

START SWISH!!!!

Night before:

Set presso and swish to autostart
disable skype, workrave, etc.

Distributed SWI-Prolog Development

Anne Ogborn



SWI Prolog

Pengines



- Torbjörn Lager
- University of Gothenborg

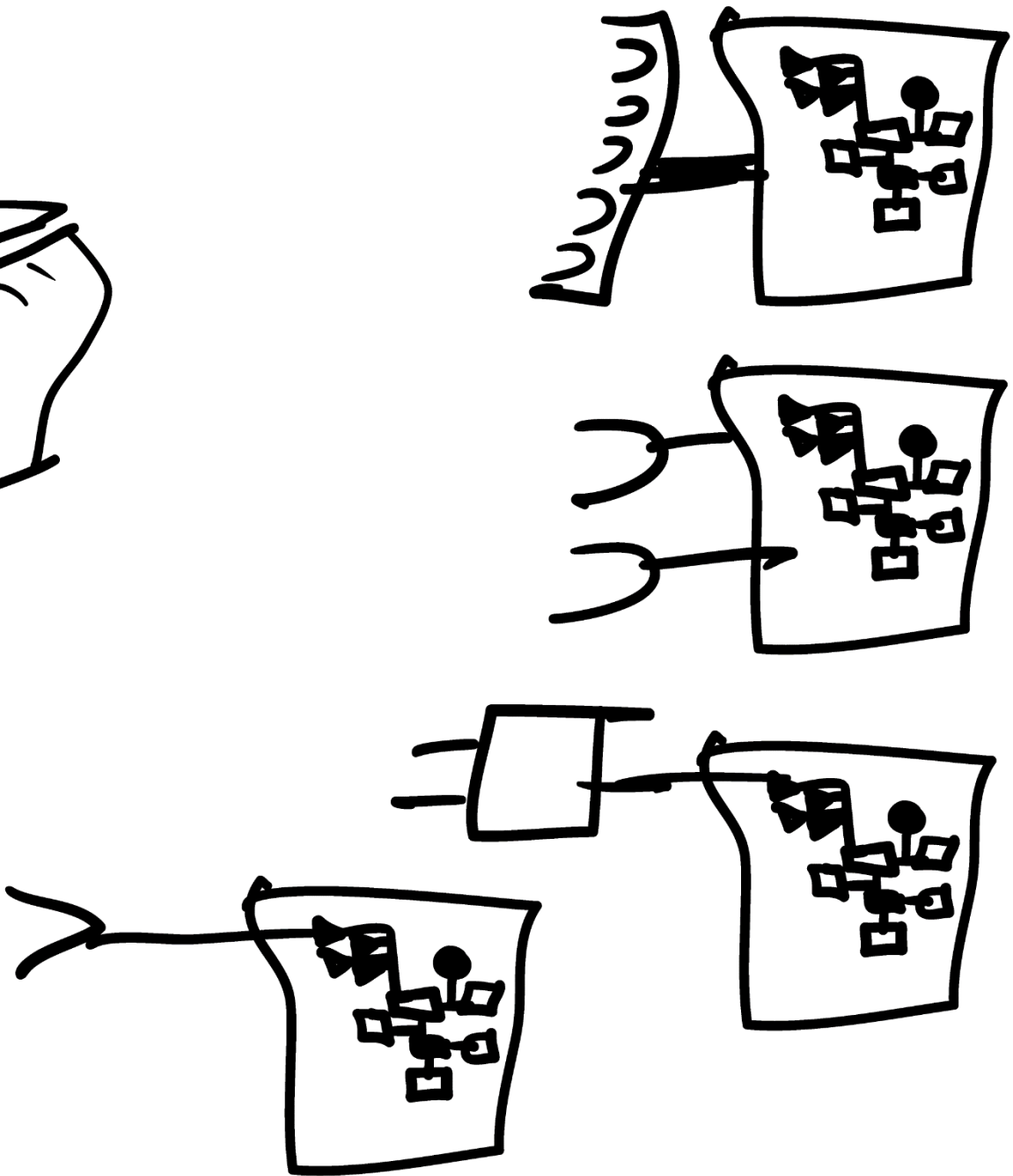


- Jan Wielemaker
- Free Univ. of the Netherlands

Prolog?

Semantic Web?

Penguin Roles



anniepoo@localhost: ~

System information as of Sun Sep 14 15:42:02 UTC 2014

System load:	0.0	Processes:	157
Usage of /:	19.8% of 72.09GB	Users logged in:	0
Memory usage:	34%	IP address for eth0:	173.255.210.28
Swap usage:	0%		

Graph this data and manage this system at <https://landscape.canonical.com/>

New release '13.04' available.

Run 'do-release-upgrade' to upgrade to it.

*** System restart required ***

Last login: Wed Jun 18 19:39:12 2014 from c-50-137-46-145.hsd1.or.comcast.net

anniepoo@localhost:~\$ swipl

Welcome to SWI-Prolog (Multi-threaded, 64 bits, Version 7.1.10-8-g4c1e76b)

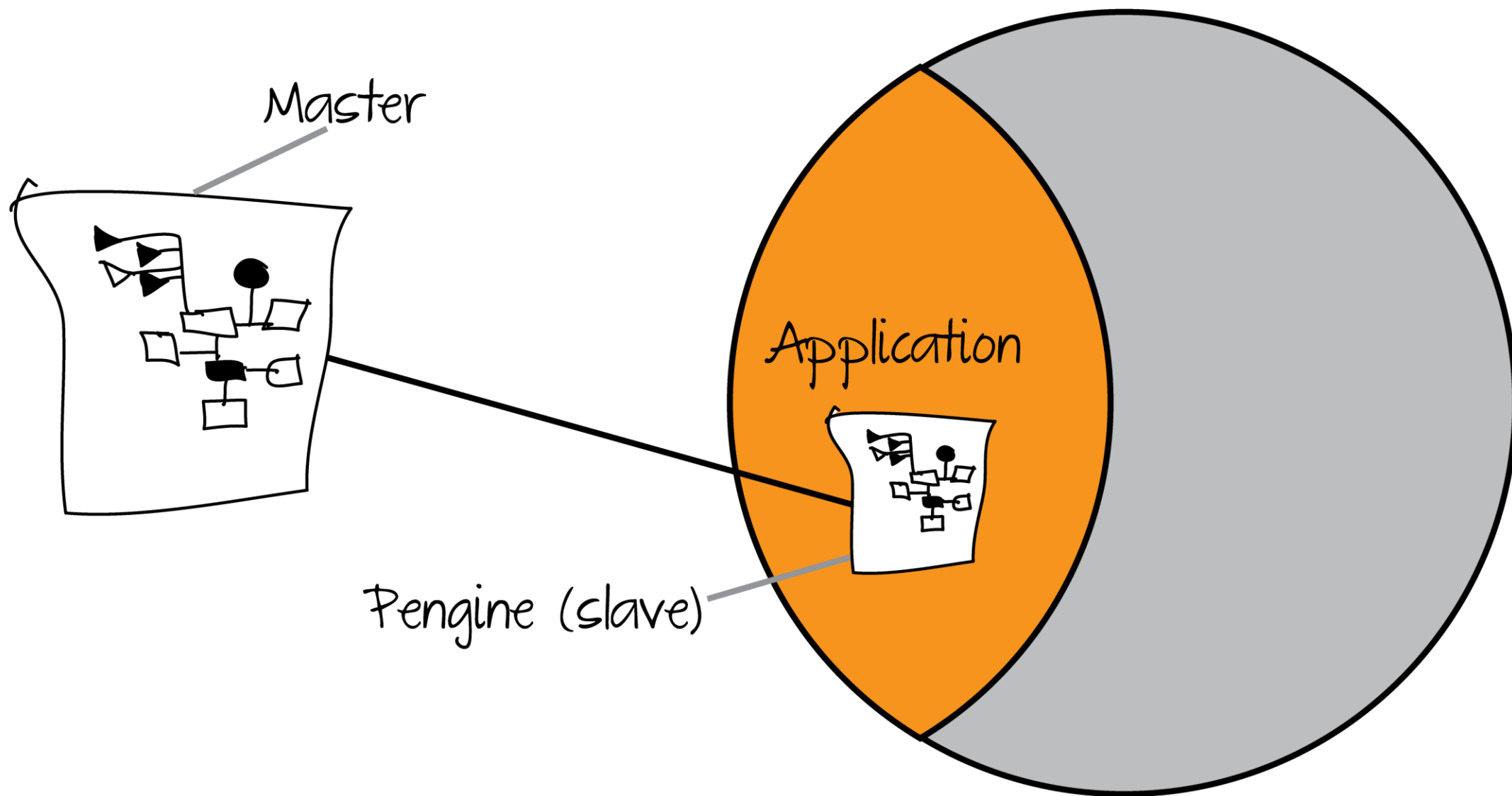
Copyright (c) 1990-2014 University of Amsterdam, VU Amsterdam

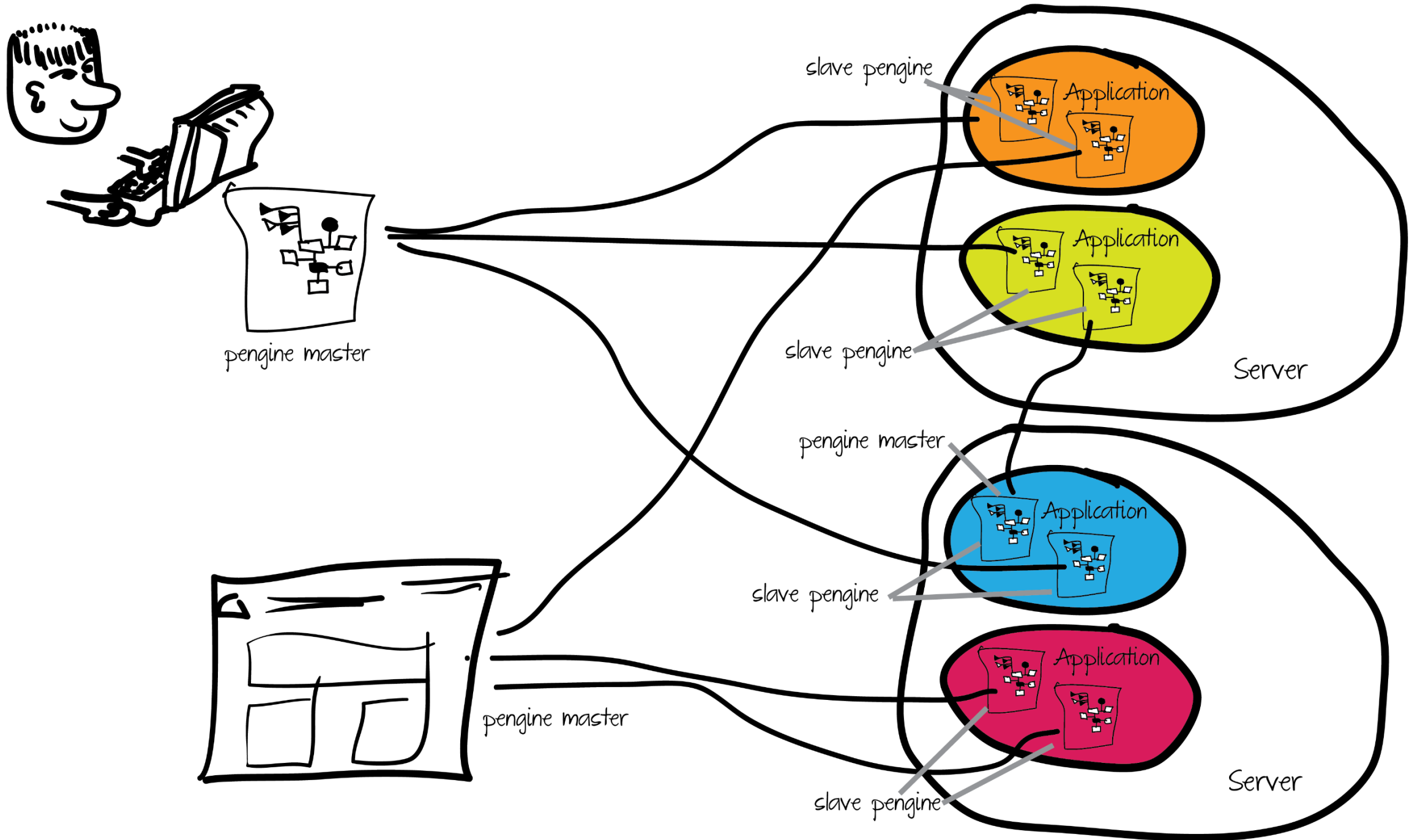
SWI-Prolog comes with ABSOLUTELY NO WARRANTY. This is free software,
and you are welcome to redistribute it under certain conditions.

Please visit <http://www.swi-prolog.org> for details.

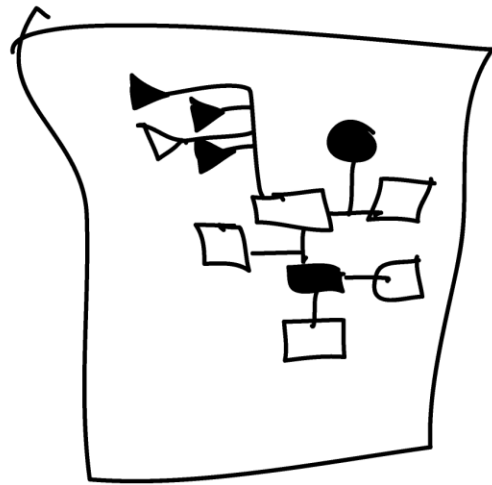
For help, use ?- help(Topic). or ?- apropos(Word).

?- 

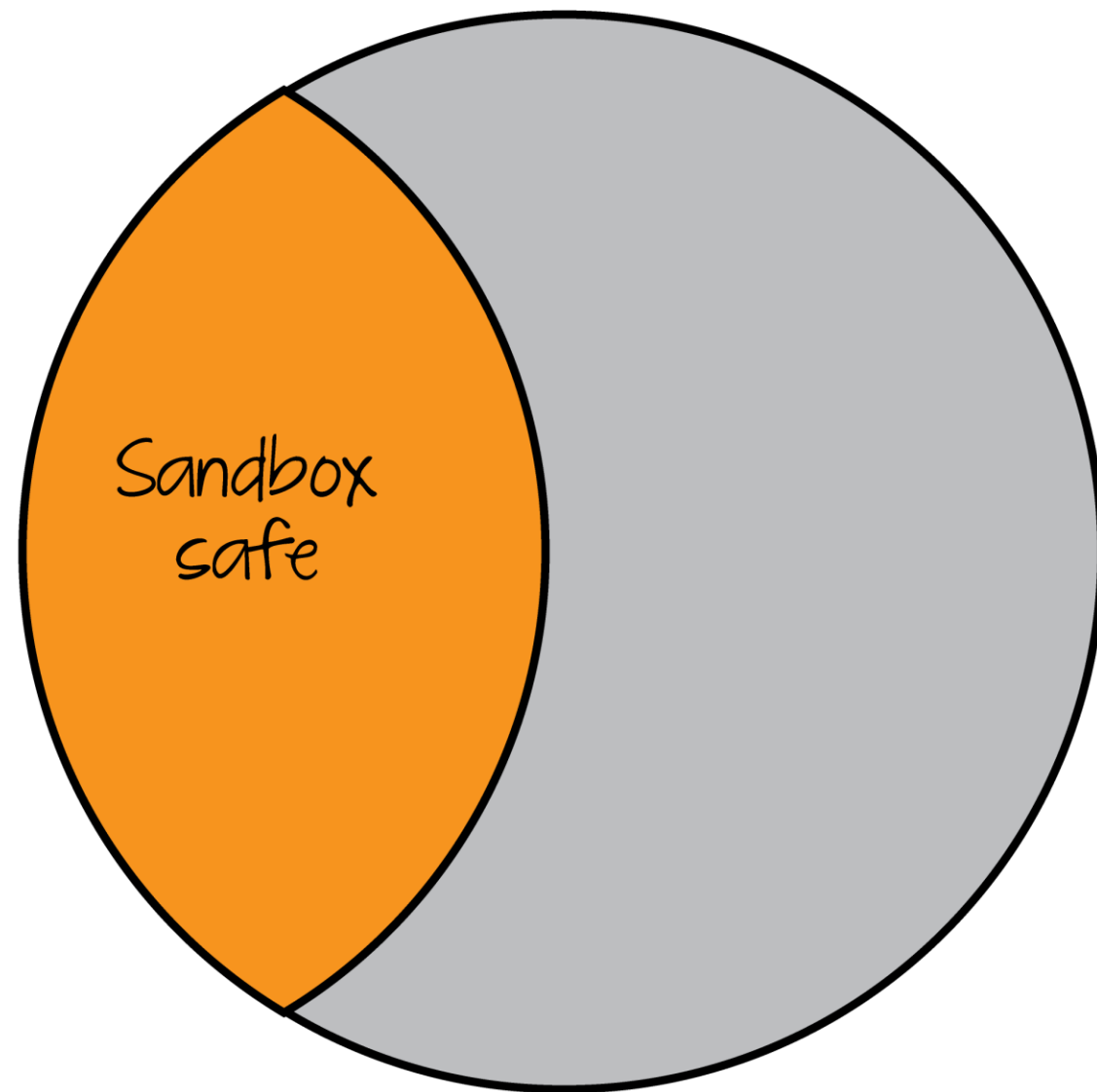
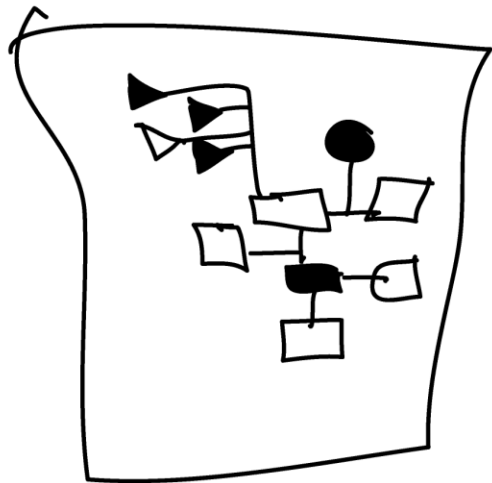


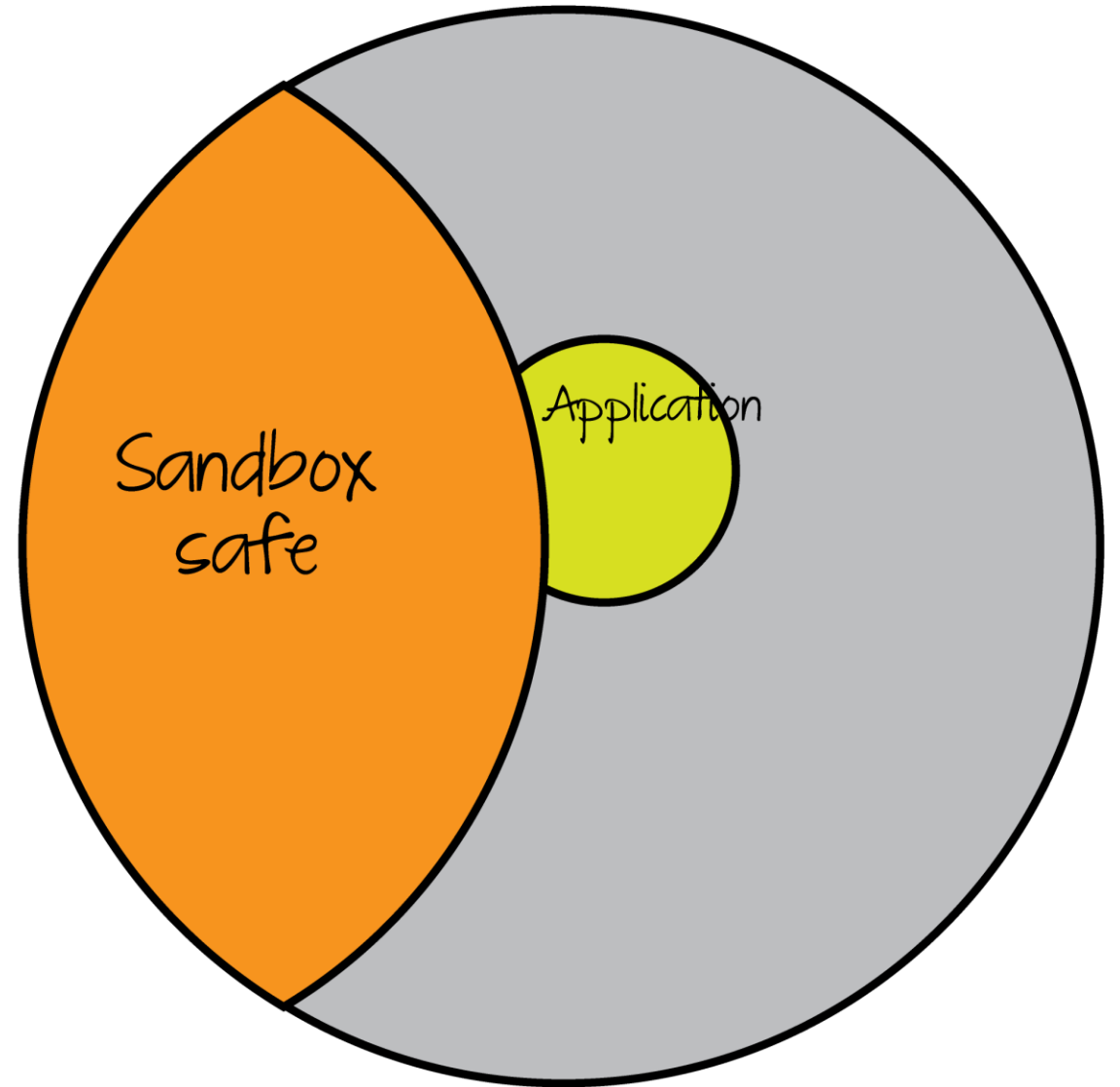
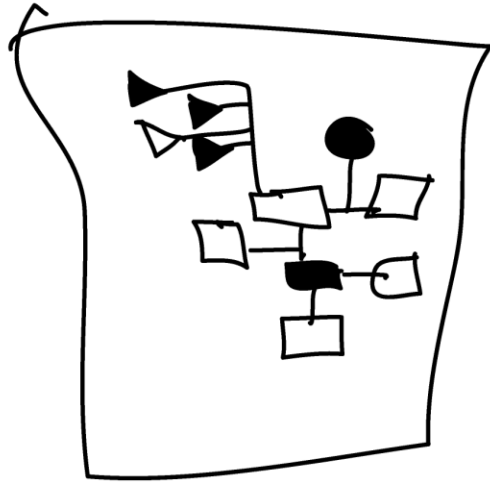


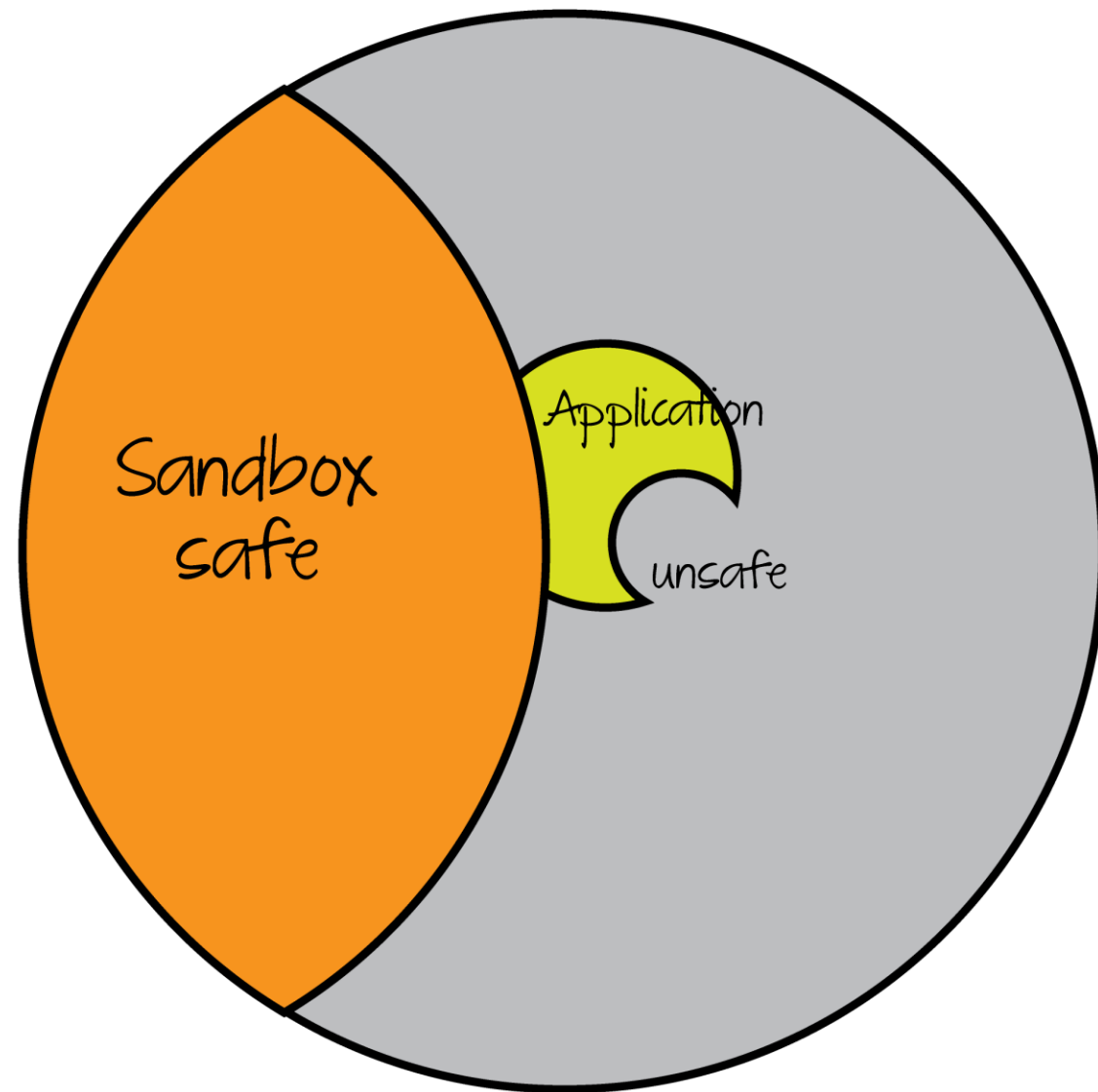
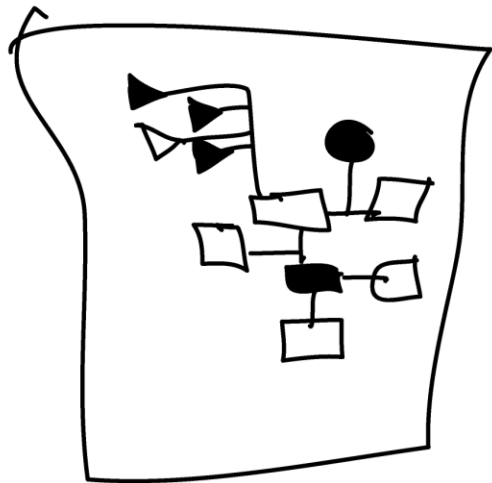
The Penguin Knowledgebase

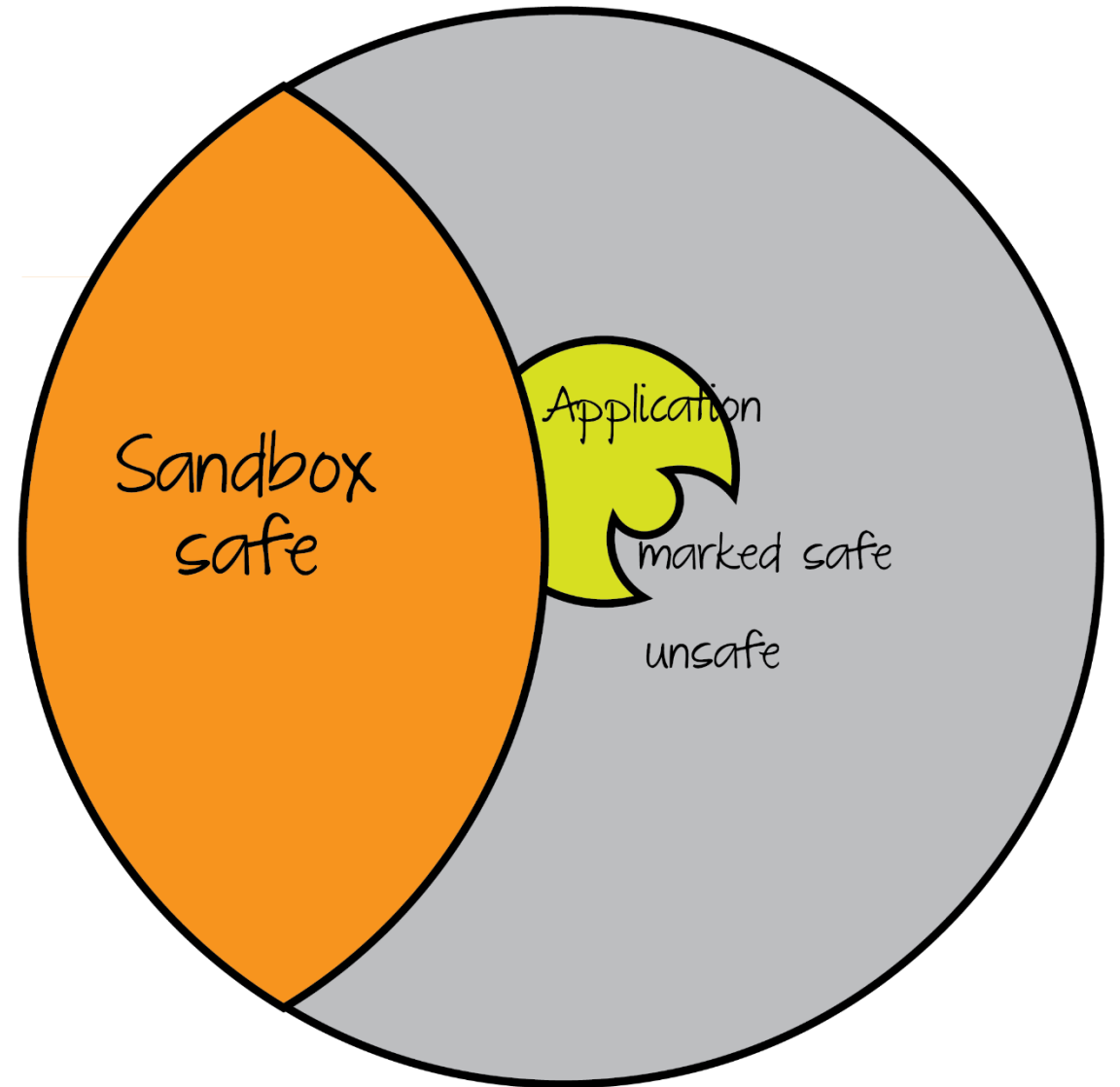
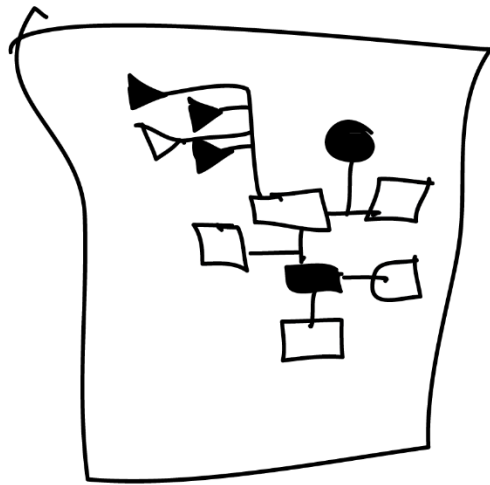


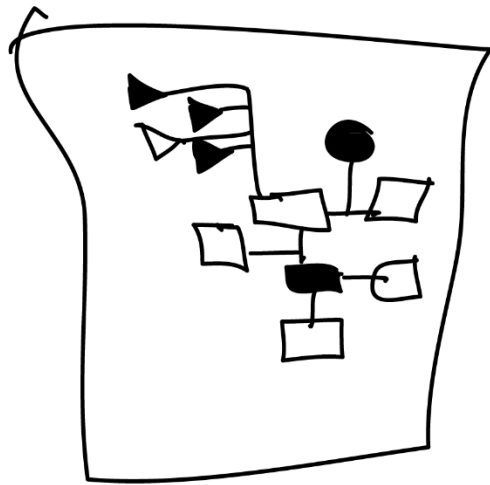
Prolog
Knowledge Base



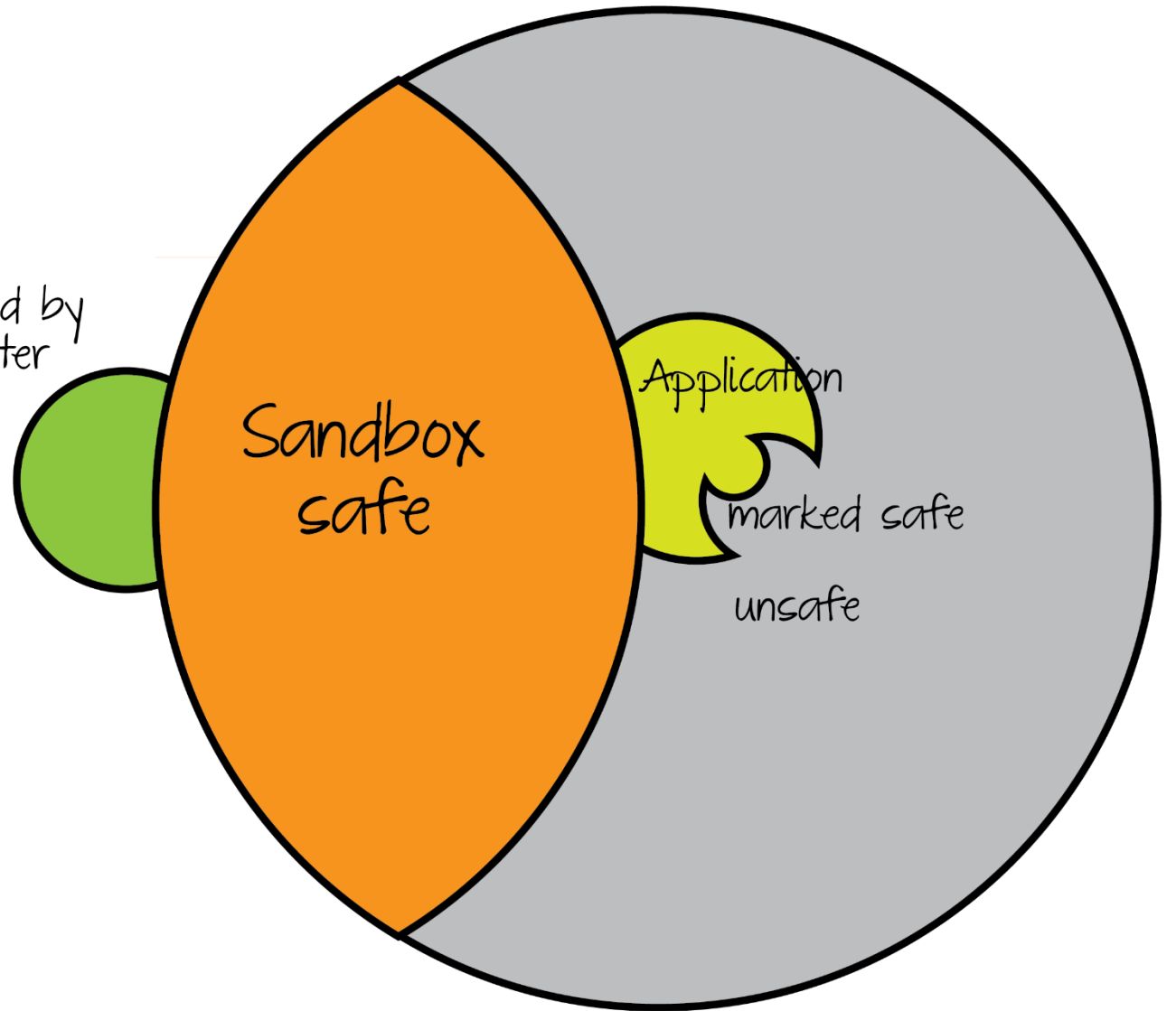


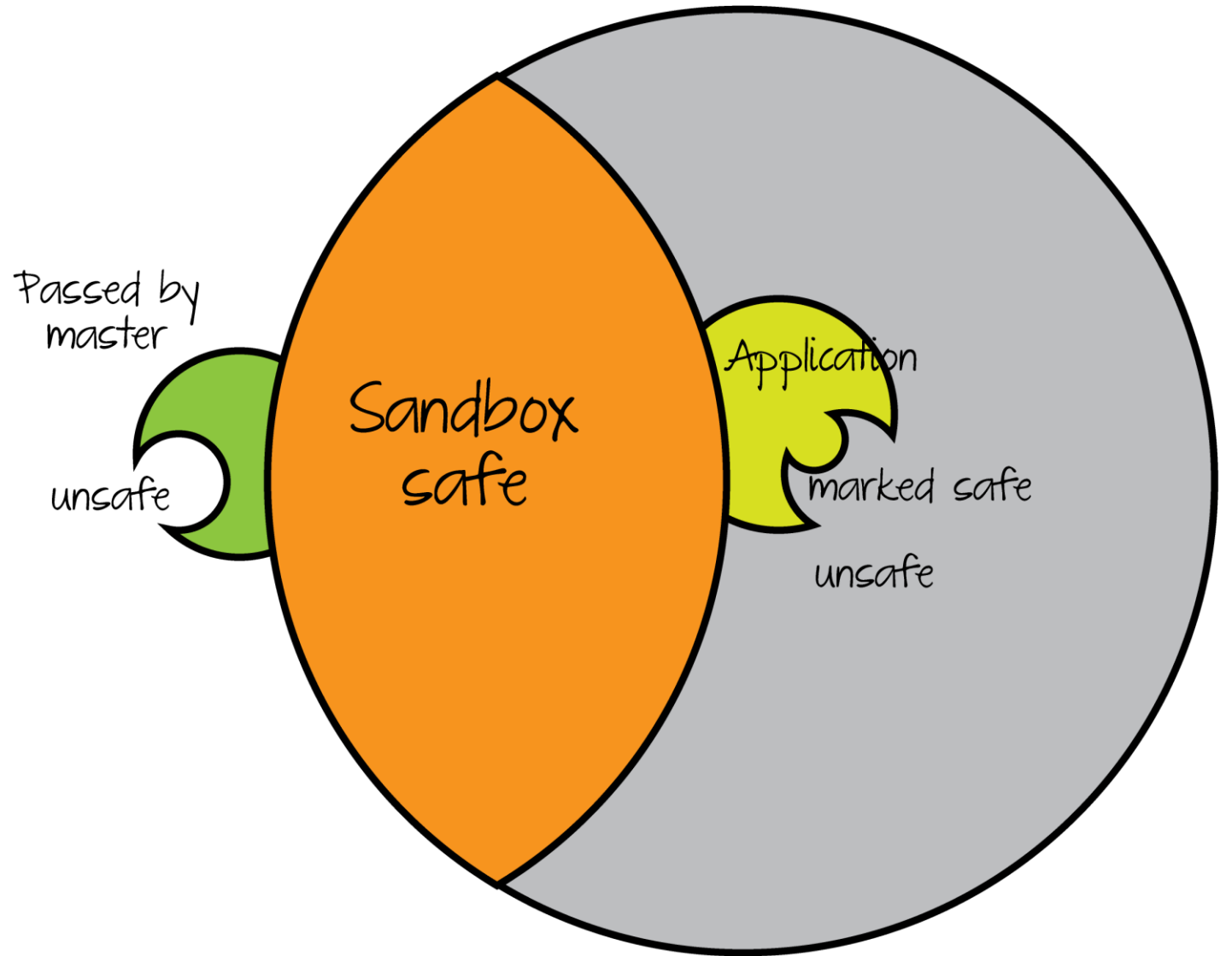
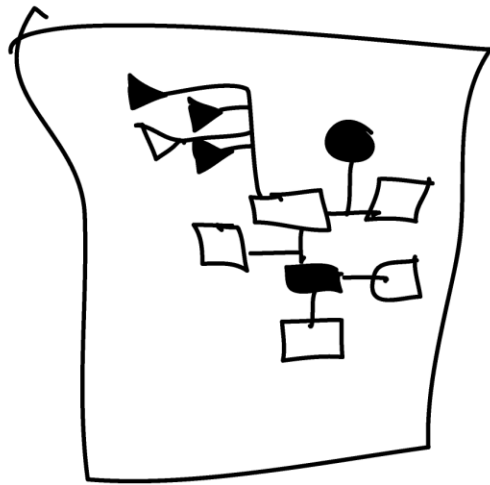


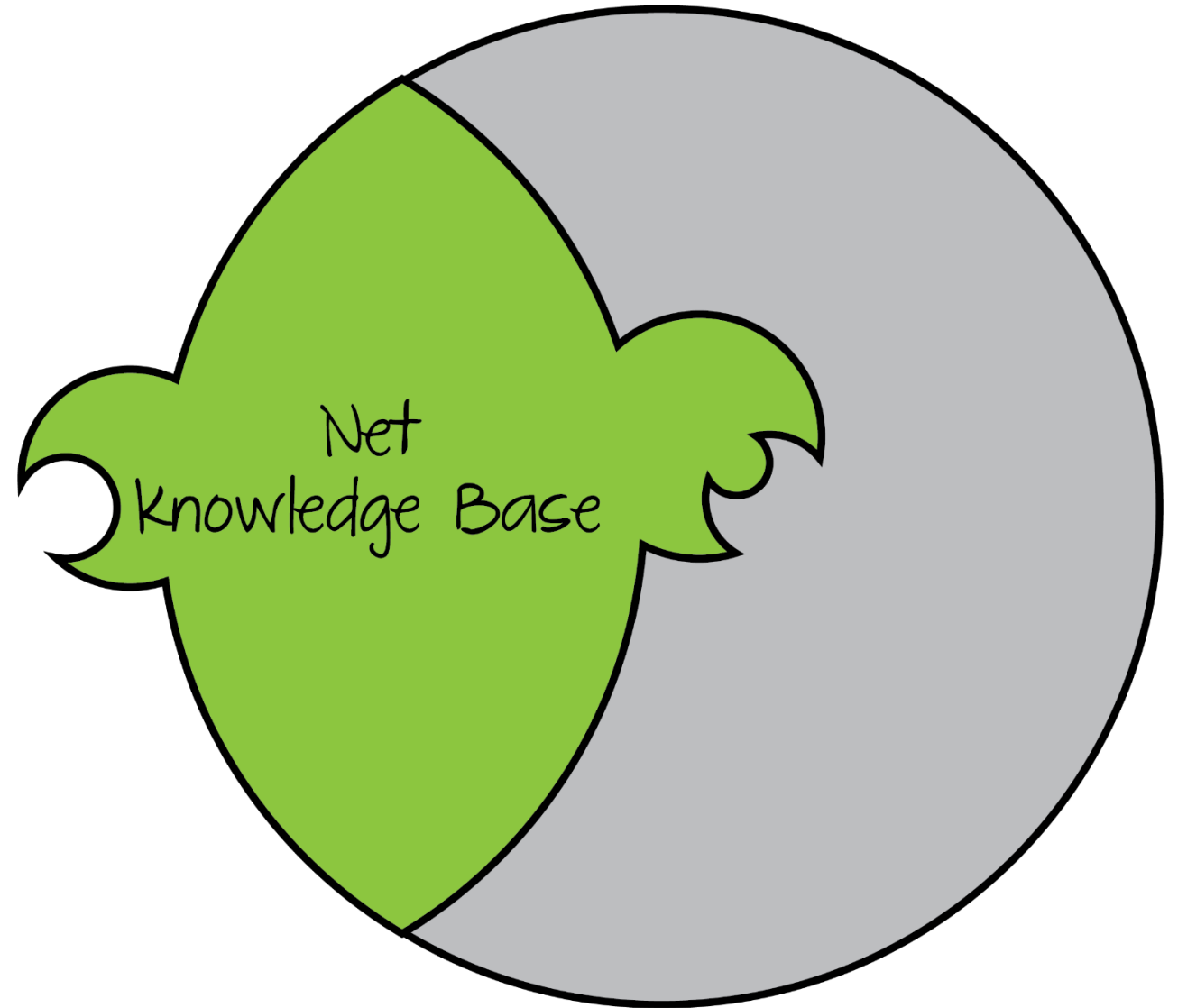
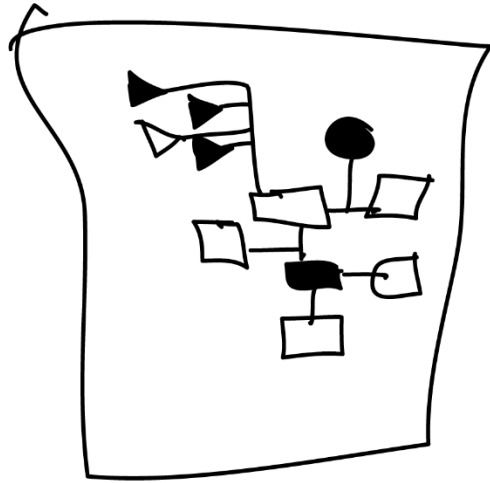




Passed by
master







Querying The Penguin

client.pl

```
pengine_demo(Port) :-  
    format(atom(URL),  
    'http://localhost:~d', [Port]),  
    pengine_create(  
        [ server(URL),  
          src_text("  
            q(X) :- p(X).  
            p(a). p(b). p(c).  
          ")  
        ],  
    pengine_event_loop(handle,  
    [ ])).
```

```
handle(create(ID, _)) :-  
    pengine_ask(ID, q(_X), [ ]).  
handle(success(ID, X, false)) :- !,  
    writeln(X),  
    pengine_destroy(ID).  
handle(success(ID, X, true)) :-  
    writeln(X),  
    pengine_next(ID, [ ]).
```

javascript example

```
<script type="text/x-prolog">
q(X) :- p(X).
    p(a).
    p(b).
    p(c).
</script>
```

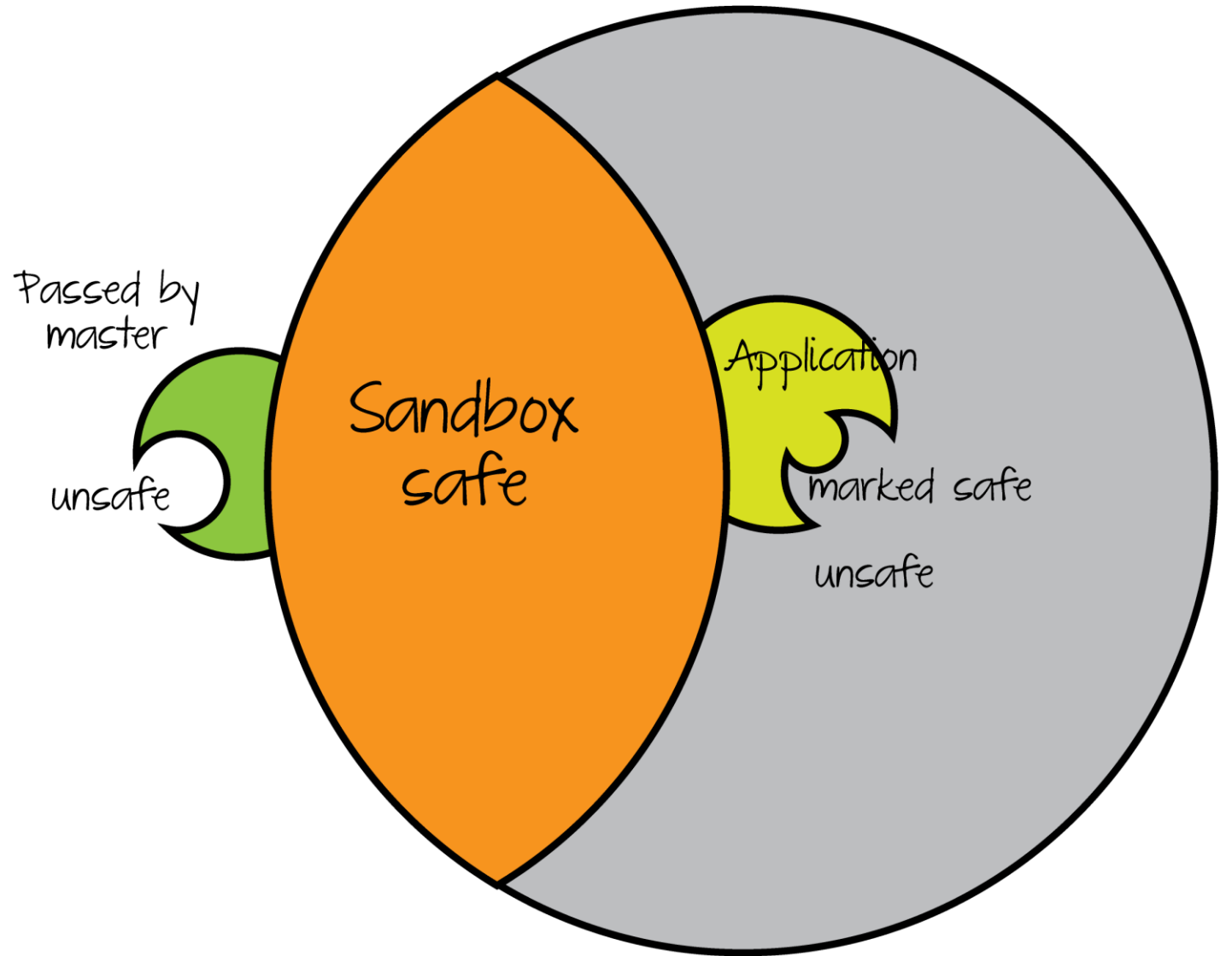
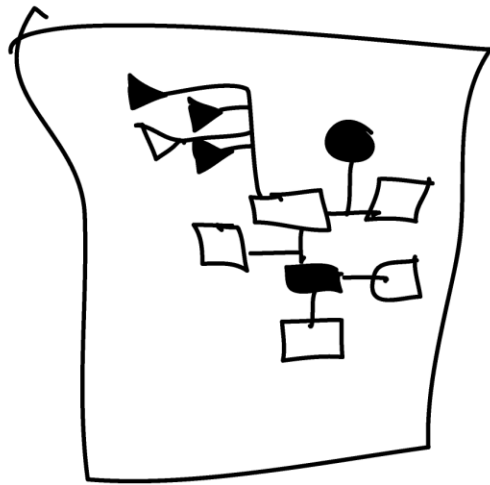
```
<script>
var pengine = new Pengine({
    oncreate: handleCreate,
    onsuccess: handleSuccess,
    onerror: handleSuccess
});
function handleCreate () {
    pengine.ask("q(X)", {
        template:'X'
    });
}
function handleSuccess() {
    $('#out').html(this.data);
    pengine.next();
}
</script>
```


Client using pengine_rpc

```
rpc_demo(Port, X) :-  
    pengine_rpc(  
        'http://someserver.nl/',  
        member(X,  
            [aap, noot, mies]))).
```

IO

- `pengine_input(+Prompt, -Term)`
- `pengine_output(+Term)`



main.pl

```
:- use_module(library(pengines)).  
:- use_module(library(sandbox)).  
:-  
use_module(pengine_sandbox:my_apis).
```

my_apis.pl

```
:- module(my_apis, [my_public/1]).  
  
:- use_module(library(dcg/basics)).  
  
my_public(X) :-  
    dont_say_walrus(X),  
    debug(pengine_example, 'my_public says  
~w', [X]).  
  
dont_say_walrus(X) :-  
    atom_codes(X, XC),  
    phrase(walrus, XC),  
    !,fail.  
dont_say_walrus(_).  
walrus --> string(_) , "walrus", string(_).
```

main.pl

```
:- use_module(library(pengines)).  
:- use_module(library(sandbox)).  
:- use_module(pengine_sandbox:my_apis).
```

my_apis.pl

```
:- module(my_apis, [my_public/1, my_unsafe/1]).
```

```
:- use_module(library(dcg/basics)).
```

```
my_public(X) :-  
    dont_say_walrus(X),  
    debug(pengine_example, 'my_public says  
~w', [X]).
```

```
my_unsafe(X) :-  
    atom_length(X, Len),  
    Len < 25,  
    open('foo.txt', write, Stream),  
    format(Stream, 'Hello Out There ~w~n',  
[X]),  
    close(Stream).
```

```
:- multifile sandbox:safe_primitive/1.
```

```
sandbox:safe_primitive(my_apis:my_unsafe(_)).
```

Federating Queries

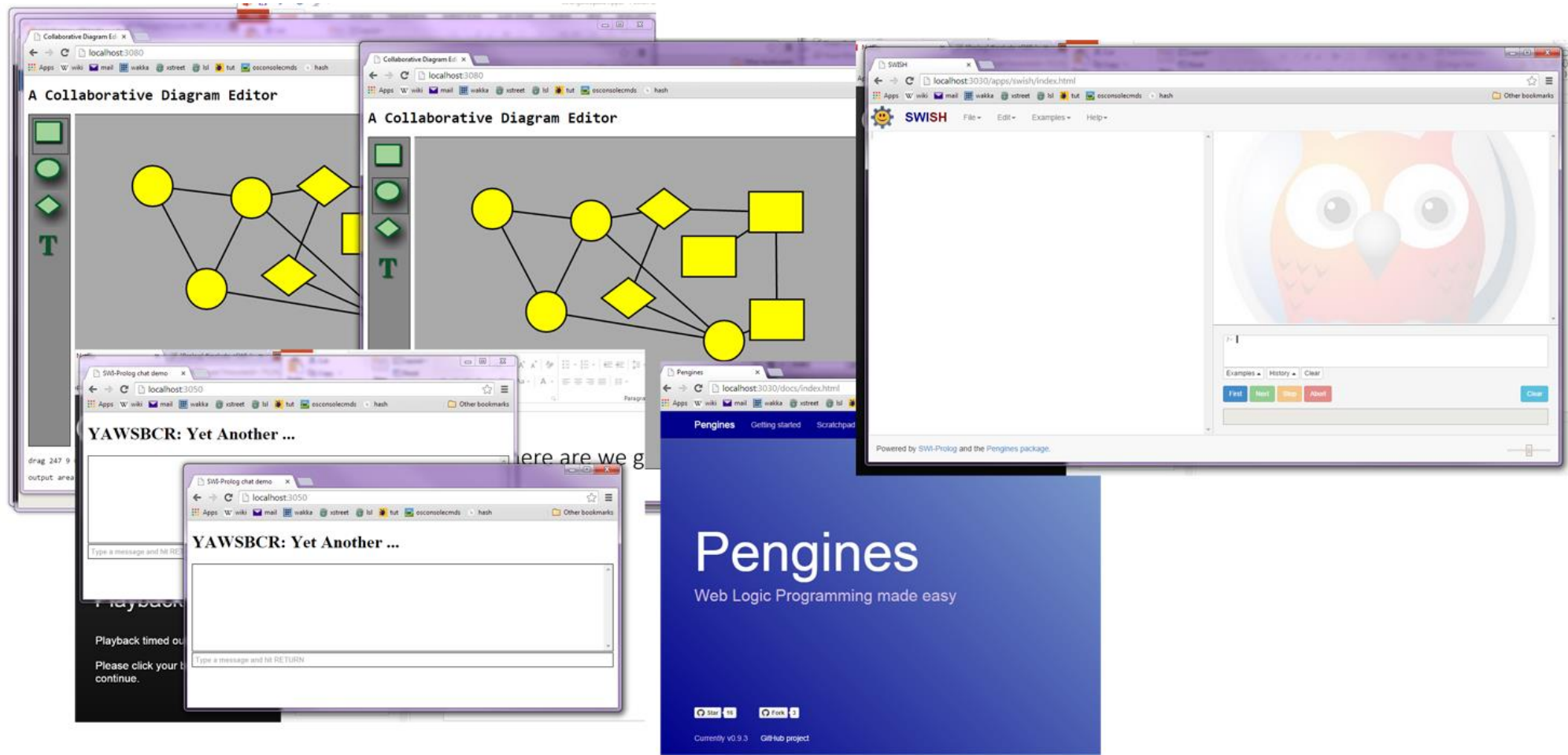
```
from_everywhere(Name, Address) :-  
    pengine_rpc('http://someserver.com/',  
        rdf(S, rdf:type, foaf:Agent)),  
    pengine_rpc('http://someserver.com/',  
        rdf(S, foaf:name, Name)),  
    pengine_rpc('http://whitepages.com/pengines/',  
        rdf(S2, foaf:name, Name)),  
    pengine_rpc('http://whitepages.com/pengines/',  
        rdf(S2, wp:address, Address)).
```

Cliopatria Whitepaper

Useful paper for understanding the relationship between SWI-Prolog and RDF

<http://cliopatria.swi-prolog.org/help/whitepaper.html>

Where Are We Going?



Resources

slides <https://github.com/Anniepoo/strangeloop2014>

Sources/Nightlies

SWISH 2.0 <http://swish.swi-prolog.org>

SWISH 1.0 <http://pengines.swi-prolog.org>

whiteboard <https://github.com/Anniepoo/whiteboard.git>

chat <https://github.com/JanWielemaker/swi-chat>

Docs <http://pengines.swi-prolog.org/docs/documentation.html>