This Note covers chapter 1-8 of the book.

1. **Type** - Lua has 8 types, use type() to get the type of a value.

nil, boolean, number, string, userdata, function, thread, table

> type("Good job!") --> string

> type(10.478) --> number

> type(print) --> function

> type(type) --> thread

> type({}) --> table

2. **Number** - Lua 5.3 supports 64-bit integer and double-precision float.

3. **String** - #s to get the length of a string.

4. **Table** - the only data structure in Lua. Tables are called by reference only.

days = {"Sun", "Mon", "Tue", "Wed", "Thur", "Fri", "Sat"}

days[2] = "Mon"

days.desc = "this table stores days of the week"

days.desc = nil -- delete this key

names = days -- now names refer to this table

5. **Function** - Lua functions can return multiple values.

```lua
1  function sumAll(a)
2      local sum = 0
3      for i=1, #a do
4          sum = sum + a[i]
5      end
6      return sum, #a
7  end
```

6. **Control structures** - ::room1:: is a label

```lua
1  goto room1       -- initial room
2  ::room1:: do
3      local move = io.read()
4      if move == "south" then goto room3
5      elseif move == "east" then goto room2
6      else
7          print("invalid move")
8          goto room1       -- stay in the same room
9      end
10 end
11
```

```lua
::room2:: do
    local move = io.read()
    if move == "south" then goto room4
    elseif move == "west" then goto room1
    else
        print("invalid move")
        goto room2
    end
end

::room3:: do
    local move = io.read()
    if move == "north" then goto room1
    elseif move == "east" then goto room4
    else
        print("invalid move")
        goto room3
    end
end

::room4:: do
    print("Congratulations, you won!")
end
```