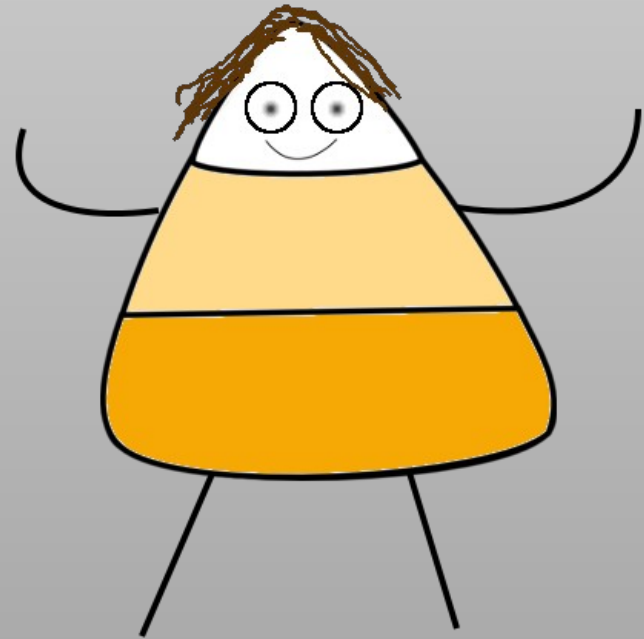


Hacking the Kernel, Hacking Myself

**My experiences as an
intern with the
Gnome Outreach Program
for Women**



Kelley Nielsen

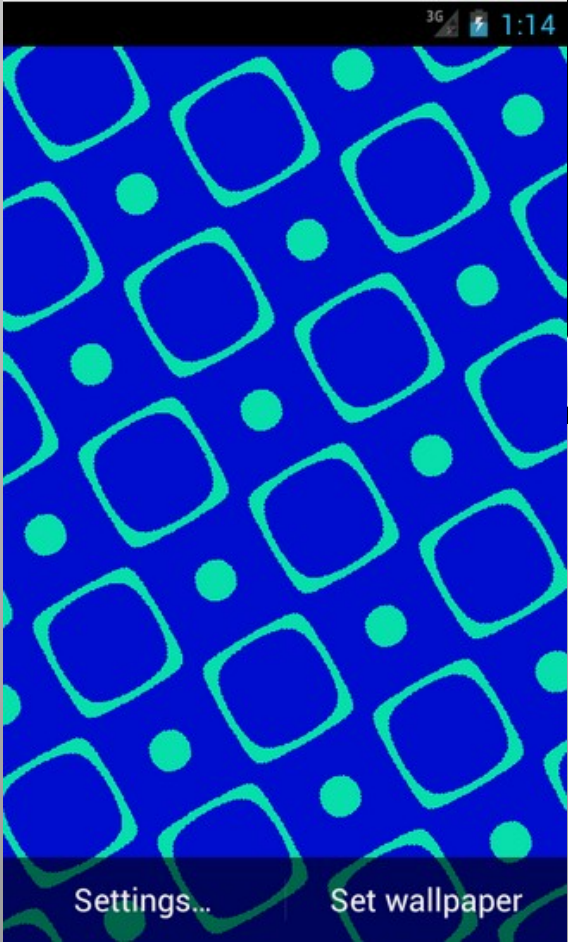
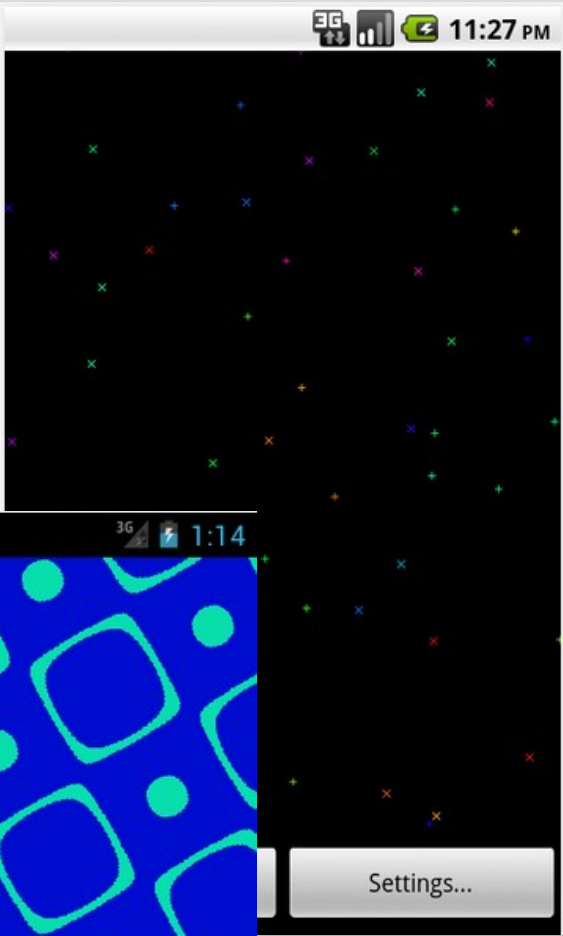
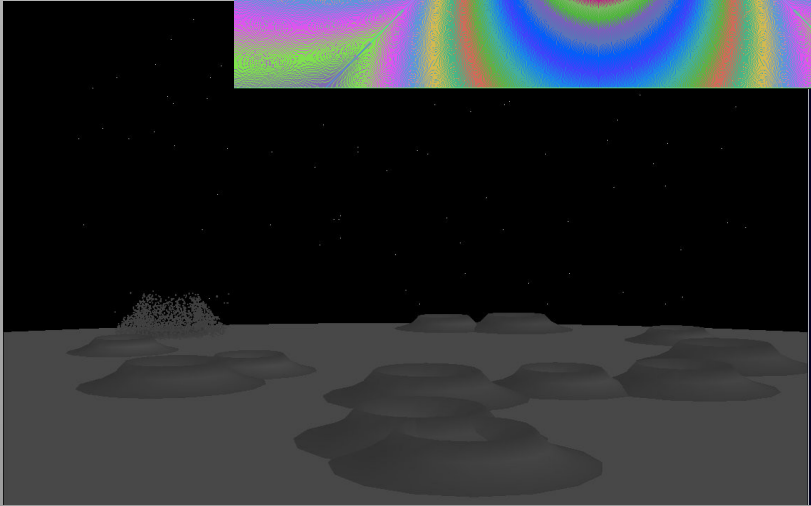
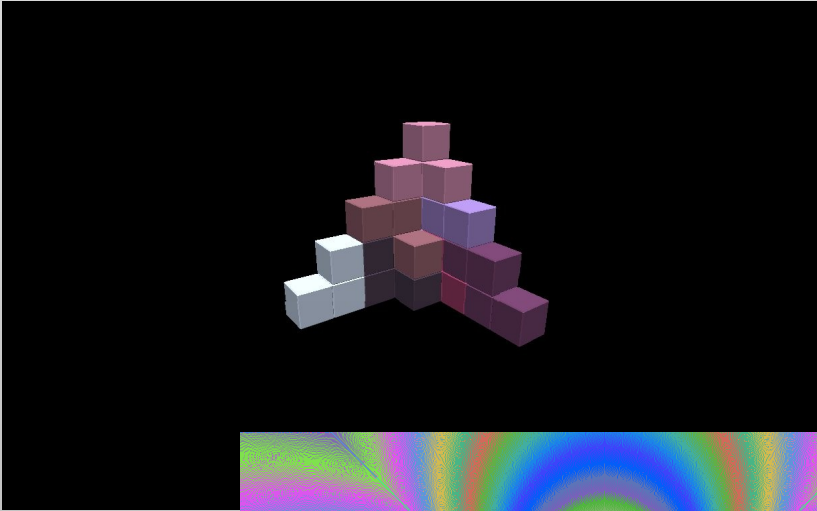
salticidoftheearth.com

**It's not just learning to code, it's
learning about yourself.**

Leveling Up



Bullseye



<snarky comment deleted>

Surprise:

I'm Stubbornly Independent

FREE & OPEN SOURCE SOFTWARE

Outreach Program for Women Internships

**LOOKING FOR AN INTERNSHIP
MAY - AUGUST 2014?**

MAKE A DIFFERENCE!
Support software freedom!

MAY 19 - AUG 18
PROGRAM DATES

MAR 19

APPLICATION
DEADLINE



\$5500
STIPEND (USD)

GNOME.ORG/OPW
LEARN MORE
& APPLY!



THE
LINUX
FOUNDATION

Solution:

**Get Involved in a Formal
Program**

Make a small contribution...



[PATCH] Lotsa awesome code



[PATCH] 88th Contribution from
Same Person



[PATCH 8/11] Super Tricky Bug Fix



[PATCH] More Awesome Code



[PATCH 142/2378] Stuff Stuff Etc



[PATCH] My code



[PATCH] 88th Contribution from
Me



[PATCH 8/11] My Patchset



[PATCH] My Awesome Code



[PATCH 142/2378] My Stuff Etc

“Very nice work.”

My Job:

Re-write swapoff

**Memory
Access**



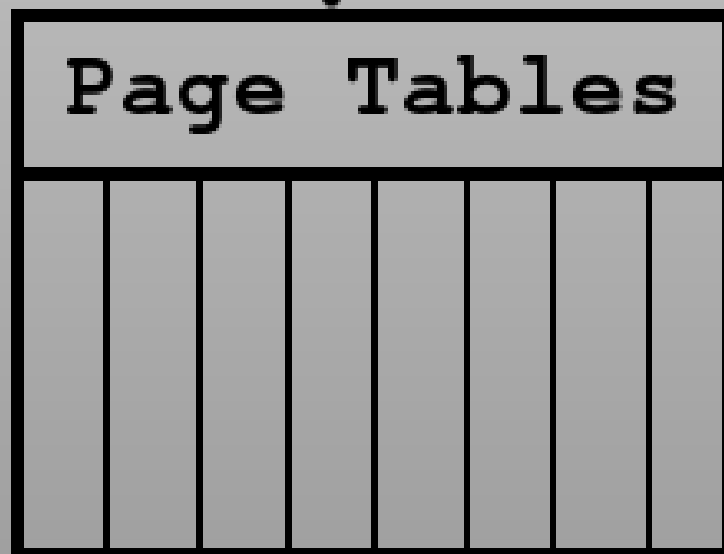
**Memory
Access**



Page Tables

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Memory
Access

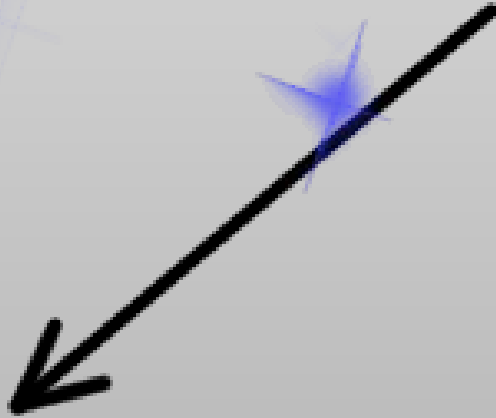


Memory
Access



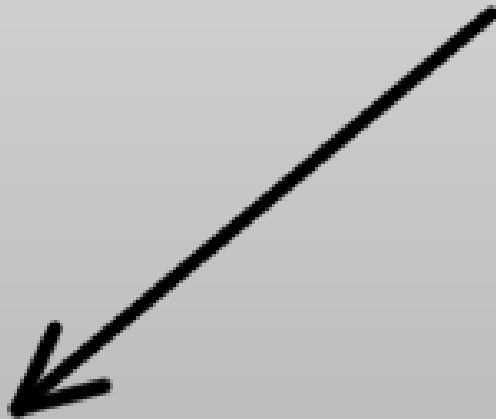
Page Tables

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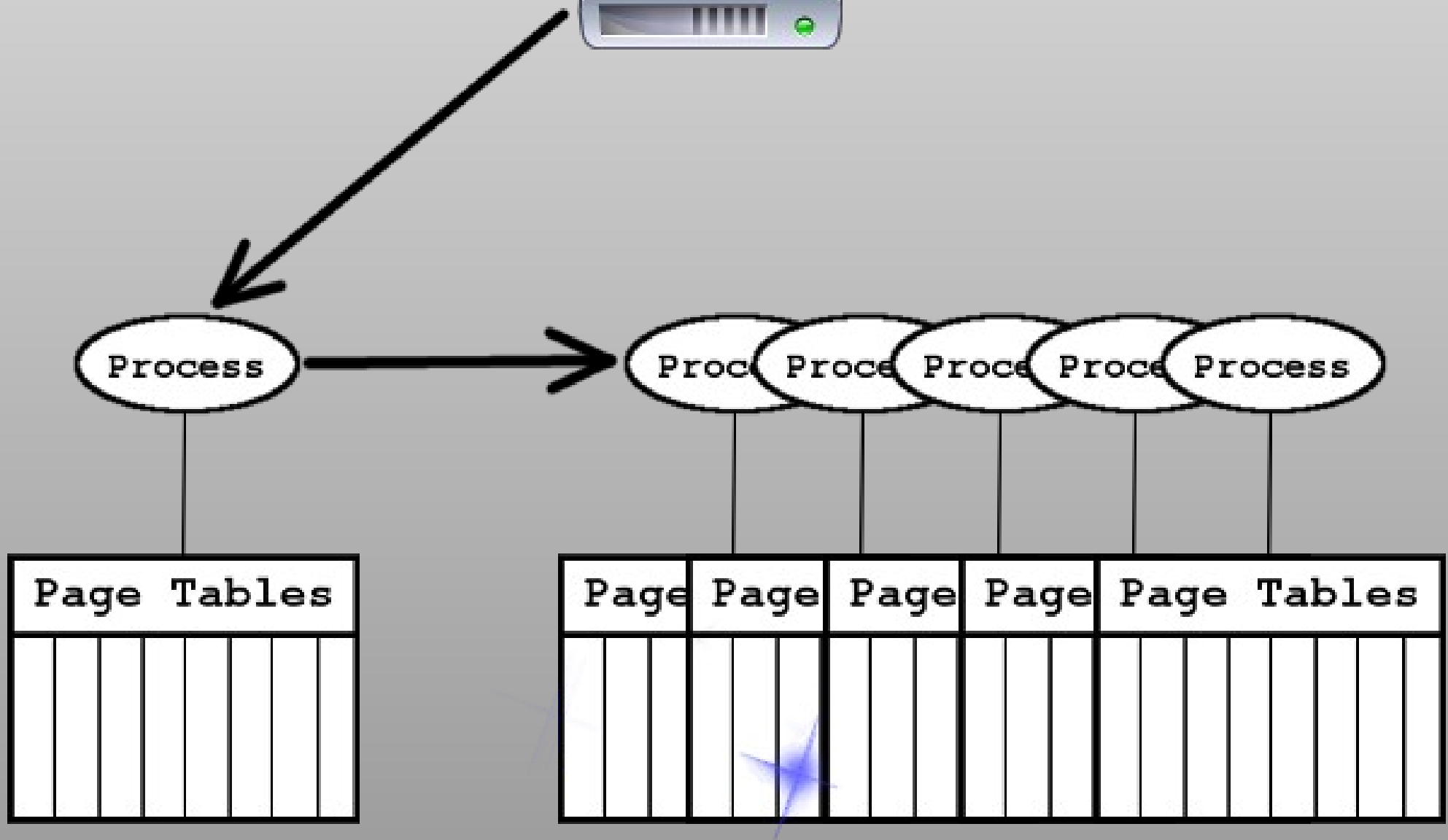
Process

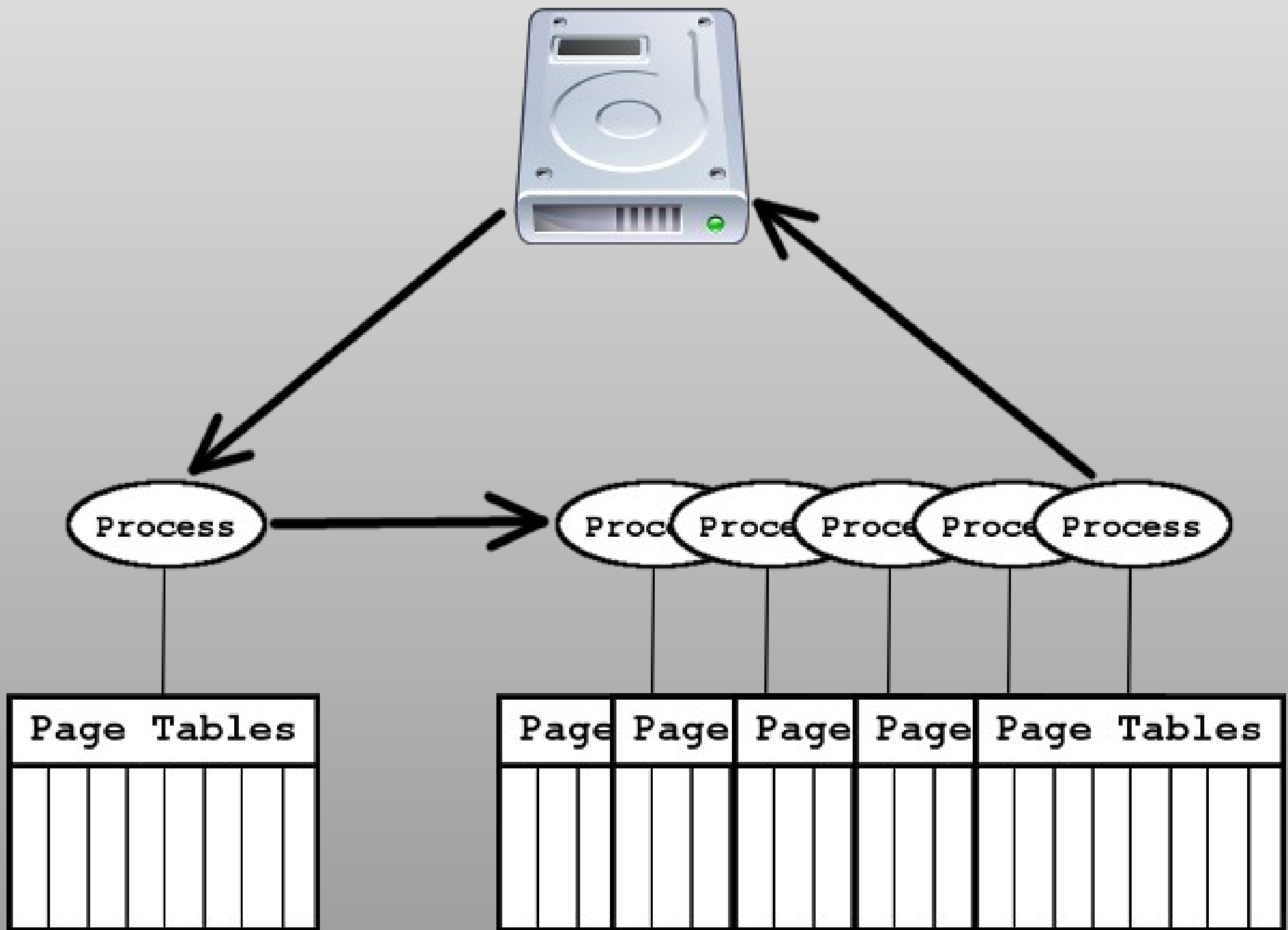
Page Tables							

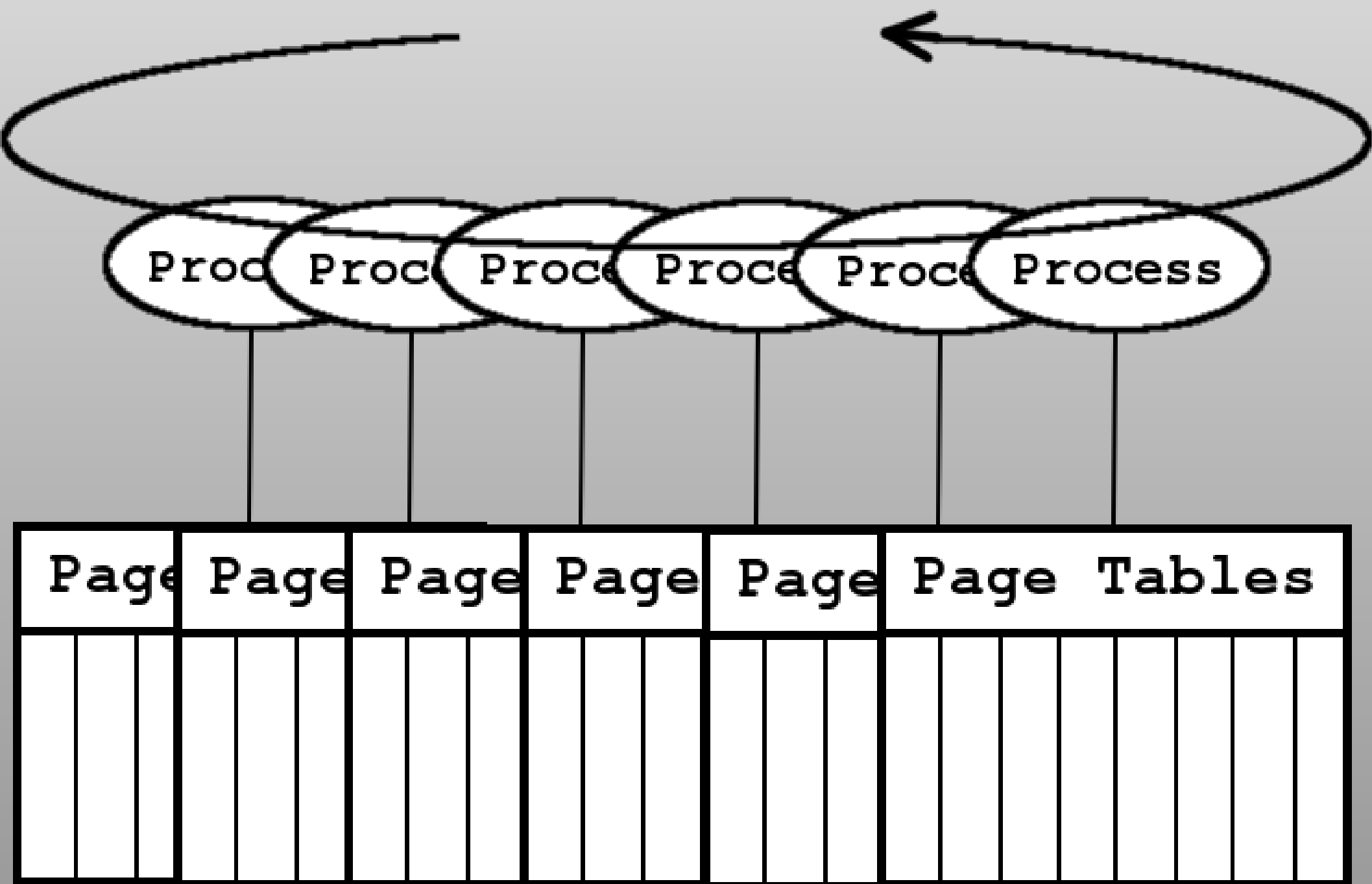


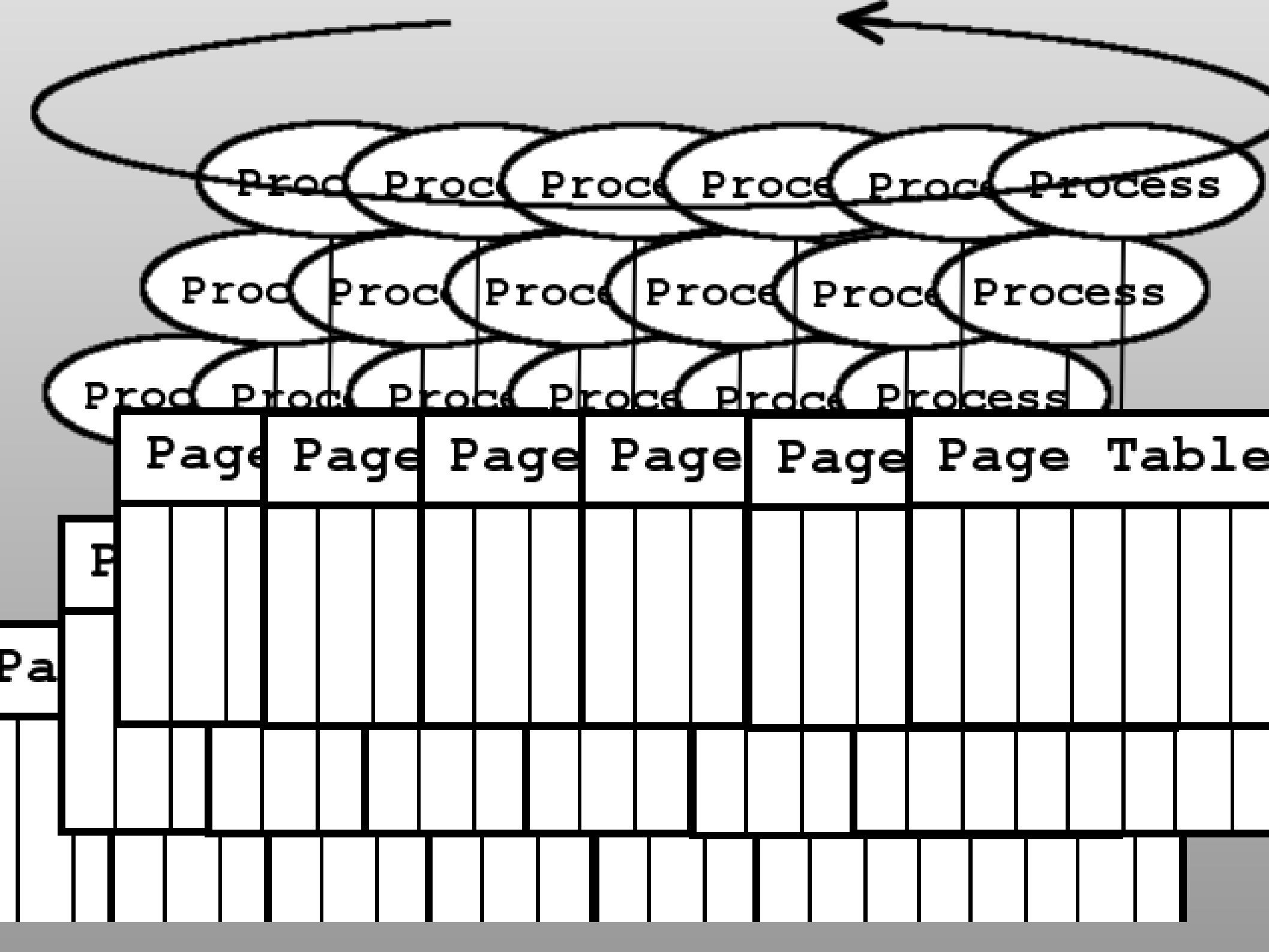
Process

Page Tables							

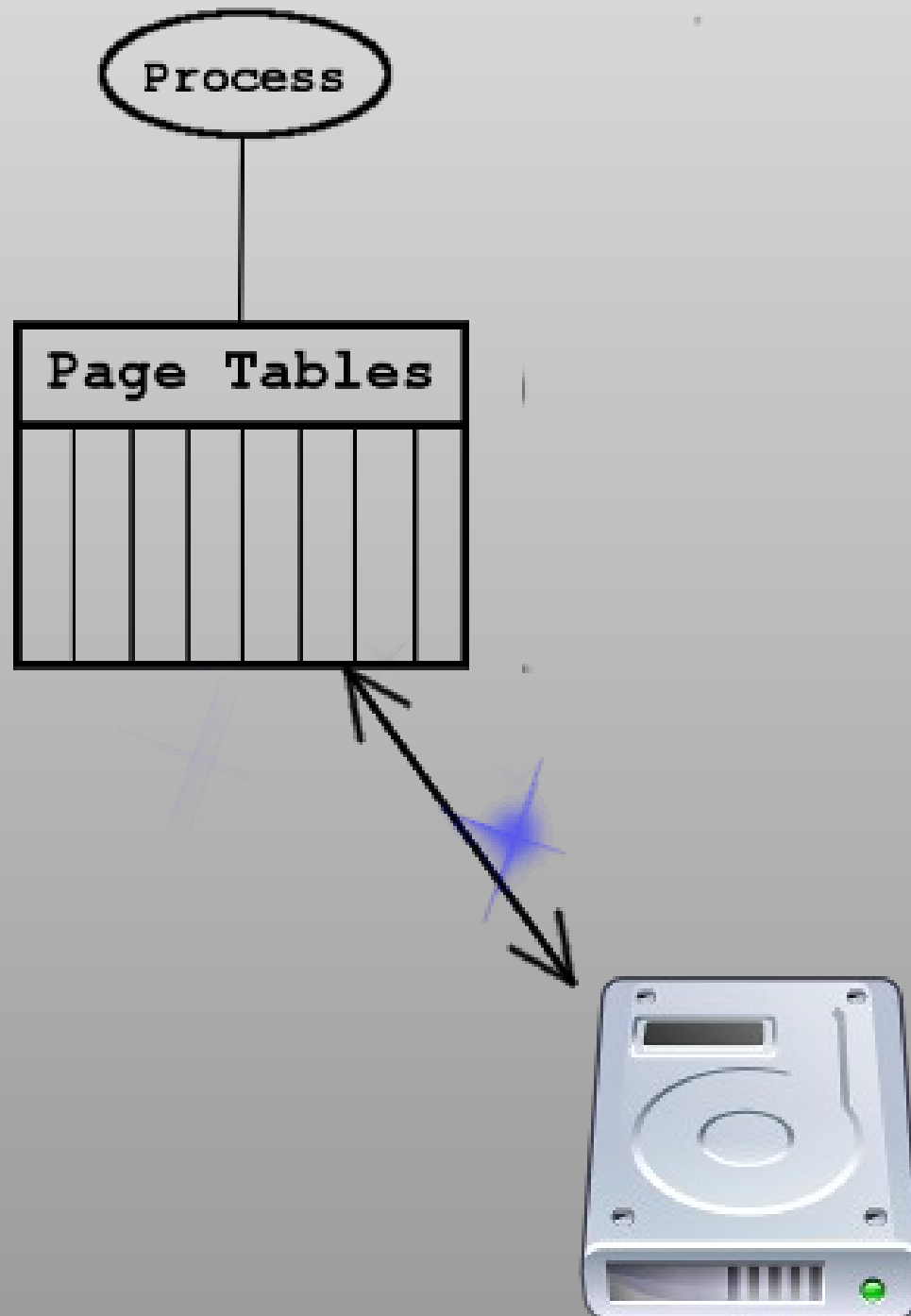


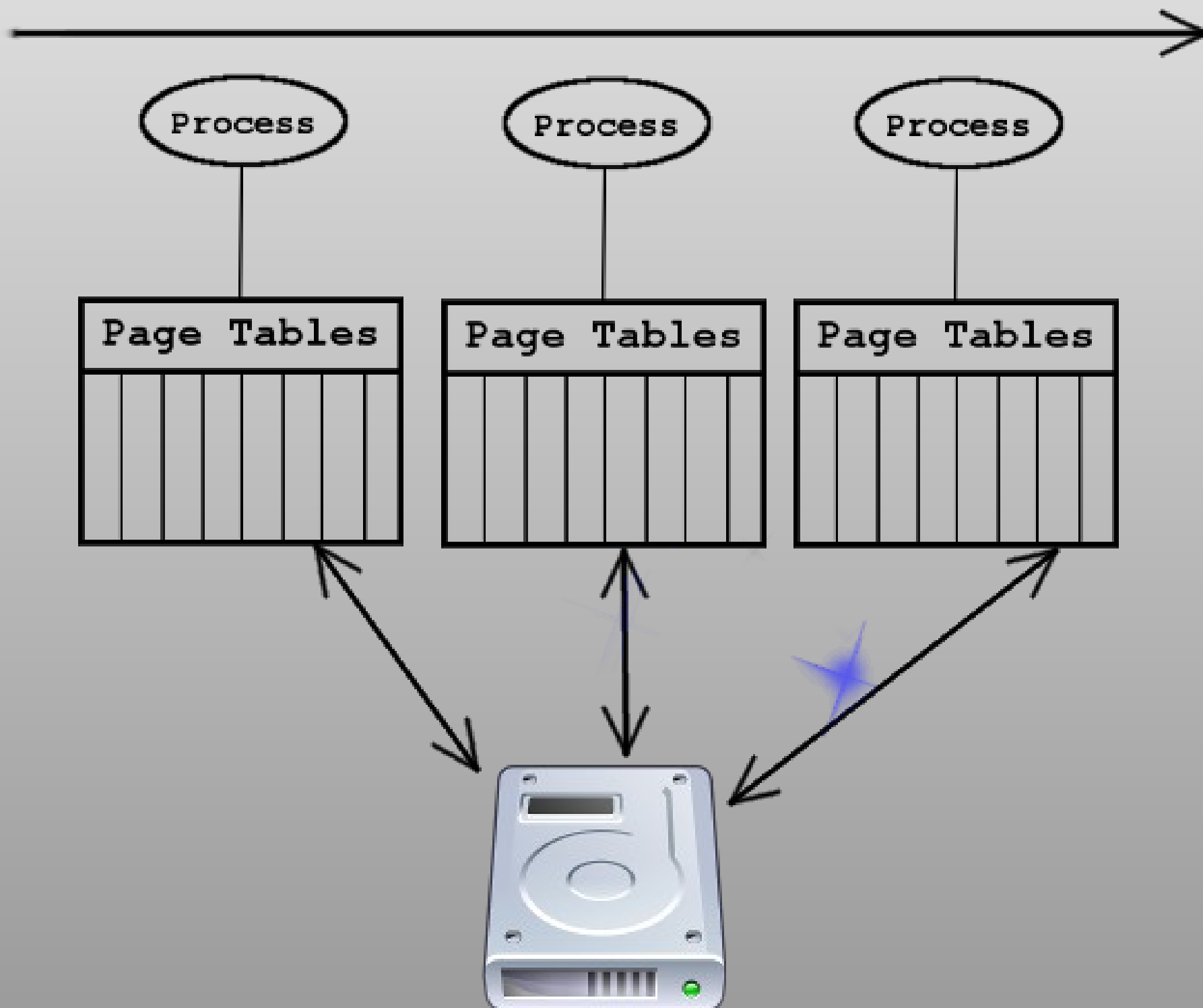






$$O(n^2)$$





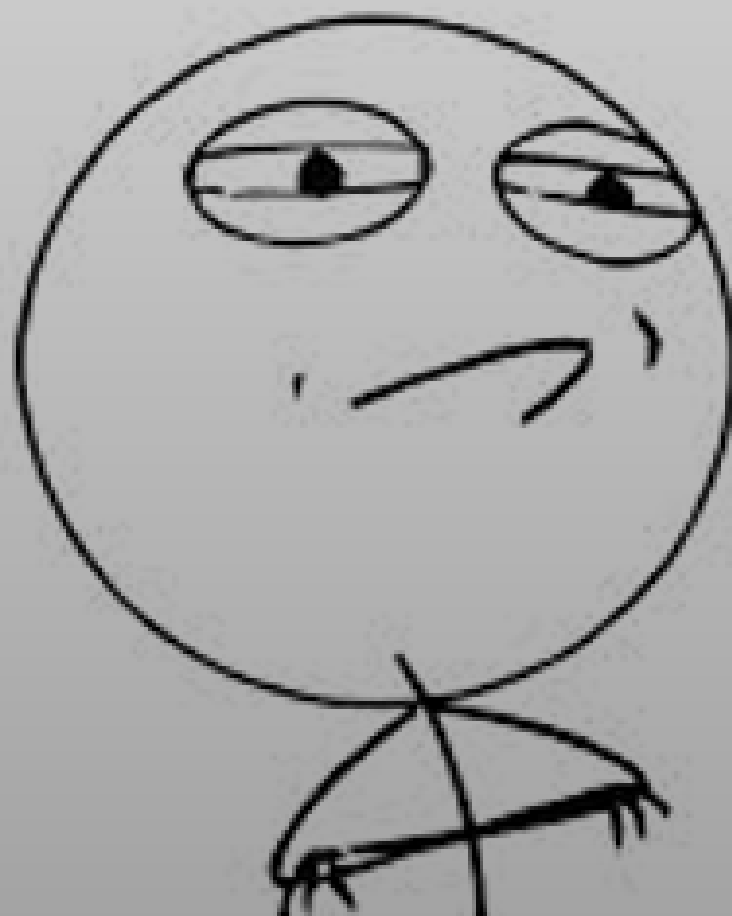
$O(n)$

**Re-write one of the kernel's
functions...**

**In three months,
with no experience...**

While refusing help...

CHALLENGE ACCEPTED



```
mem_cgroup_cache_charge(  
    page, current->mm,  
    GFP_KERNEL);
```

```
cond_resched();
```

```
gfp = mapping_gfp_mask(mapping);

if (!down_read_trylock(
    &mm->mmap_sem)) {

    BUG_ON(!PageLocked(page));

if (unlikely(maybe_same_pte(
    *pte, swp_pte))) {

    pte_offset_map(pmd, addr)

mutex_lock(&shmem_swaplist_mutex);
```

Surprise:

**I Set Impossible Goals for
Myself**

Solution:

**Don't Let the Perfect Be the
Enemy of the Good**



To: Kelley



From: Kelley's OPW Mentor

Subject: U there?

Solution:

**Accept that
No One Does it Alone**



From: Kelley

Subject: [RFC] Updated Swapoff



From: Kernel Developer

Subject: Looks Useful



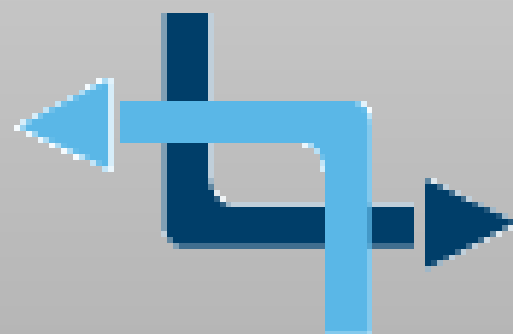
From: Famous MM Guy

Subject: Some Welcome Advice



From: Kernel Developer

Subject: Much Improved



LINUX FOUNDATION

Collaboration Summit







So, How Can I Help?

So, How Can I Help?

Answer questions

So, How Can I Help?

Answer questions

Join a formal mentoring program

So, How Can I Help?

Answer questions

Join a formal mentoring program

Make friends

How can I help my mentee?

How can I help my mentee?

*Answer questions,
make suggestions*

How can I help my mentee?

*Answer questions,
make suggestions*

Draw them into the community

How can I help my mentee?

*Answer questions,
make suggestions*

Draw them into the community

Lend a hand with personal obstacles

**What kinds of personal
obstacles?**

What kinds of personal obstacles?

Health issues

What kinds of personal obstacles?

Health issues

Toxic relationships

What kinds of personal obstacles?

Health issues

Toxic relationships

Isolation

Questions?

Be Awesome :-)

gnome.org/opw

wiki.gnome.org/OutreachProgramForWomen

google-melange.com

Linuxfoundation.org

Kelley Nielsen

www.salticidoftheearth.com

@salticidsoft