

Processes

Section 3

In this Section, we are going to take a look at...

- Introduction
- Launching and linking
- Messaging

Launching and Linking

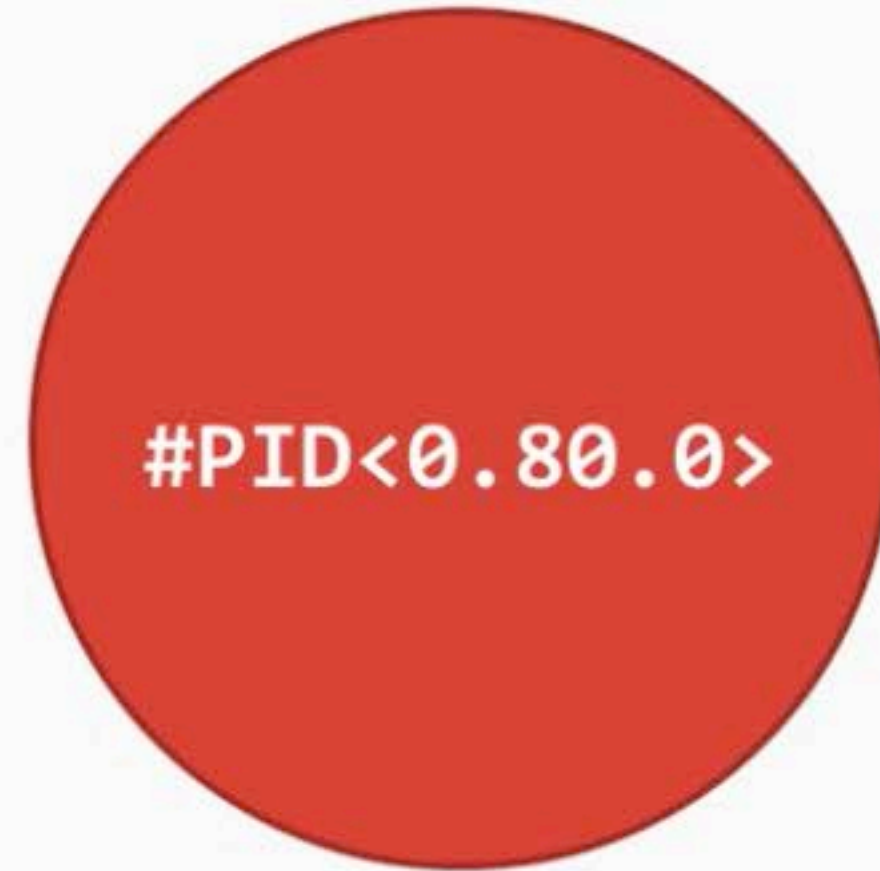
In this Video, we are going to take a look at...

- What is a process
- Spawning processes
- Linking processes

What is a Process?

Process

A language construct for executing code asynchronously and in isolation.



It is not a OS Process!

Process

A language construct for executing code asynchronously and in isolation.



spawn/1

self/0

Processes — Spawning

→ **Projects** iex

Erlang/OTP 19 [erts-8.2] [source] [64-bit] [smp:8:8] [async-threads:10] [hipe]
kernel-poll:false] [dtrace]

Interactive Elixir (1.4.2) - press Ctrl+C to exit (type h() ENTER for help)

iex(1)> self()

#PID<0.80.0>

iex(2)> me = self()

#PID<0.80.0>

iex(3)> Process.alive?(me)

true

iex(4)> other = spawn(fn -> IO.puts("Hello!") end)

Hello!

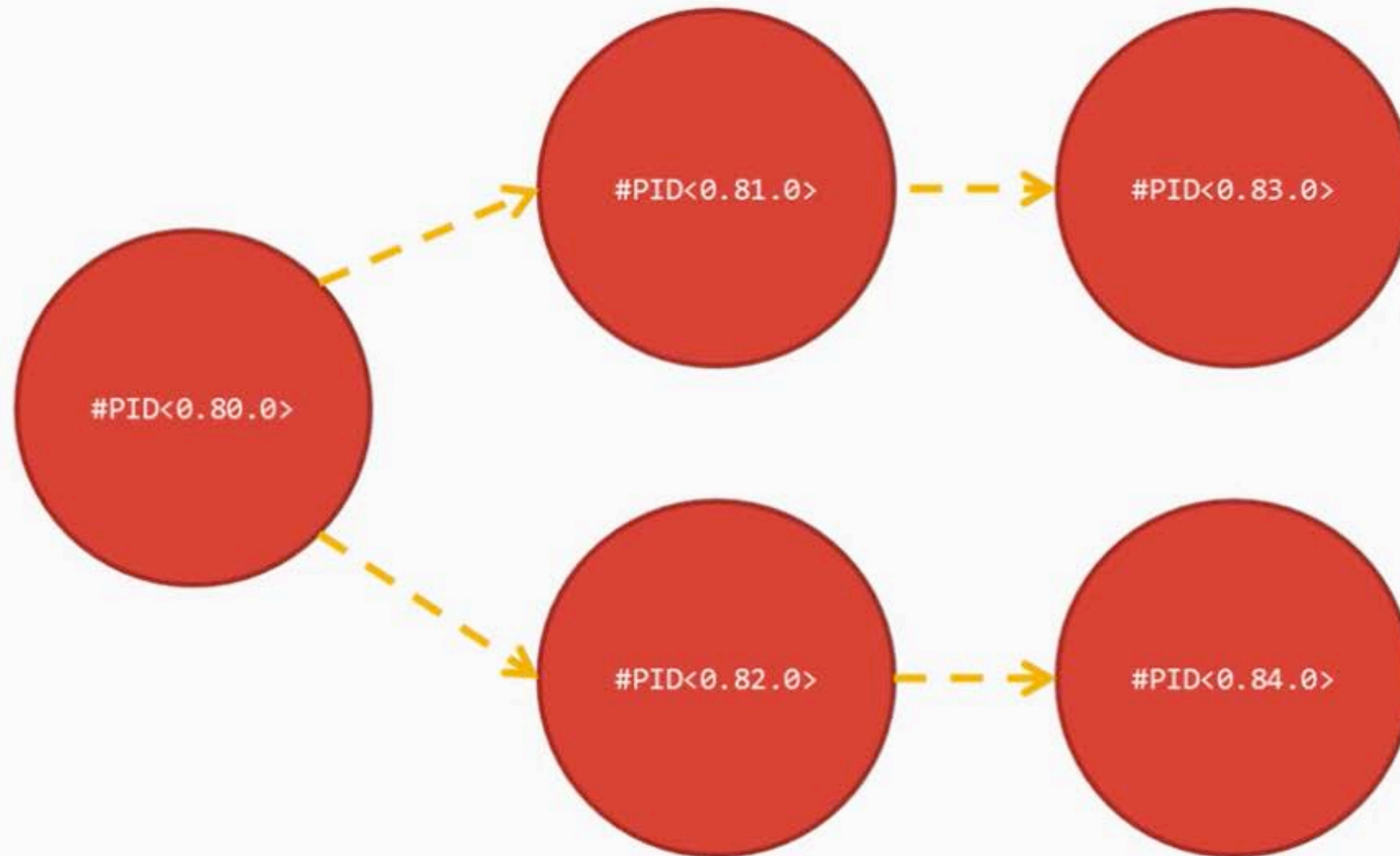
#PID<0.85.0>

iex(5)> Process.alive?(other)

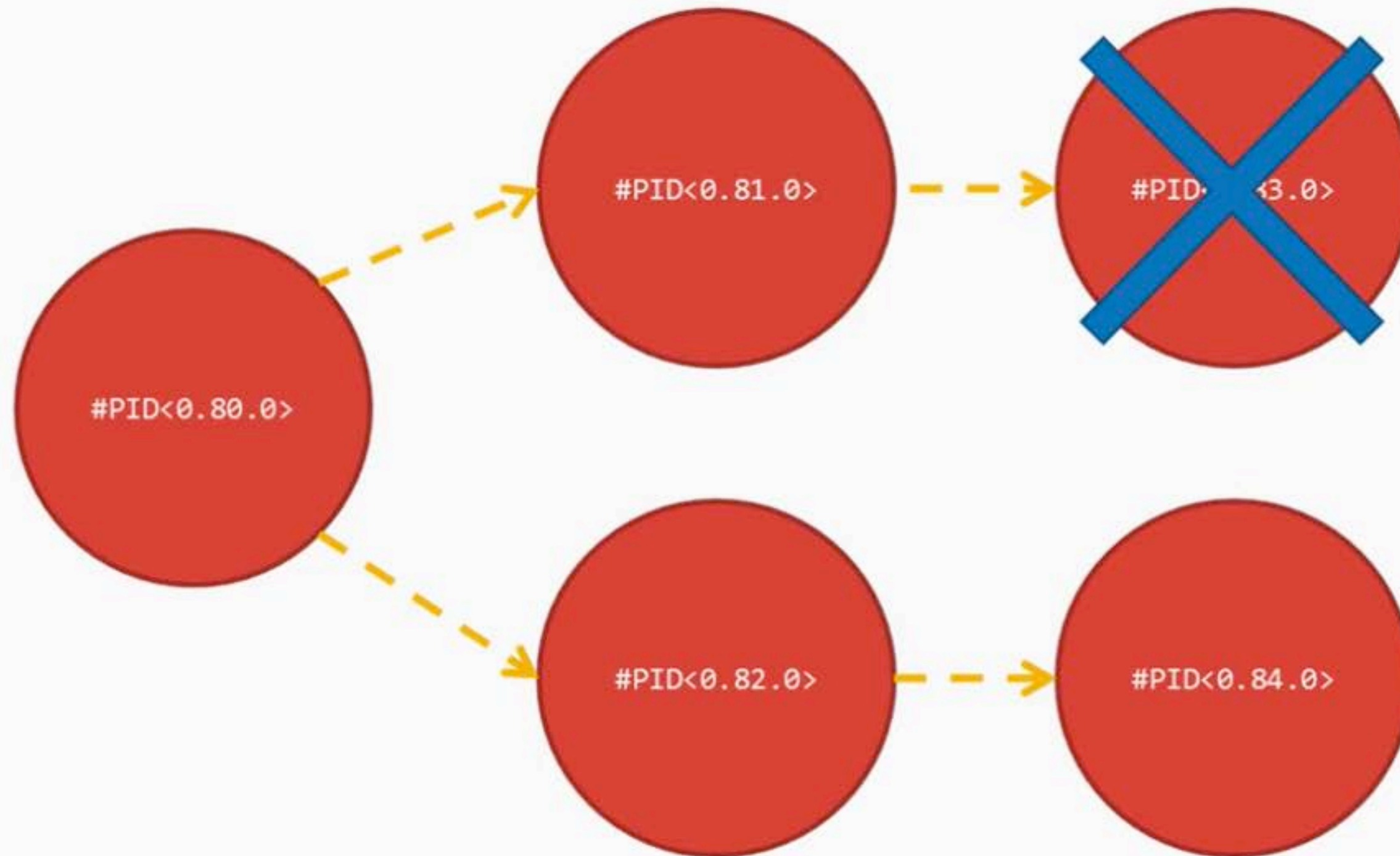
false

iex(6)> █

Linking Processes



Linking Processes



Let it Crash

Linking Processes

Making processes dependent on one another.

If the child crashes, the parent will also crash.

`spawn_link/1`



Processes — Linking

→ **Projects** iex

Erlang/OTP 19 [erts-8.2] [source] [64-bit] [smp:8:8] [async-threads:10] [hipe] [kernel-poll:false] [dtrace]

Interactive Elixir (1.4.2) - press Ctrl+C to exit (type h() ENTER for help)

iex(1)> self()

#PID<0.80.0>

iex(2)> pid = spawn(fn -> raise "Boom" end)

#PID<0.83.0>

iex(3)>

17:39:59.291 [error] Process #PID<0.83.0> raised an exception

** (RuntimeError) Boom
:erlang.apply/2

nil

iex(4)> Process.alive?(pid)

false

iex(5)> self()

#PID<0.80.0>

iex(6)> █

Processes — Linking

```
iex(2)> pid = spawn(fn -> raise "Boom" end)
#PID<0.83.0>
iex(3)>
17:39:59.291 [error] Process #PID<0.83.0> raised an exception
** (RuntimeError) Boom
    :erlang.apply/2

nil
iex(4)> Process.alive?(pid)
false
iex(5)> self()
#PID<0.80.0>
iex(6)> pid = spawn_link(fn -> raise "Boom" end)
** (EXIT from #PID<0.80.0>) an exception was raised:
    ** (RuntimeError) Boom
        :erlang.apply/2

17:40:24.291 [error] Process #PID<0.88.0> raised an exception
** (RuntimeError) Boom
    :erlang.apply/2

Interactive Elixir (1.4.2) - press Ctrl+C to exit (type h() ENTER for help)
iex(1)> self()
#PID<0.89.0>
iex(2)>
```

Processes — Linking

```
nil
iex(4)> Process.alive?(pid)
false
iex(5)> self()
#PID<0.80.0>
iex(6)> pid = spawn_link(fn -> raise "Boom" end)
** (EXIT from #PID<0.80.0>) an exception was raised:
    ** (RuntimeError) Boom
       :erlang.apply/2

17:40:24.291 [error] Process #PID<0.88.0> raised an exception
** (RuntimeError) Boom
    :erlang.apply/2

Interactive Elixir (1.4.2) - press Ctrl+C to exit (type h() ENTER for help)
iex(1)> self()
#PID<0.89.0>
iex(2)> pid
warning: variable "pid" does not exist and is being expanded to "pid()", please
use parentheses to remove the ambiguity or change the variable name
iex:2

** (CompileError) iex:2: undefined function pid/0

iex(2)> 
```