

# Product information

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# Installation Guide

Welcome to PyInvaders! This is a simple, step-by-step guide to aid you with installing your brand new copy of our product.

Before we address the rest of the steps in the installation guide, it is important to note that this product is optimized for OSX 10.14 Mojave, and may function differently on other operating systems and configurations. The following script installation will also not work for windows operating systems. If problems occur, please contact us through the github repository at [www.github.com/JiahLaBeouf/pyinvaders](https://www.github.com/JiahLaBeouf/pyinvaders) or at [jiahpang@gmail.com](mailto:jiahpang@gmail.com).

One requirement for this installation is to have access to an open network connection, as most corporate internet connections will block the downloads of the helper tools and the product itself.

The minimum hardware requirements would be an apple mac computer with osx, resolution 1024x768+, RAM 2-4GB+, processor speed 2.4GHz+, and any graphics card, however it should work on any computer running osx.

So, now that we have all our requirements out of the way, let's get started!

## Step 1: Download Python

Download and run the installer (.pkg) from this link:

<https://www.python.org/ftp/python/3.7.3/python-3.7.3-macosx10.9.pkg>

You'll have to watch for the warning when you begin to download it in chrome, it will ask you if you want to keep or discard the file. Select keep.

## Step 2: Install Python

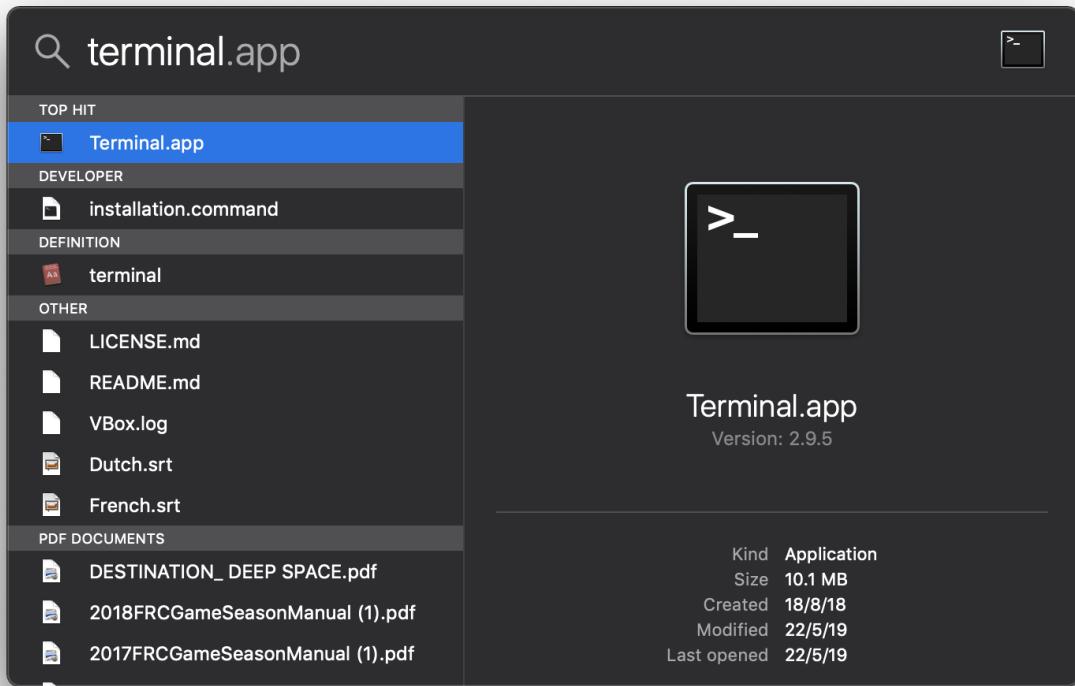
Double click on the package once it is downloaded. This window should pop up on your screen:



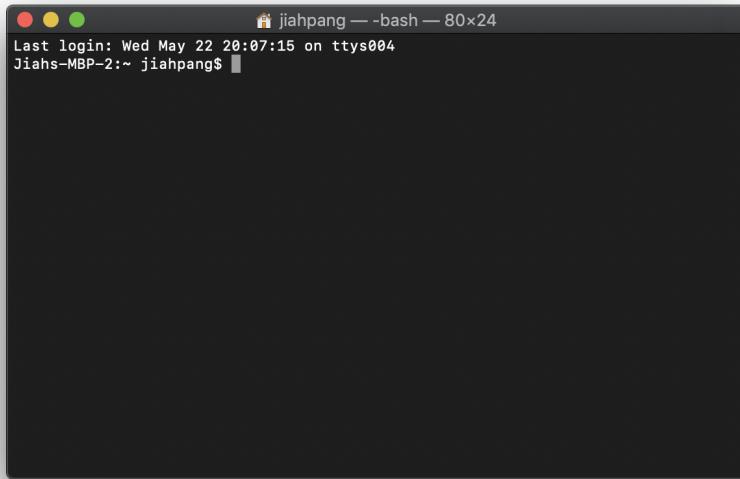
Press continue and follow the on-screen instructions until you receive the success message in the summary section. Congratulations, you now have python 3.7.3 installed on your computer!

### Step 3: Open terminal and install pygame

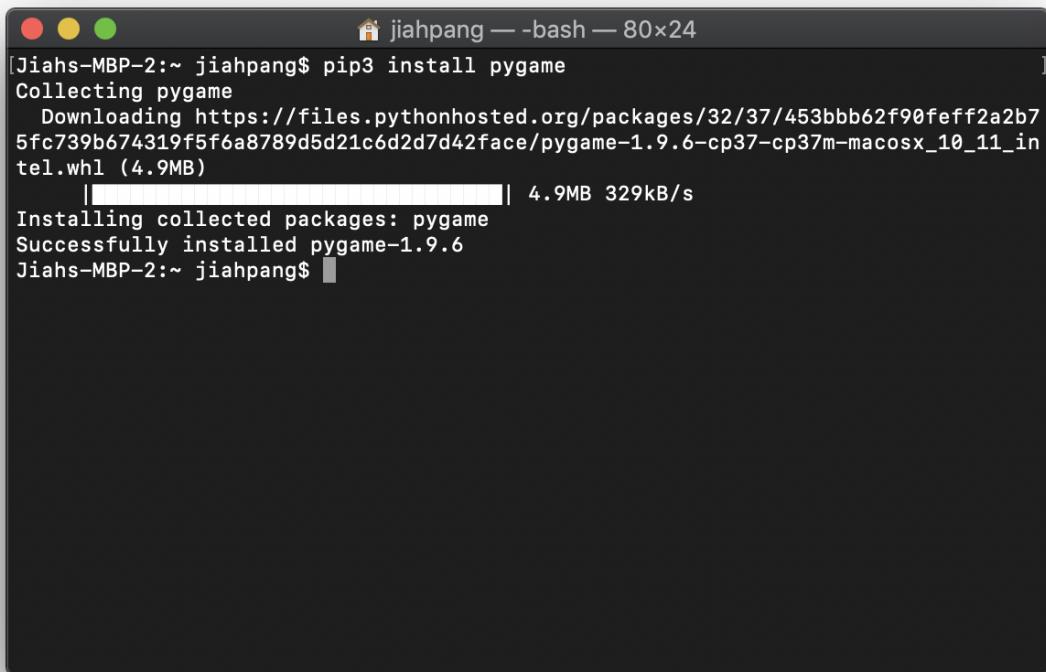
Next, click command + space on your keyboard to bring up spotlight search. Type “terminal” into the search bar. It should look like this:



Select the terminal app and hit enter. A window similar to this should appear:



Into the terminal window, type: `pip3 install pygame` and hit enter. It should look like this:



```
jiahpang — bash — 80x24
[Jiahs-MBP-2:~ jiahpang$ pip3 install pygame
Collecting pygame
  Downloading https://files.pythonhosted.org/packages/32/37/453bbb62f90feff2a2b7
  5fc739b674319f5f6a8789d5d21c6d2d7d42face/pygame-1.9.6-cp37-cp37m-macosx_10_11_in
  tel.whl (4.9MB)
    |████████████████████████████████| 4.9MB 329kB/s
Installing collected packages: pygame
Successfully installed pygame-1.9.6
Jiahs-MBP-2:~ jiahpang$ ]
```

## Step 4: Download the game files

Now, download the game files from this link:

<https://github.com/JiahLaBeouf/pyInvaders/archive/master.zip>

## Step 5: Move zip to documents folder

Open your downloads folder, locate “master.zip” and drag this file into your Documents folder.

## Step 6: Unzip the game files

Double click on “master.zip”. You should now have a folder named “pyInvaders-master” in your Documents folder.

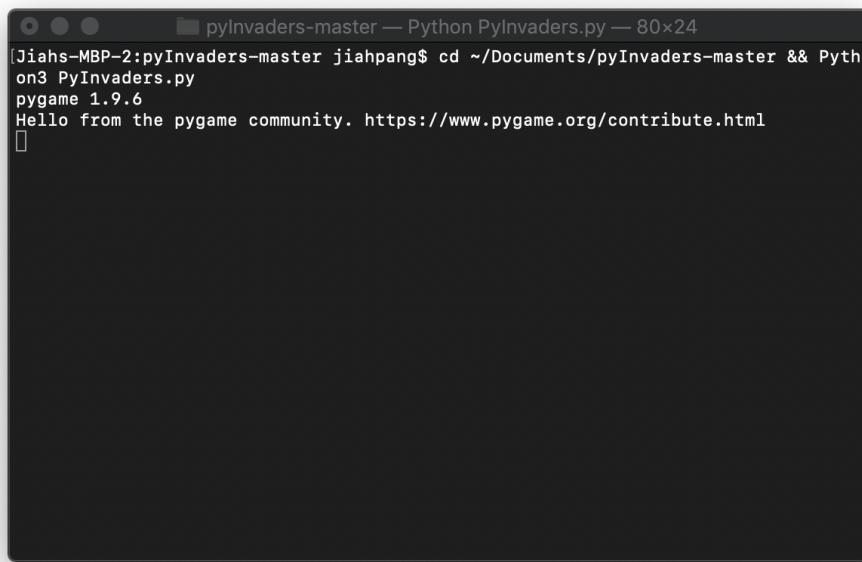
## Suggested Option 1: Using terminal

Step 7: Go back to your terminal window

In the terminal window, type or copy and paste this line:

```
cd ~/Documents/pyInvaders-master && Python3 PyInvaders.py
```

And press enter. When you hit enter, you'll see this message from python and pygame:



A screenshot of a Mac OS X terminal window titled "pyInvaders-master — Python PyInvaders.py — 80x24". The window contains the following text:

```
Jiahs-MBP-2:pyInvaders-master jiahpang$ cd ~/Documents/pyInvaders-master && Python3 PyInvaders.py
pygame 1.9.6
Hello from the pygame community. https://www.pygame.org/contribute.html
```

This should open up the game automatically, like this:



Congrats! You've successfully installed and opened PyInvaders! If you want to open the game at any time, just type `cd ~/Documents/pyInvaders-master && Python3 PyInvaders.py` into a terminal window at any time! (find how to open terminal in step 3)

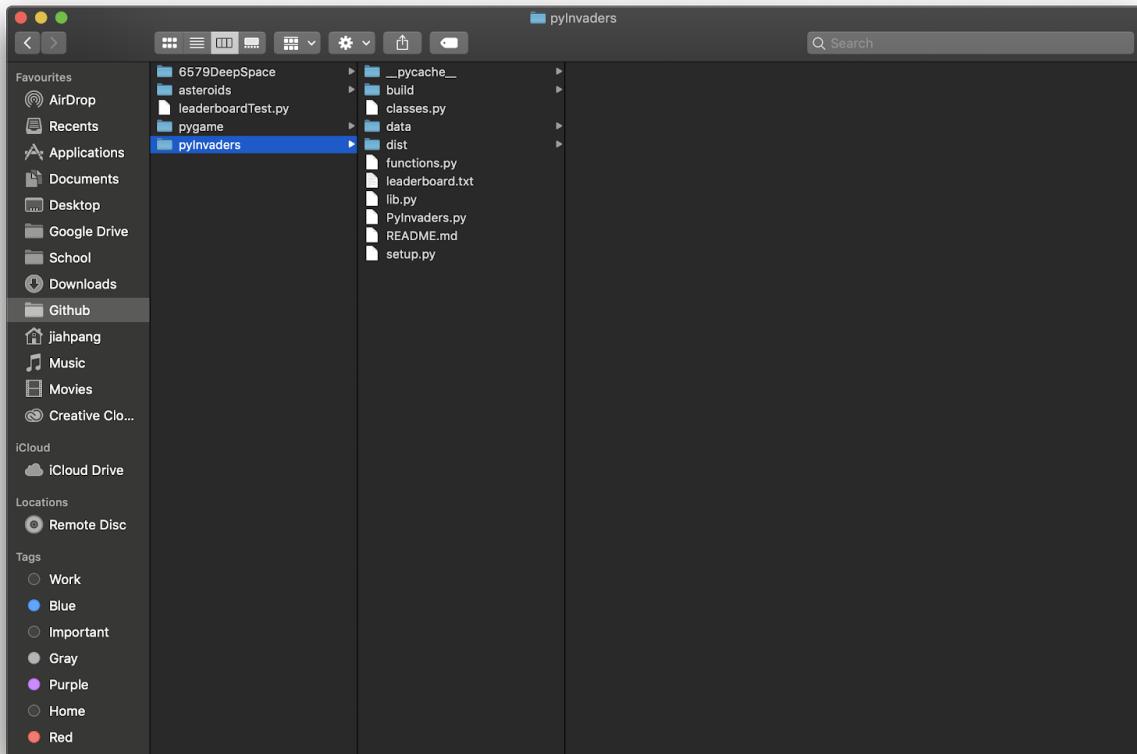
If you've successfully completed this step, there is no need to continue with option 2 unless you are interested. Thank you for installing PyInvaders, we can't wait to share our hard work with you! From the team at PyInvaders.

## Option 2: Using IDLE

If you're more into using application tools, this is the way to go.

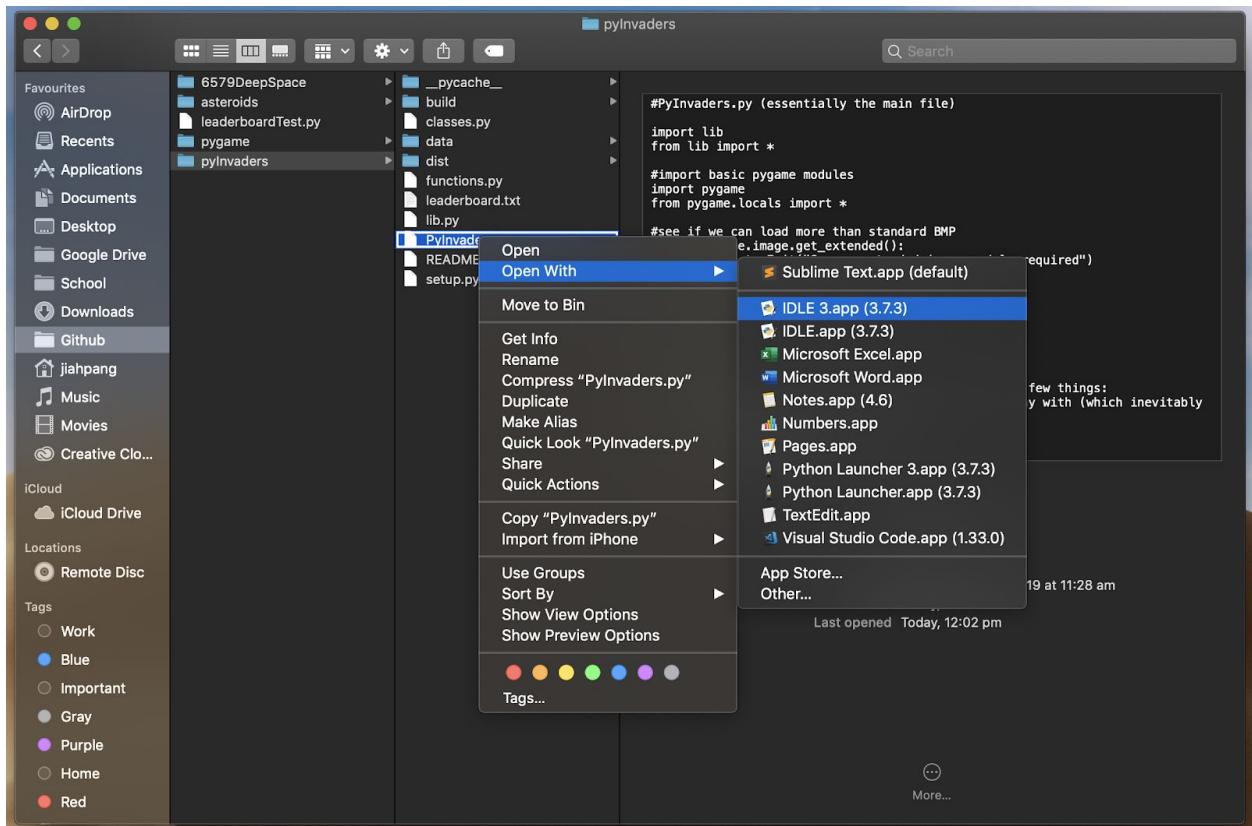
### Step 7: Open the folder with the game files

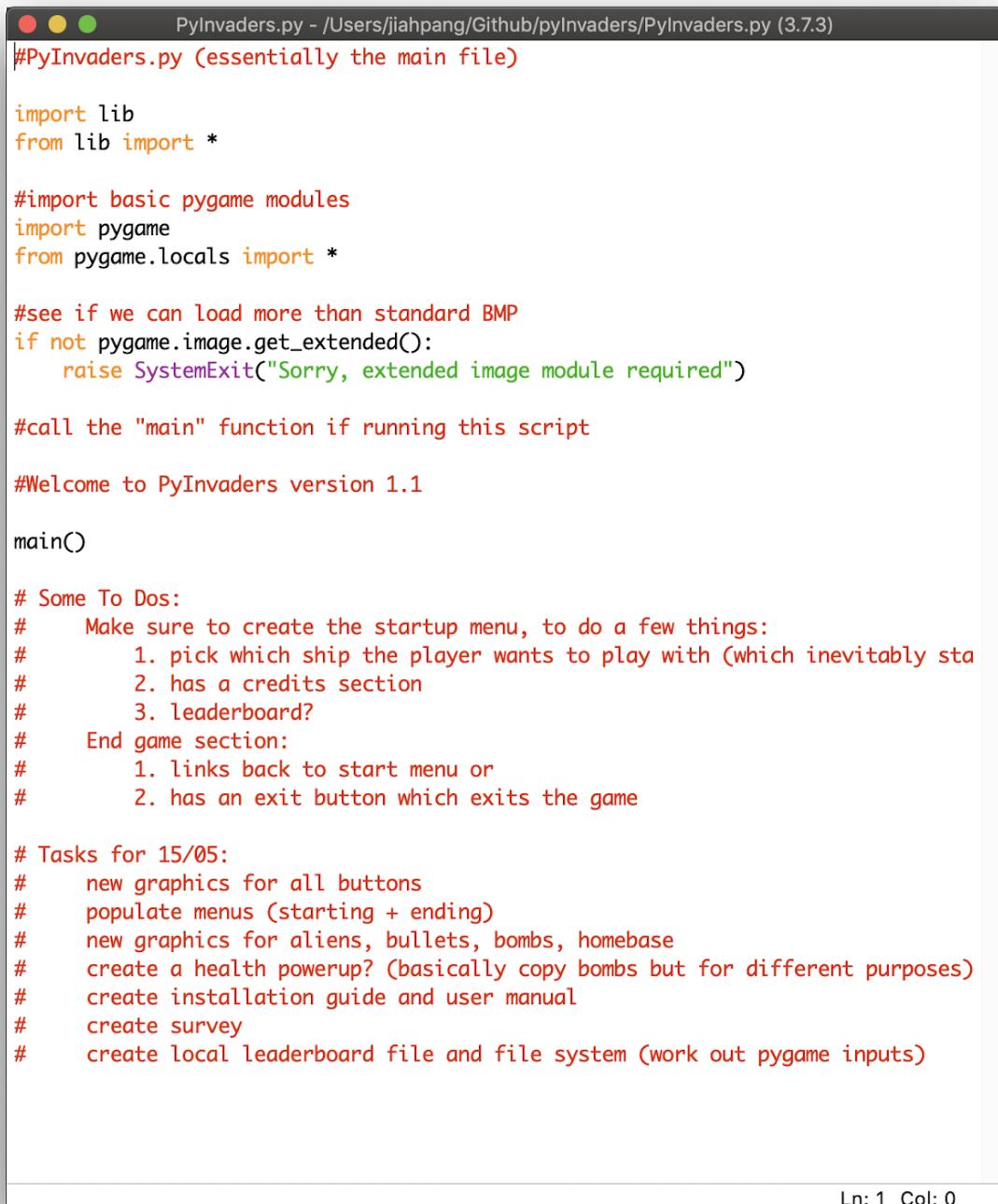
Open the folder and navigate to /Documents/pyInvaders-master/. It should look something like this:



## Step 8: Open the main file in IDLE

Right click on PyInvaders.py, go down to open with and select IDLE. This should open to look like this:





The screenshot shows a terminal window with the title "PyInvaders.py - /Users/jiahpang/Github/pyInvaders/PyInvaders.py (3.7.3)". The window contains the source code for the PyInvaders game. The code includes imports for lib and pygame, checks for extended BMP support, calls the main() function, and provides a section for 'Some To Dos' and 'Tasks for 15/05'. The code is color-coded with syntax highlighting.

```
#PyInvaders.py (essentially the main file)

import lib
from lib import *

#import basic pygame modules
import pygame
from pygame.locals import *

#see if we can load more than standard BMP
if not pygame.image.get_extended():
    raise SystemExit("Sorry, extended image module required")

#call the "main" function if running this script

#Welcome to PyInvaders version 1.1

main()

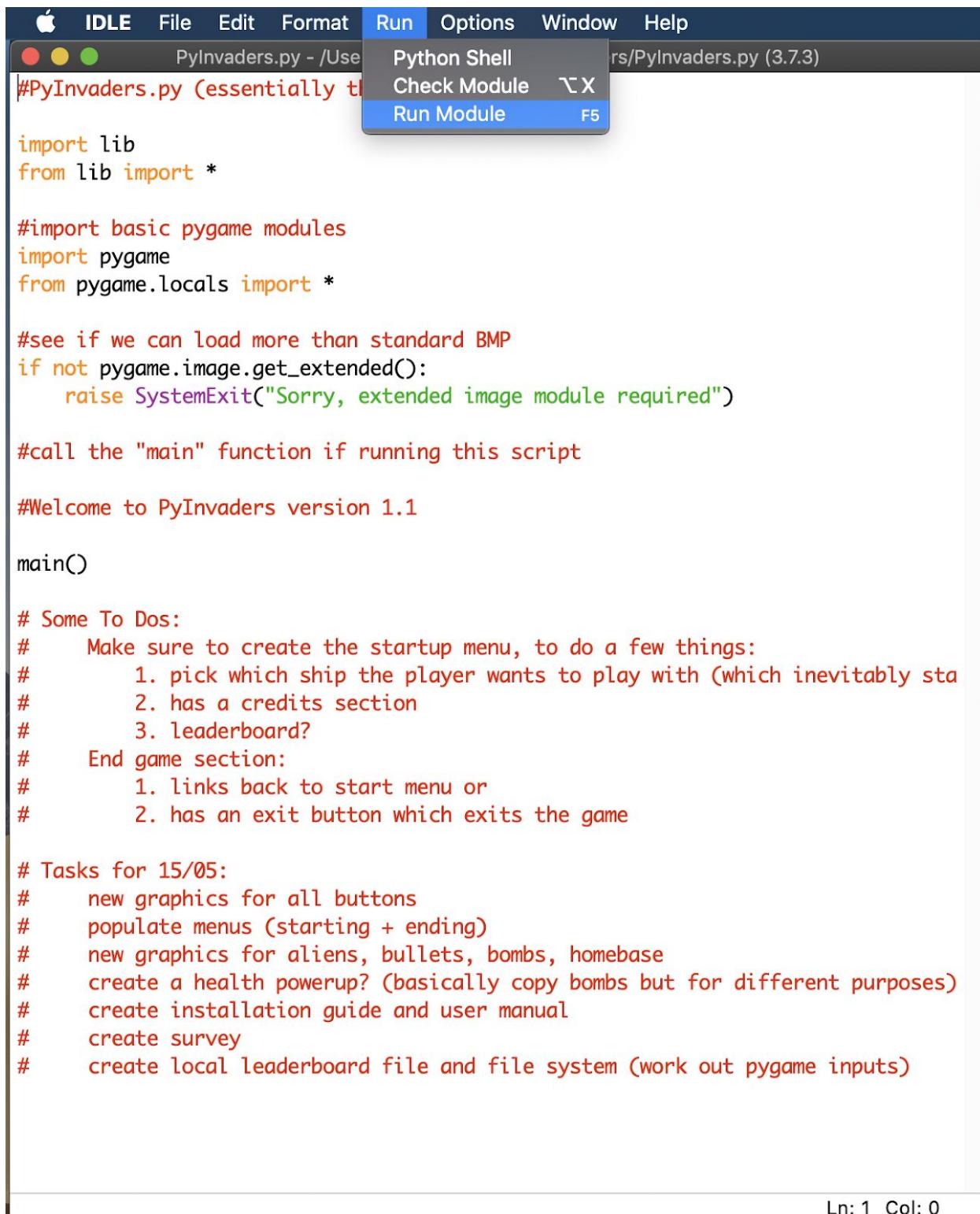
# Some To Dos:
#     Make sure to create the startup menu, to do a few things:
#         1. pick which ship the player wants to play with (which inevitably sta
#         2. has a credits section
#         3. leaderboard?
#     End game section:
#         1. links back to start menu or
#         2. has an exit button which exits the game

# Tasks for 15/05:
#     new graphics for all buttons
#     populate menus (starting + ending)
#     new graphics for aliens, bullets, bombs, homebase
#     create a health powerup? (basically copy bombs but for different purposes)
#     create installation guide and user manual
#     create survey
#     create local leaderboard file and file system (work out pygame inputs)

Ln: 1 Col: 0
```

## Step 9: Run the game file

To open the app, go to the “Run” tab at the top of the screen, click on it and then go down to the Run Module button (or hit F5 in the PyInvaders.py window)



The screenshot shows the Python IDLE interface. The menu bar at the top includes File, Edit, Format, Run, Options, Window, and Help. The Run menu is currently open, displaying three options: Python Shell, Check Module, and Run Module. The 'Run Module' option is highlighted with a blue background and white text. Below the menu, the code editor window displays the PyInvaders.py script. The script starts with importing the lib module and then pygame modules. It checks if the extended image module is available. If not, it raises a SystemExit exception with a message. The main function is defined, followed by a section for 'Some To Dos' and 'Tasks for 15/05'. The code editor has status bars at the bottom indicating 'Ln: 1 Col: 0'.

```
idle  IDLE  File  Edit  Format  Run  Options  Window  Help
PyInvaders.py - /Use
#PyInvaders.py (essentially t
import lib
from lib import *

#import basic pygame modules
import pygame
from pygame.locals import *

#see if we can load more than standard BMP
if not pygame.image.get_extended():
    raise SystemExit("Sorry, extended image module required")

#call the "main" function if running this script

#Welcome to PyInvaders version 1.1

main()

# Some To Dos:
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#     create a health powerup? (basically copy bombs but for different purposes)
#     create installation guide and user manual
#     create survey
#     create local leaderboard file and file system (work out pygame inputs)

Ln: 1 Col: 0
```

You've now successfully installed PyInvaders, and it's ready to play! To open the game again, simply repeat steps 7 to 9. Otherwise, check out Option 1 for an easier way to open the game

We hope you enjoy our product! From all the team at PyInvaders.

# User Manual

Welcome to the user manual! This section will be split into a few different sections to make it easier to refer to what you need, when you need it. See the table of contents to go to specific sections in the user manual.

## Game Mechanics

This game is about survival! The aim of the game is to last as long as you can, avoiding death by aliens. The aliens characters look like this:



And are capable of dropping bombs, which look like this:



The player's ship is capable of firing bullets to destroy aliens and bombs! This will be discussed further in relation to point scoring later on. **There is a maximum of four bullets on the screen at one time** to make the game more challenging. Furthermore, every second alien you destroy will result in an additional posthumous bomb being dropped, so make sure to be aware of that!

Player ships have three lives each. If your ship is hit by a bomb, you'll lose a life. Your remaining lives are present above the score, in the bottom left hand corner of the playing screen. If you lose all three lives, that means game over, and you'll enter the endgame menu, but we'll talk about that in a bit.

The other way to lose lives is to let aliens reach the player ship or the home base (left). If either of these things happen, it will also result in the game being over.

Lastly, if a bomb hits the home base, the game will be over.



If you are playing the game and feel as if it is time to stop, hit the 'k' key and it will "kill" the player, taking you to the endgame menu as well.

Otherwise, if none of the above conditions are met, the game will continue on until one of those conditions is satisfied.

The higher the score, the better you went! Each alien destroyed contributes one point to the total score tally, and for every bomb shot down, two points are awarded. Your total score will be displayed both during the game in the bottom left hand corner, as well as in the endgame menu.

There will also be health modules which add an extra life to your lives count. These will drop when you kill an alien whilst your score is a multiple of ten. Look out for extra lives! These items will have a white circle backing, it's just hard to see in this document.



## The Main Menu

The main menu is the first thing you will see when you open the application, and it will look like this:



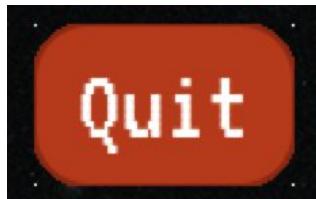
In the main menu, there are three different things the user can do.

1. Select a ship to continue to gameplay

If you select a ship in the main menu, you will be taken eventually to gameplay. More on this in the Gameplay section

## 2. Quit the application

As you can see, in the bottom-middle of the screen there is a red button with the word “quit” in contrasting colours to the background.



Clicking on this button will result in the application being closed. To re-open the application, simply access the “dist” folder which is located inside the “pyinvaders-master” folder which should be located within the documents section of your computer.

## 3. Go to the github repository with the game’s source code

Clicking on the title image within the main menu will open the github repository in a new tab in your default web browser. This is great for tracking all development changes and updates, as well as viewing source code and other things. If clicked, the main menu will still be on the game window, so make sure to quit the game if you are finished your current session.

If none of those things appeal to you, you can also view the top three scores from the users machine on this menu as well.

## Game Controls

As mentioned earlier, the basic game controls are outlined in the loading screen before each game



To fire bullets to destroy aliens and/or bullets, hit the spacebar. A maximum of four bullets can appear on the screen at one time to make the game a little bit more challenging, however this is outlined in the game mechanics section.

To move the ship left and right, use the left and right arrow keys on the bottom right of your keyboard.

### Ending the game early

If you wish to end the game early during gameplay but wish to see your final score, hit 'k' and you will be taken to the endgame menu. If you wish to exit the application completely during gameplay, hit the escape button. This does work with the touch bar on recent macbook products also.

## Gameplay

The three rocket ship icons in the middle of the screen allow the user to select which playing character they would like to control in actual gameplay. By selecting a playable character, the user will advance to the loading screen (below) which contains the basic control scheme, and then if clicked, the game itself will appear on screen. There are currently three playable characters, however this may change in future updates. Be sure to check out the github repository for all the latest updates and how to perform an update.

### Difficulty Selector

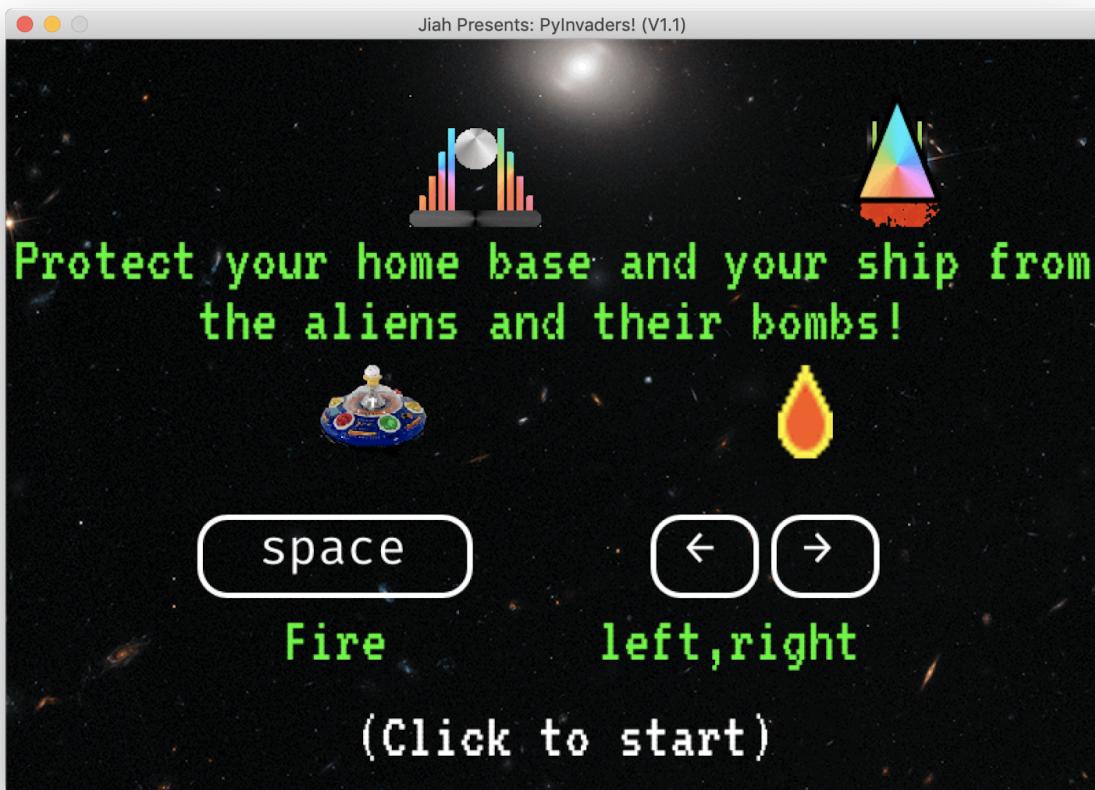
After selecting a ship, a difficulty selector will appear:



As you can guess, the easy mode is easier than the medium difficulty mode, which in turn is also easier than the hard mode. Once a difficulty preference is selected, you will advance to the controls loading screen.

## Controls/loading screen

The loading screen will appear once you select your difficulty.



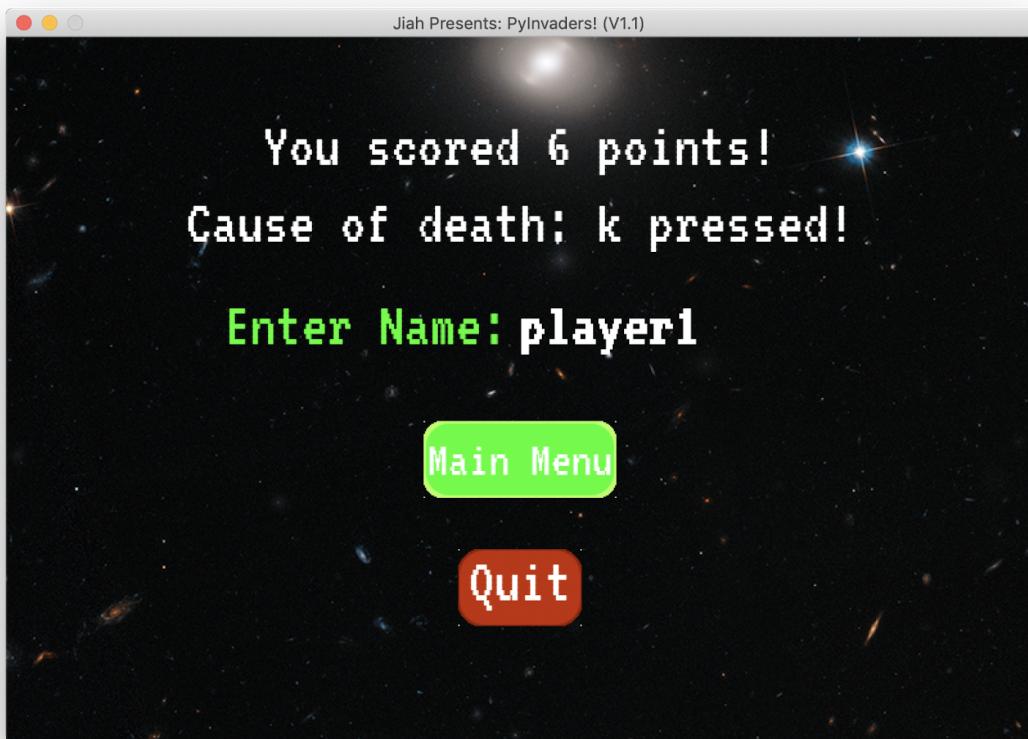
It's pretty self explanatory why this screen is here, however a more detailed analysis can be found in the Game Controls section. From here, if the user clicks on the screen, they will be taken to gameplay!



As you can see in the gameplay section, you can observe the time (top middle), remaining lives for the ship and the score (bottom left). There will also be your selected ship, controlled by the outline controls on the previous screen, aliens, bombs, your homebase and sometimes health too. From this, once dead you will advance to the endgame menu.

## The Endgame Menu

Looks a little like this and appears once you die in the game:



This menu displays the score you achieved, the cause of death to end the game, an option to return to the main menu, and a button to quit the game. Before that though, record your high score by entering your name and hitting enter before clicking a button. If your score is high enough, you will see it on the leaderboard in the main menu.

## Further questions

If you have any questions throughout your experience using this product, please contact the production team at [jiahpang@gmail.com](mailto:jiahpang@gmail.com). Enjoy the product!