**Design choices and reasons for tests**

For the unit tests, we used JUnit 4 framework

We chose to write at least 3 tests for each module; a normal data test, and extreme data test and erroneous data test. If they all pass, then the module is strong and works properly.

**File Helper tests**

Normal tests

Extreme tests

Erroneous tests

**Black bag tests**

Before each test, we set the pebbles in the bag to be the pebbles in the test\_range file. This is so that we know exactly what pebbles are in the bag before each test

We also use a mock object for the random object so we can predict what random numbers will be produced and work out what outputs from certain functions will be produced with those predictable random numbers.

Normal tests

Take Random Pebble test:

For this method, we just ran the module multiple times with an assertEquals against what the expected result would be

Replenish pebbles test:

For this method, we had to fill a white bag, record the state of both the white bag and black bag before and after calling the replenish pebbles method. If the initial white bag matched final black bag. Then the black bag has been replenished correctly, but we need to check also white bag has also been emptied

Get total number of pebbles test:

For this method, we provide a black bag with a known number of pebbles, call the getTotalNumPebbles() method and check that it is the expected number.

Extreme tests

Take a random pebble from a black bag with 1 pebble

Take a random pebble from an empty black bag, but it will be replenished by a white bag

Replenish pebbles with 1 item in the white bag

Erroneous tests

Take a random pebble from an empty black bag, but the associated white bag is also empty

Replenish pebbles when the white bag is empty

**White bag tests**

Normal tests

Add a pebble to an empty white bag

Add a pebble to a white bag which already has pebbles

**Player tests**

Normal tests

Draw a pebble from a black bag

Discard a pebble from the players hand to a white bag

Check that the total weight of pebbles matches 100 with pebbles that sum to 100

Check that the total weight of pebbles does not match 100 with pebbles that do not sum to 100

Extreme tests

Draw a pebble from a black bag which has only 1 pebble left

Draw a pebble from an empty black bag but a filled white bag

Discard a pebble from the players hand to an empty white bag

Check that the total weight of pebbles does not match 100 with pebbles that do not sum to 101

Check that the total weight of pebbles does not match 100 with pebbles that do not sum to 99

Erroneous tests

Draw a pebble from an empty black bag and an empty white bag