decision as early as possible so you have enough time to complete your coursework).

If you decide you would like to continue using Scratch, you may continue with Task 1.1 and getting used to the Scratch environment (then Homework Task 1.1); there is no need to inform your tutor of this decision, but may do so if you wish. The recommended text for Scratch is "Scratch Programming for Teens"

http://www.amazon.co.uk/Scratch-Programming-Teens-Jerry-Ford/dp/1598635360/ref=sr_1_1?ie=UTF8&s=books&qid=1253353554&sr=8-1.

If you decide to take on the Python/Pygame route then you should inform your tutor of this decision, and move on to Task 1.3.

Task 1.3 – For Python/Pygame students

If you are going to continue using Scratch, you don't need to complete this task.

Python/Pygame should already be installed on all the assigned University computers, so you can simply start IDLE (the Python GUI) by selecting the shortcut from the programs menu or on the desktop. If

Python/Pygame is not installed or you are using your own laptop:

If using a University computer that doesn't have Python/Pygame on it you will need to inform your tutor as you won't have installation privileges.

For your own computer:

1. First download Python (recommended 2.6.2) from <http://www.python.org/download/> for your Operating System.
2. Download Pygame (recommended 1.9.1) from <http://www.pygame.org/download.shtml> for your Operating System.
3. Install Python and Pygame. Instructions for doing so are on the Python (<http://www.python.org/>) and Pygame (<http://www.pygame.org/>) websites.
4. You should now be able to start IDLE (the Python GUI) using the installed shortcut.
5. In IDLE, type the command "import pygame" (without the "") and press return.
 - 5.1. If all is well, you should just be presented with the prompt (>>>).
 - 5.2. If Pygame cannot be found you will get an error like:

```
Traceback (most recent call last):
  File "<pyshell#0>", line 1, in <module>
    import pygame
ImportError: No module named pygame
```

- 5.3. If this happens, see your tutor or check online for a solution

No specific Python/Pygame tasks are being given to you this week. Instead, you should work through the Python tutorial (<http://docs.python.org/tutorial/>) and Pygame tutorials (<http://www.pygame.org/docs/>), conferring with your tutor on your progress. Remember, this is the more challenging route to take so don't expect to get to grips with the environment straight away.

The recommended text for Python/Pygame is "Hello World! Computer Programming for Kids and Other Beginners" http://www.amazon.co.uk/Hello-World-Computer-Programming-Beginners/dp/1933988495/ref=sr_1_1?ie=UTF8&s=books&qid=1253355947&sr=1-1

Homework Task 1.1 – For all students

Following the installation instructions provided above, set-up the Scratch and/or Python/Pygame environment(s) on your home computer or laptop. You should also make sure that any program(s) you have created at University work at home ok.

Homework Task 1.2 – For Python/Pygame students

If you intend to take the more challenging Python/Pygame route, you will need to convince your tutor that you are capable of doing so, and will need to form a small group with others doing the same. You should agree with your tutor what you will do to prove yourself, and should have the agreed task(s) completed for next week's practical session.