Unity Assertions Cheat Sheet Suitable for Printing and Possibly Framing

Basic Fail and Ignore

```
TEST_FAIL()
TEST_IGNORE()
```

Boolean

```
TEST_ASSERT (condition)
TEST_ASSERT_TRUE (condition)
TEST_ASSERT_UNLESS (condition)
TEST_ASSERT_FALSE (condition)
TEST_ASSERT_NULL (pointer)
TEST_ASSERT_NOT_NULL (pointer)
```

Signed and Unsigned Integers (of all sizes)

```
TEST_ASSERT_EQUAL_INT (exp, act)
TEST_ASSERT_EQUAL_INT8 (exp, act)
TEST_ASSERT_EQUAL_INT16 (exp, act)
TEST_ASSERT_EQUAL_INT32 (exp, act)
TEST_ASSERT_EQUAL_INT64 (exp, act)
TEST_ASSERT_EQUAL (exp, act)
TEST_ASSERT_NOT_EQUAL (exp, act)
TEST_ASSERT_EQUAL_UINT (exp, act)
TEST_ASSERT_EQUAL_UINT8 (exp, act)
TEST_ASSERT_EQUAL_UINT16 (exp, act)
TEST_ASSERT_EQUAL_UINT32 (exp, act)
TEST_ASSERT_EQUAL_UINT64 (exp, act)
```

Unsigned Integers (of all sizes) in Hexadecimal

```
TEST_ASSERT_EQUAL_HEX (exp, act)
TEST_ASSERT_EQUAL_HEX8 (exp, act)
TEST_ASSERT_EQUAL_HEX16 (exp, act)
TEST_ASSERT_EQUAL_HEX32 (exp, act)
TEST_ASSERT_EQUAL_HEX64 (exp, act)
```

Masked and Bit-level Comparisons

```
TEST_ASSERT_BITS (mask, exp, act)
TEST_ASSERT_BITS_HIGH (mask, act)
TEST_ASSERT_BITS_LOW (mask, act)
TEST_ASSERT_BIT_HIGH (bit, act)
TEST_ASSERT_BIT_LOW (bit, act)
```

Integer Ranges (of all sizes)

```
TEST_ASSERT_INT_WITHIN (delta, exp, act)
TEST_ASSERT_INT8_WITHIN (delta, exp, act)
TEST_ASSERT_INT16_WITHIN (delta, exp, act)
TEST_ASSERT_INT32_WITHIN (delta, exp, act)
TEST_ASSERT_INT64_WITHIN (delta, exp, act)
TEST_ASSERT_UINT_WITHIN (delta, exp, act)
TEST_ASSERT_UINT8_WITHIN (delta, exp, act)
TEST_ASSERT_UINT16_WITHIN (delta, exp, act)
TEST_ASSERT_UINT32_WITHIN (delta, exp, act)
TEST_ASSERT_UINT64_WITHIN (delta, exp, act)
TEST_ASSERT_HEX_WITHIN (delta, exp, act)
TEST_ASSERT_HEX8_WITHIN (delta, exp, act)
TEST_ASSERT_HEX16_WITHIN (delta, exp, act)
TEST_ASSERT_HEX32_WITHIN (delta, exp, act)
TEST_ASSERT_HEX64_WITHIN (delta, exp, act)
```

Structs and Strings

```
TEST_ASSERT_EQUAL_PTR (exp, act)
TEST_ASSERT_EQUAL_STRING (exp, act)
TEST_ASSERT_EQUAL_MEMORY (exp, act, len)
```

Arrays

```
TEST_ASSERT_EQUAL_INT_ARRAY (exp, act, elem)
TEST_ASSERT_EQUAL_INT8_ARRAY (exp, act, elem)
TEST_ASSERT_EQUAL_INT16_ARRAY (exp, act, elem)
TEST_ASSERT_EQUAL_INT32_ARRAY (exp, act, elem)
TEST_ASSERT_EQUAL_INT64_ARRAY (exp, act, elem)
TEST_ASSERT_EQUAL_UINT_ARRAY (exp, act, elem)
TEST_ASSERT_EQUAL_UINT8_ARRAY (exp, act, elem)
TEST_ASSERT_EQUAL_UINT16_ARRAY (exp, act, elem)
TEST_ASSERT_EQUAL_UINT32_ARRAY (exp, act, elem)
TEST_ASSERT_EQUAL_UINT64_ARRAY (exp, act, elem)
TEST_ASSERT_EQUAL_HEX_ARRAY (exp, act, elem)
TEST_ASSERT_EQUAL_HEX8_ARRAY (exp, act, elem)
TEST_ASSERT_EQUAL_HEX16_ARRAY (exp, act, elem)
TEST_ASSERT_EQUAL_HEX32_ARRAY (exp, act, elem)
TEST_ASSERT_EQUAL_HEX64_ARRAY (exp, act, elem)
TEST_ASSERT_EQUAL_PTR_ARRAY (exp, act, elem)
TEST_ASSERT_EQUAL_STRING_ARRAY (exp, act, elem)
TEST_ASSERT_EQUAL_MEMORY_ARRAY (exp, act, len,
elem)
```

Each Equal (Comparing Arrays to a Single Val)

(these follow the pattern of the arrays, but are named like this)

```
TEST_ASSERT_EACH_EQUAL_INT8 (exp, act, elem)
```

Floating Point (If Enabled)

```
TEST_ASSERT_FLOAT_WITHIN (delta, exp, act)
TEST_ASSERT_EQUAL_FLOAT (exp, act)
TEST_ASSERT_EQUAL_FLOAT_ARRAY (exp, act, elem)
TEST_ASSERT_FLOAT_IS_INF (act)
TEST_ASSERT_FLOAT_IS_NEG_INF (act)
TEST_ASSERT_FLOAT_IS_NAN (act)
TEST_ASSERT_FLOAT_IS_DETERMINATE (act)
TEST_ASSERT_FLOAT_IS_NOT_INF (act)
TEST_ASSERT_FLOAT_IS_NOT_NEG_INF (act)
TEST_ASSERT_FLOAT_IS_NOT_NAN (act)
TEST_ASSERT_FLOAT_IS_NOT_DETERMINATE (act)
```

Double (If Enabled)

```
TEST_ASSERT_DOUBLE_WITHIN (delta, exp, act)
TEST_ASSERT_EQUAL_DOUBLE (exp, act)
TEST_ASSERT_EQUAL_DOUBLE_ARRAY (exp, act, elem)
TEST_ASSERT_DOUBLE_IS_INF (act)
TEST_ASSERT_DOUBLE_IS_NEG_INF (act)
TEST_ASSERT_DOUBLE_IS_NAN (act)
TEST_ASSERT_DOUBLE_IS_DETERMINATE (act)
TEST_ASSERT_DOUBLE_IS_NOT_INF (act)
TEST_ASSERT_DOUBLE_IS_NOT_NEG_INF (act)
TEST_ASSERT_DOUBLE_IS_NOT_NAN (act)
TEST_ASSERT_DOUBLE_IS_NOT_DETERMINATE (act)
```

Unity Project - ThrowTheSwitch.org

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Key

- *Condition* – The condition to logically verify, e.g. (42 == AnswerToLife).
- *Pointer* – A pointer to check for NULL-ness.
- *Exp* – Expected value.
- *Act* – Actual value.
- *Delta* – Allowed range around the expected value. A failure results if act is less than (exp-delta) or more than (exp+delta).
- *Elem* – Number of elements to check.
- *Len* – The length of the memory block in bytes.

Notes

Assertions with Message Parameter

Add _MESSAGE to the names of any assertion listed above for the message variant (and include your own string as the final parameter in the assertion).

Example:

Listed below
`TEST_ASSERT_BITS_HIGH (mask, act)`

Unlisted message variant
`TEST_ASSERT_BITS_HIGH_MESSAGE (mask, act, message)`

Floating Point Assertions

Float and Double support can be individually enabled or disabled according to your platform's support of floating point math. See Unity's configuration documentation.

Assertions for arrays of floating point values are grouped with floating point assertions rather than listed among the Array assertions.