# Overview

This document will cover the main techniques and methodologies, in the process of testing Earth Shard.

# Techniques

## Unit Testing

Unit testing is a technique used to test individual components of a project. For example, in earth shard this will be used to test the individual components attached to objects in the unity file such as scripts or character controllers. It will focus on the functionality of those single components to make sure they are working correctly.

## Integration Testing

Integration testing is a technique used to test the interaction between multiple components. For example, in earth shard this will be testing the interaction between components on an object to make sure both components work together and do not cause any overlap that could result in errors. It also covers the interactions between objects such as a projectiles and enemies.

## System Testing

System testing is a technique that tests the overall system. In earth shard this will make sure all components within a finished build are working without a major error that could cause soft locks or crashes. This technique also covers performance too to make sure no major performance issues are occurring.

## Ad-hoc Testing

Ad-hoc testing is an informal testing technique used by most developers. It is testing that is done based on intuition and knowledge of the developer. In earth shard this has and will be used throughout its development. Ad-hoc testing can be good for fixing errors before they occur naturally but being an informal technique, many errors could be overlooked that would have been found through a formal testing technique.

# Methodologies

## White box Testing

Whitebox testing is a methodology used by developers to internally test their software and will use the variety of formal and some informal testing [techniques](#_Techniques). White box testing requires the developers to understand the internal framework of the program. For example, in earth shard myself being the main developer will be doing white box testing using the mentioned techniques as I understand how earth shard should function.

## Black box Testing

Black box testing is a testing technique used by third party testers as they have no understanding of the internal workings of the program. In earth shard this will take the form of [playtesting](#_Playtesting).

### Playtesting

This methodology involves giving a range of players builds of a game and having them play through them to record data and gather feedback either through verbal communication or as I will be using, a google form. Playtesting is crucial in ensuring the product is fun and engaging. It is also crucial in making sure that there are no major bugs as players tend play games differently than intended or how the developers have been playing.

# resources