**Goo scripting language description:**

1. Adding a script to an object does nothing. In order to use it, first you need to prompt the Goo Interpreter to translate your script into events with “translate()” method like this:

objects.bob.scripts.new\_script.translate();

1. The code inside the main scope of the script is always translated into a dormant event. In order to trigger a dormant event use “run()” method like this:

objects.bob.events.sleepy.run();

1. Engine can halt the execution of an event if the infinite loop is detected. If needed it can also deactivate a dangerous event – deactivated event cannot be triggered by other events. In order to activate such event, use methods: “run()” or “elevated\_run()”. The second method forces the engine to ignore dangerous behavior.
2. Every method or accessor needs a context based on one of these templates:

[subject].[method/variable] – accessing methods and variables of the subjects: layers, cameras, mouse and env(environment);

cameras.[camera\_id].[method/variable];

layers.[layer\_id].[method/variable];

layers.[layer\_id].[object\_id].[method/variable];

layers.[layer\_id].[object\_id].[module].[method/variable];

layers.[layer\_id].[object\_id].[module].[element\_id].[method/variable];

For example:

layers.clone(layers.second.patrick, layers.first.new\_patrick);

layers.second.patrick.var.apples = 10;

You can shorten “layers.[layer\_id].[object\_id]” using built-in variable **objects** like this:

objects.[object\_id].[method/variable];

objects.[object\_id].[module].[method/variable];

objects.[object\_id].[module].[element\_id].[method/variable];

When accessing the owner of the script, you can just use built-in variable **me** like this:

me.var.money += 50;

Under the hood, accessing the context by id in this way uses aggregation command **first**:

cameras.[camera\_id] 🡸🡺 first(cameras.id == [camera\_id]);

layers.[layer\_id] 🡸🡺 first(layers.id == [layer\_id]);

objects.[object\_id] 🡸🡺 first(objects.id == [object\_id]).

1. Context can be assigned to a variable using **let** statement:

let a = layers.background;

let bob = objects.bob;

let money = objects.bob.var.money;

1. In order to access the context of a group of objects in one go use aggregation operators: first, last, all. Aggregation templates:

[aggregation]([subject].[…].[method/variable] [comparison] [value]);

[aggregation]([subject].[…].[method/variable] [comparison] [subject].[…].[method/variable])

You can assign aggregated context to a variable using **let** statement. Also

Examples of aggregation:

first(id == “bob”).var.money = 10; - this line do exactly the same thing as this line: “objects.bob.var.money = 10”;

all(group == “tree”).events.spawn\_apples();

let first\_bob = first(group == “bob”);

let last\_bob = last(group == “bob”);

let all\_bobs = all(group == “bob”);

let all\_rich\_kids = all(var.money >= 1000).

1. While loop

while(me.var)

1. If statement
2. Functions:

fun funny()

1. Operations bound to events are executed after being triggered. List of trigger sources:
   1. Terminal – with “run()” command;
   2. Events – with “run()” command;
   3. Time – based on main loop iterations, with condition checks: **each\_iteration**, **each\_second**, **each\_minute**.
   4. Camera – its state and position, on\_camera\_touch().
   5. Keyboard – with on\_key\_pressed(short key), on\_key\_release(short key);
   6. Mouse – with on\_mouse\_move, on\_mouse\_pressed(short key), on\_mouse\_release(short key). Mouse can select a group of objects based on their position and approximated size;
   7. Objects – internal changes;
   8. Variables – with on\_variable\_change;
   9. Collision – collisions of objects in the same layer;
   10. Editable Text Fields – with isWritten(string text);
   11. Movement – with based on state, isMoving(string object\_id),
2. Functions that create new objects (clone() and create()) return pointers to newly created objects. For example:

let newBob = Layer.bobTemplates.bob123.clone(“newBob”);

newBob.var.type = 10;

newBob.event.prepareBasedOnType();

1. Script lets you create and destroy elements of every module in the object with methods new(string id) and destroy(string id), for example:

Objects.walter.particles.new(“snow”);

Objects.walter.particles.destroy(“rain”);

1. aa

**[script].****translate(string event\_id=”[script]”):**

Description: Method prompts the interpreter to translate selected script into an event named **event\_id** by creating a new event or updating existing one in the selected object. Default value of **event\_id** is the name/id of translated script.

Example: me.scripts.recursion.translate()

**[event].run(int n=1):**

Description: Method executes a chosen event **n** times, which is limited by the environmental variable **stack\_size**.

Example: me.events.recursion.run().

**[event].elevated\_run(int n=1):**

Description: Method executes a chosen event **n** times without any limitation and by ignoring all dangers like infinite loops, modification of system files or having sex with your mom.

Example: me.events.recursion.elevated\_run().

**[event].stop():**

Description: Method deactivates the event, making it indifferent to any triggers.

Example: me.events.eat\_bananas.stop().

**print(string text):**

Description: Command prints a provided text in the terminal. It’s the best tool for debugging!

Example: print(“Hello Goo!\n”);

**let [name] = [value]:**

Description: This statement assigns a literal or context to a new variable created in the script owner. Examples:

let banana = “”

**each\_iteration:**

Description: Code inside its scope is translated into executed during every iteration of engine loop. On the engine architectural level **each\_iteration** creates an event.

**each\_second:**

Description: Simple condition check triggered every second. You can simulate it by incrementing a variable every iteration and checking its value in a simple if statement.

Result: bool

Example:

   each\_second{ me.var.money ++; }

**isolated\_if:**

Description: this if statement checks only the state of the currently analyzed object.

Result: bool

Example:

isolated\_if( me.var.money > 64 ) {

me.var.money --;

}

**half\_if:**

Description: this if statement inherits functionality of **isolated\_if** and compares currently analyzed object’s state (including constants) to a one specific object at the time.

Result: bool

Examples:

half\_if( me.var.money > you.var.money ) { … }

half\_if( you.var.money == 90 && bob.var.gold < 45 ) { … }

**full\_if:**

Description: this if statement compares constants, currently analyzed object’s state, one specific object or even two different objects in every comparison.

Result: bool

Examples:

full\_if( you.var.money > bob.var.money) { … }

full\_if( me.var.money == 90 && bob.var.gold < jeff.var.diamonds

|| steve.var.cash < patrick.var.bread ) { … }

**first:**

Description: this conditional statement returns the first object

Result: bool

Examples:

half\_if( me.var.money > you.var.money ) { … }

half\_if( you.var.money == 90 && bob.var.gold < 45 ) { … }

last

forall

while

conflicts: next conditionals have to work on updated objects!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!