There are many features that I have implemented in game. These include: inheritance, encapsulation, GUI events, method overriding etc. This document will cover some of the features that I have used in my game as well as key coding challenges I have come across.

One of the most important features that I have implemented in my game is inheritance. This is used to extend an existing class to make a new class. This means that the new class will inherit the methods and variables from the existing class. For example, GameLevel extends World. This means that World is the superclass of GameLevel. Another feature is encapsulation. This is an idea of wrapping the data (variables) as well as the code that is acting on the data (methods) together as one unit. It has been used in the process of constructing the GameLevel.

Furthermore, GUI events have been implemented. These are graphical user interfaces. This generates events when the user performs something. One of the interfaces used is KeyListener. It is used in the game for character control when the user presses a specific key. Another interface is ActionListener. This has been used to spawn objects using a timer. This is a very important feature as if there are no interfaces the user will not be able to play the game. CollisionListener is also another interface that is used to detect collision between bodies and produce a response.

Other features such as background music and background images have been used. It changes in each level; sound effects are also present during collisions between the player and points or enemies. In level 1, bombs spawn approximately every 5 seconds and a timer was used in order for this to happen. This increases the difficulty of the game.

There were many key coding challenges that I have come across during the process of making this game. One of them includes trying to make characters change direction as soon as it reaches a specific coordinate. This was especially difficult when I wanted to make the spaceship in level 3 randomly change direction. Overall, the game has exceeded my expectations and I have gained better understanding in Java.

Link to the gameplay: <https://youtu.be/8tKVnwnbQ-w>