

# QLang: Qubit Language

## (Reference Manual)

Christopher Campbell

Clément Canonne

Sankalpa Khadka

Winnie Narang

Jonathan Wong

October 13, 2014

# Contents

<b>1</b>	<b>Introduction</b>	<b>2</b>
<b>2</b>	<b>Lexical conventions</b>	<b>3</b>
2.1	Character set . . . . .	3
2.2	Comments . . . . .	3
2.3	Identifier (names) . . . . .	3
<b>3</b>	<b>Syntax notation</b>	<b>4</b>
<b>4</b>	<b>What's in a Name?</b>	<b>5</b>
<b>5</b>	<b>Objects and lvalues</b>	<b>6</b>
<b>6</b>	<b>Conversions</b>	<b>7</b>
<b>7</b>	<b>Expressions</b>	<b>8</b>
<b>8</b>	<b>Declarations</b>	<b>9</b>
<b>9</b>	<b>Statements</b>	<b>10</b>
<b>10</b>	<b>External definitions</b>	<b>11</b>
<b>11</b>	<b>Scope rules</b>	<b>12</b>
<b>12</b>	<b>Compiler control lines</b>	<b>13</b>

## Chapter 1

# Introduction

## Chapter 2

# Lexical conventions

There are five kinds of tokens: identifiers, keywords, constants, expression operators, and other separators. There are six kinds of tokens: identifiers, keywords, constants, strings, expression operators, and other separators. If the input stream has been parsed into tokens up to a given character, the next token is taken to include the longest string of characters which could possibly constitute a token.

Rephrase:  
that's pla-  
giarism

### 2.1 Character set

QLang supports a subset of ASCII; that is, allowed characters are `a-zA-Z0-9@#,-_ ; ( ) [ ] { } < > = + / | *`, as well as tabulations `\t`, spaces, and line returns `\n` and `\r`.

### 2.2 Comments

Comments start with a `#` sign, which then extends until the next carriage return. Multiline comments are not supported.

### 2.3 Identifier (names)

An identifier is an arbitrarily long sequence of alphabetic and numeric characters, where `_` is included as “alphabetic”. It must start with a lowercase or uppercase letter, i.e. one of `a-zA-Z`.

The language is case-sensitive: `hullabaloo` and `hullABaLoo` are considered as different.

## Chapter 3

# Syntax notation

## Chapter 4

# What's in a Name?

## Chapter 5

# Objects and lvalues

## Chapter 6

# Conversions



## Chapter 7

# Expressions

## Chapter 8

# Declarations

## Chapter 9

# Statements

## Chapter 10

# External definitions

## Chapter 11

# Scope rules

## Chapter 12

# Compiler control lines

...