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# HOMEBASE DEFENCE

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User Guide



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SAM ASSAREYMURIYIL, JAIMIL DALWADI, JAINIL MAJMUDAR, HARSH SHAH, VINAY REDDY

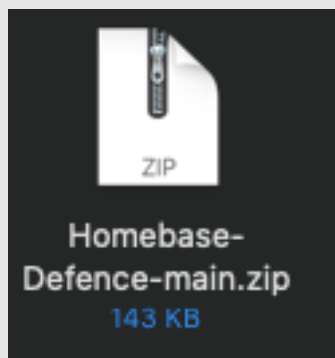
# User Guide

## Purpose:

Research shows that memory-based games boost critical thinking skills, sharpen problem-solving skills, improve visual perception, and improve spatial skills. Research also shows that many memory-games such as sudoku are successful. With this in mind, the game, Homebase Defence, was created. Homebase Defence is a memory-based arcade game. The goal of the game is to protect a base by destroying some meteors. The player must remake a pattern on a 3x3 grid at the bottom of the screen to destroy one meteor. After every round, the speed of the pattern's appearance increases to provide a challenge. The game was created as an entertaining way to train the brain. Like many arcade games, Homebase Defence is simple with its straightforward user control and addicting with its challenging and unique game design with how one destroys a meteor. The high score feature motivates the player to continuously play after losing the game, to beat the previous high score, and set a new one. Players can challenge friends to the game and see who gets the highest score. Being an addictive game, Homebase Defence continuously will help train the brain with its fast-paced patterns, which requires a keen visual perception to catch. Furthermore, the space theme on Homebase Defence provides some nice simple visuals while being played. To conclude, Homebase Defence is a space-themed memory arcade game whose goal is to destroy as many meteors as possible by matching a pattern on a 3x3 grid. The game is a fun way to sharpen mental skills.

## Installation Guide:

1. Download the zip file from <https://github.com/theDe-bugger/Homebase-Defence/archive/main.zip> by opening the provided link in your preferred web browser.



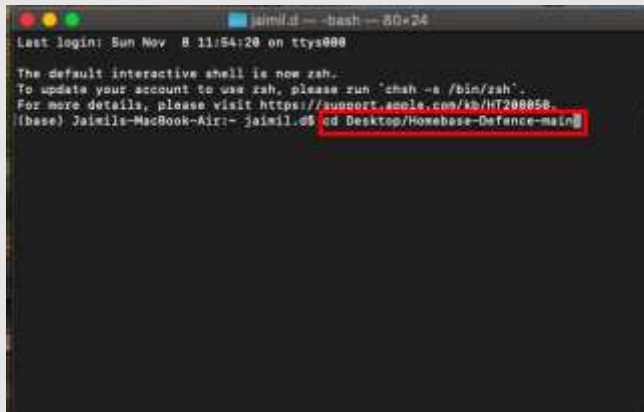
2. Move the zip file to your Desktop Folder or some place that is easy to access.



3. Unzip the folder using WinRAR or a built-in zip folder extractor.

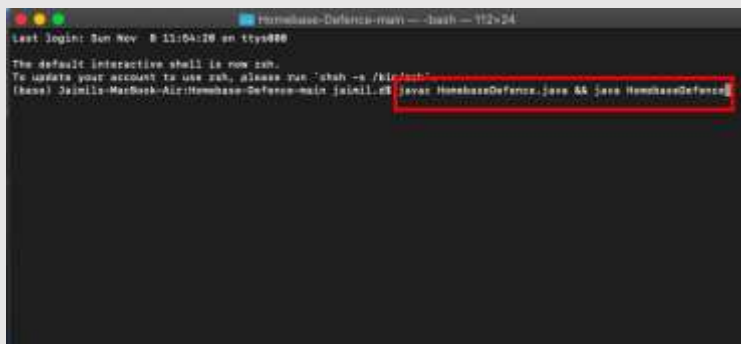


4. Open up terminal, command line, or your preferred/available command-line interface, and navigate to the folder using the corresponding commands.
  - a. Example: For MacOS, run the following command if it is on your desktop:  
`cd Desktop/Homebase-Defence-main`
  - b. Example: For Windows, run the following command if it is on your desktop:  
Same command works for Windows: `cd Desktop/Homebase-Defence-main`  
If this doesn't work, try:  
`C:\Users\%username%\Desktop\Homebase-Defence-main`



```
jaimil@ ~ - bash -- 80x24
Last login: Sun Nov  8 11:54:20 on ttys000
The default interactive shell is now zsh.
To update your account to use zsh, please run `chsh -s /bin/zsh`.
For more details, please visit https://support.apple.com/kb/HT208050
(jbase) Jaimilis-MacBook-Air:~ jaimil.cs$ cd Desktop/Homebase-Defence-main
```

5. Compile and run the Java application using the following command (should work on most command-line interfaces):  
`javac HomebaseDefence.java && java HomebaseDefence`  
Example on MacOS:



```
jaimil@ ~ - bash -- 112x24
Last login: Sun Nov  8 11:04:20 on ttys000
The default interactive shell is now zsh.
To update your account to use zsh, please run `chsh -s /bin/zsh`.
(jbase) Jaimilis-MacBook-Air:Homebase-Defence-main jaimil.cs$ javac HomebaseDefence.java && java HomebaseDefence
```

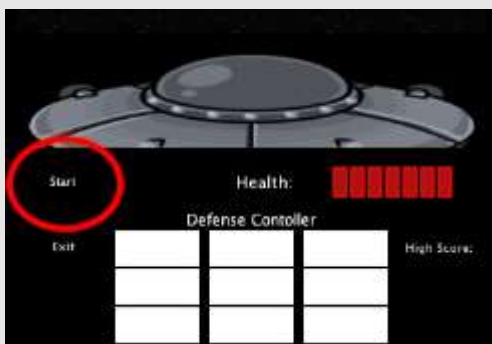


## Tutorial on How to Use the Program:

1. The goal of the game is to destroy as many asteroids as possible to defend your Homebase!
2. Click Play Game to open the game screen.



3. Press Start to begin the game.



4. A 3-step pattern will appear at the bottom of the screen.



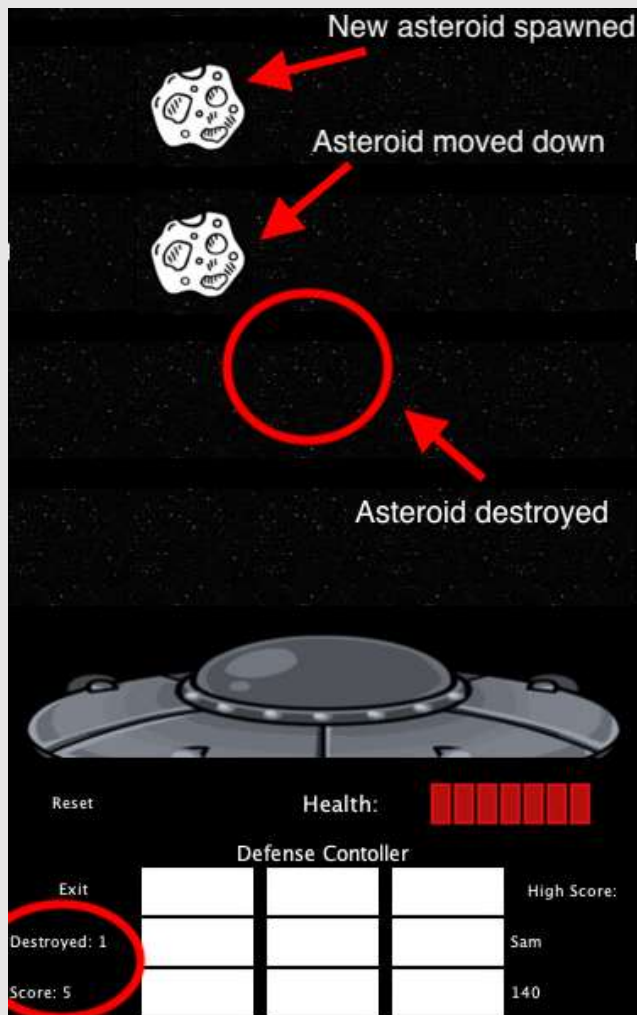
5. After the pattern ends, match the pattern by clicking on the respective buttons that the pattern was displayed on.



6. Each round consists of a 3-step, 4-step, 5-step, 6-step, and a 7-step pattern. After the 7-step pattern finishes, the next round will begin with the 3-step, but the speed of the pattern increases, so you have less time to memorize the pattern.

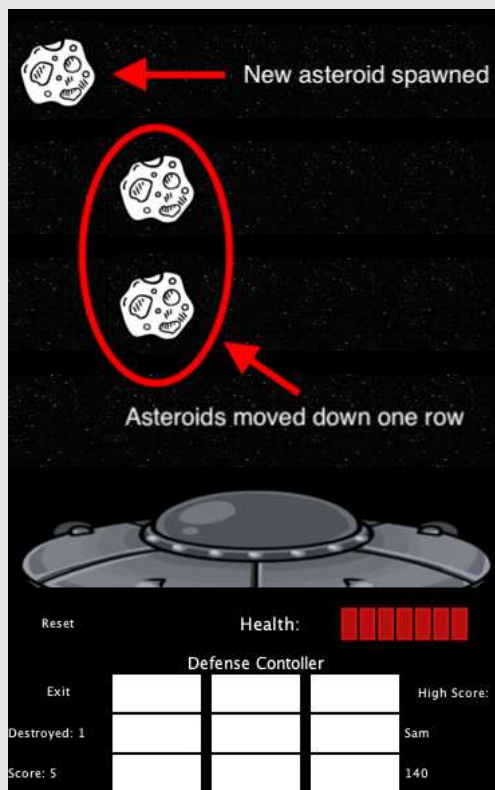


7. If you get the pattern correct, the closest asteroid to your Homebase will break, and points will be added to your total score. Each broken asteroid in the first round is worth 5 points. In the next round, each asteroid destroyed is worth 5 more points, and in the next round, it's worth 5 more points. The number of points you receive for a destroyed asteroid increases every round because each round you have less time to memorize the pattern, so it's harder. Each time you destroy an asteroid, a new one will spawn at the top.

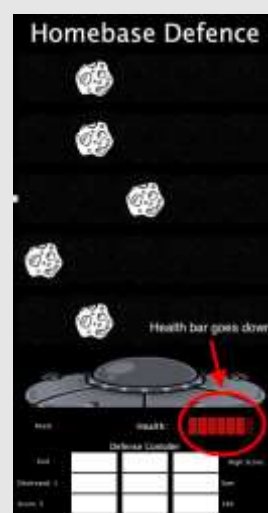




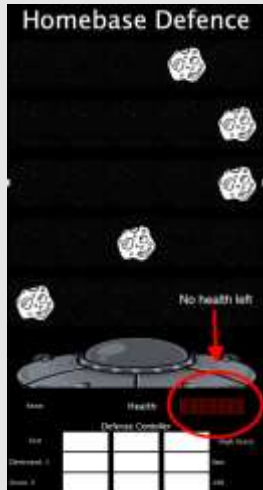
8. If you fail to match the pattern, asteroids will move one row down and one step closer to your Homebase, and another asteroid will spawn at the top.



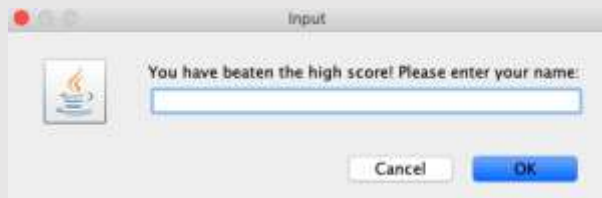
9. Each time an asteroid hits your Homebase, you will lose one bar of health. You have 7 bars of health to maintain and stay alive.



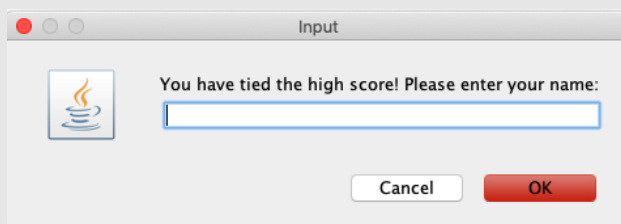
10. If you have no health bars remaining, the game is over. An end screen will appear with your total score in the game and will let you know whether or not you have beaten the high score. If you didn't beat the high score, you will have the option to play again or exit the game.



11. If you have beaten the high score, the game will ask for your name to save in a database with the high scores. After you have done that, the end screen will appear with your score and you will have the option to play again or exit the game.



12. If you have tied the high score, the game will ask for your name to save in a database with the high scores. After you have done that, the end screen will appear with your score and you will have the option to play again or exit the game.



## **Special and Key Features:**

### **1. Asteroids:**

In this program/game, an asteroids component has been added. The way this asteroid component works relates directly to the Simon Says component. If the user playing the game gets the Simon Says pattern correct, the asteroid closest to the spaceship will break, but if the user gets the Simon Says pattern incorrect, then another asteroid will spawn at the top, and all the other asteroids will come one step closer towards the spaceship.

### **2. Health:**

The spaceship in the program/game has a health bar of 7. So, 7 asteroids can hit the spaceship, but after 7 hits, the spaceship then gets destroyed and the game is over.

### **3. High Score:**

The high score feature has also been added to this program/game which means that the game will never forget the high score that has been made. The goal for the users that play the game is to beat the high score that has been made and make them the highest scorer for the game.

### **4. Score:**

There are unlimited rounds in this game, but each round, the Simon Says pattern starts with a pattern of 3 blocks and it goes all the way up to 7 blocks pattern. First-round, the points that are awarded for getting the Simon Says pattern correct and breaking an asteroid is 5 points. In the second round, the points increase by 5, so for the second round, 10 points are awarded for each correct pattern. In the third round, 5 more points have been added, so 15 points are awarded for each correct pattern in the third round and so on.

### **5. Simon Says:**

The Simon Says component is a special feature just like the asteroid's component, and they both work together. The Simon Says component is like a memorization game, where the user playing the game will have to memorize patterns. Each round there are patterns from 3 block patterns to 7 block patterns. So, it starts with 3 block patterns, then 4 and so on up to 7. After the first round is complete, another round of 3 – 7 block patterns will start. But this time for the second round, the speed will get faster, and there will be less time for the user to memorize the pattern. For the third round, the speed will even get faster, and the user will have much less time to memorize the pattern, and it keeps going on for the rest of the rounds.