

--: {core: []: 😊} <- **Core Functions Library** -> muse/docs/lib/core.md

--😞 core: *Strings, session state, cloning, error handling, reporting, UI, math, iterators, lowest level turtle support.* -> core

--:# **Managing state: clone table, generate closure for session (non-persistent) state, cache loads**

--: core.clone(source: {}|any) -> *Deep copy source table or return source if not table.* -> {}|any

--:> closing: *Returns value or sets it and optional table entry to non nil value.* -> (value: any): value: any

--: core.state(table: {}?, key: ":"?) -> *Returns closure over closure variable* -> closing

--:# **Table Utilities: merging tables and finding common items in a pair of tables**

--: core.merge(...: {}) -> *Merge any number of flat tables into one, allowing repeats.* -> {}

--: core.match(tableA: any[], tableB: any[]) -> *Find first matching item in pair of item tables.* -> nil | any

--:# **Making Strings: both instantiable strings and simple single quoted strings for printing**

--: core.serialize(input: any) -> *Executable string to instantiate input.* -> "return "..":" &!

--: core.string(...: any) -> *Makes string from any inputs, simplifies single entry tables.* -> ":"

--: core.xyzf(:xyzf:) -> *Returns specially formatted string for xyzf.* -> ":"

--:> xyzf: *Position and facing as table* -> {x: #:, y: #:, z: #:, facing: ":"}

--:# **Handling errors and reporting operations**

--: core.pass(ok: ^, ...: any) -> *Pass input but report string if not ok.* -> ok: true|false, result: ...|":", any?

--: core.where() -> *GPS location if available.* -> x: #:?, y: #:?, z: #:?

--:# **Logging and Quit Control Globals**

--: quit message -> Set quit flag to message; next core.status throws error to abort operations.

--:> core.log: *Closure variable* -> {level: closing, file: closing, handle: closing}

--: core.status(level: #:, ...: any) -> *If level less than (elimination) threshold, then report rest as string.* -> nil

--:+ *If player, status report is printed and potentially logged. Otherwise sent to player using Muse Status (MS) protocol.*

--:+ *If for in-game turtle with GPS and the dead reckoning and GPS disagree, include that in report.*

--: core.report(level: #:, ...: any) -> *If level less than status threshold, report rest as string.* -> nil

--:: core.logging(arguments: [:level: #:, filename: ":"]) -> Set threshold level [and local log file] for status reports -> **nil**

--:: core.record(message: "😊" -> Appends (status) message to log file on player. -> **nil & !**

--:: core.trace(err: any) -> Reports traceback for xpcalls. -> **err: any**

--:# User interface utilities

--:: core.completer(completions: {}) -> Register command completions for shell -> **(:)**

--:: core.echo(...: any) -> For testing; just returns its arguments. -> ...: **any**

--:- echo arguments ... -> For testing; just returns its arguments.

--:: core.optionals(string: ":", number: #:?, ...: any) -> Optional number and/or string. -> **string: ":", number: #:?, ...: any**

--:# Math utilities

--:: core.vectorPairs(start: bounds, addend: xyz, number: #:, partial: bounds?) -> Make plots. -> **bounds[]**

--:+ Addend is used to create a vector pair to be added cumulatively beginning with start bounds for result.

--:+ The number *n* is the number of bounds in result where each bound is offset by addend from the prior bounds.

--:+ Optionally the partial bounds are included as the first bounds in the result.

--:> bounds: Vector pair defining a rectangular solid -> **:[xyz, xyz]**

--:> xyz: Minecraft coordinates: +x: east, +y: up, +z: south -> **:[x: #:, y: #:, z: #:]**

--:: core.orient(vectors: xyzMap, face: ":", rotate: ":",?) -> Three dimensional rotation -> **xyzMap**

--:+ Turn from up north to face, default for no face is to rotate -90 degrees.

--:> xyzMap: Table of vectors either an array or dictionary -> **xyz[] | [core.faces]: xyz**

--:> core.faces: Key for composed function dictionary ->

"north"|"south"|"east"|"west"|"up"|"down"|"rotate"

--:: core.round(n: #😊 -> Next integer down if below half fraction -> **#:**

--:# Example iterator, restartable at index

--:: core.inext(table: {}, index: #😊 -> Iterator over table beginning at index. -> **(:), {:}, #:**

--:# Lowest level turtle and mock turtle support used by several libraries including lib/motion

--:: core.findItems(targets: ":[]") -> Selects found slot. -> **detail?**

--:> detail: Defined by Computercraft -> **{name: detail.name, count: detail.count, damage: detail.damage}**

--:> detail.name: *Prepended by the mod name "minecraft:". -> ":"*

--:> detail.count: *Available in inventory -> #:*

--:> detail.damage: *Distinguishing value -> #:*

--:: core.sleep(#{?}) -> *Mocks sleep as null operation out of game. -> nil*

--:: core.getComputerID(id: #{?}) -> *Out of game returns id; id ignored in game. -> id: #:*

--:: core.getComputerLabel(label: ".*") -> *Out of game returns label; label ignored in game. -> label: ":"*

--:: core.setComputerLabel(label: "😊") -> *Sets (out-of game global) label -> label: ":"*