Transforming Tribal Knowledge into Learning Trees

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UNIVERSE

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2
That song which I just played is called ▶"Begrüßung",
which means "Welcome" in German.
It is typically played at the beginning of a hunt to welcome all hunters.

We welcome you today to our Hunt for better ways
to share localized knowledge within our work teams.

▶ SOUND Speaking of hunts, recently I found myself deep in a forest,
▶ SOUND surrounded by a family of squirrels called a "scurry".

As I looked up at all the trees I realized that …

1 Squirrels are some of the best accidental developers in the world.
Squirrels develop forests!

If only they could remember where
they put their building materials …

▶
As this little guy chewed on my boots he told me his story about
Squirrel Works.

I think there are a few things that we all might learn from him …

Things were chaotic at Squirrel Works!
The developers scrambled furiously to deliver their next products.
Many shook their heads and tails wondering how they'd ever meet their schedules.

As at SquirrelWorks, the most expensive part of our software development is the cost of developers!
Often enough, little is invested in helping us learn all the proprietary things we need to be productive.

As a result we too feel the crunch to deliver.

The developing forest had changed as a result of downsizing seasoned squirrels.
As its inhabitants rebuilt, there was fierce competition for scarce resources.
The owners of the forest expected business to go on as usual.

Have you ever been frustrated arriving into such a team?
You worked hard to keep up. But the rapidly changing systems and need to absorb tribal knowledge slowed your momentum.

Perhaps you also were motivated to hunt for better ways to learn.

Despite this, there was much anticipation in the Squirrel Works scurry.

Poppy was busy finishing up a new RESTful interface
but excited and anxious as he awaited the news …

It's a Squirrel! What a proud Poppy!
Everybody, meet Zippy!

New kits were born several times a year.
Each time, the scurry was unprepared!

Like Baby kits, new developers on our teams are somewhat
Innocent and impressionable …
and we never seem to know when they will arrive!

1 Zippy, like all new kits, relied heavily on the scurry for care and feeding.
He consumed the already scarce acorns at a rapid pace,
just like developers grab every precious fact they can!

This was a big time drain on the older squirrels,
Especially considering that there were more kits to come with each litter.

As Zippy grew ▶️ he became a bit more self-reliant.
It wouldn't be too long before Zippy would be expected
to follow in Poppy's footsteps @ Squirrelworks.

1 Zippy soon learned that Acorns were more than just food.
Acorns are powerful nuggets of information.

They can be an immediate snack or planted to grow
strong trees that produce even more acorns.

In the same way, our development knowledge can be planted
And grown into learning homes, which produce abundant
Acorns to feed the squirrelliest of developers.

Squirrel's teeth never stop growing.
They must cut their teeth on acorns to stay healthy.

Like developers, by nature Squirrels are constantly craving
something to cut their teeth on or they'll go crazy!

As developers, cutting our teeth helps us to master our craft and be self-reliant!

Some things are well known by all scurries,
but as Zippy grows and asks questions specific to his world…
He discovers that these acorns aren't so easy to find!

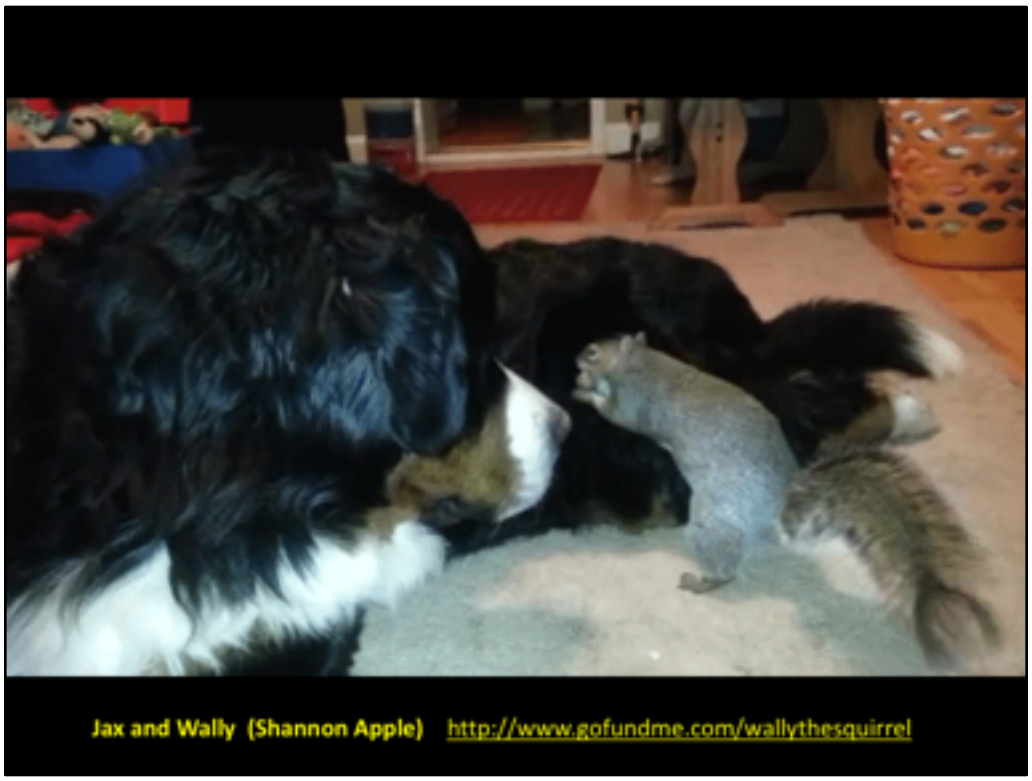
As Developers we need similar acorns of knowledge to do our work.
Sometimes, like Zippy, we don't know whom to ask for help.

AUDIENCE: Curious, what kinds of acorns are you typically looking for in your own forest?

I've been on hunts for:

- How things work in the application domain …
- Elusive architecture diagrams
- Coding standards,
- release steps,

the list goes on.



Zippy watched the older squirrels
bury their acorns in all kinds of strange places.

Their intentions were good in storing them …
but these places aren't conducive to their purpose!

AUDIENCE: Which places are your teams using to store information?

- email,
- SharePoint
- Google Drive
- Jive,
- Wikis How are those working out for you?

1 How long do you think it takes Zippy to find his Acorn answer here?
I'll save you and Zippy some time. ▶
Zippy hunted for acorns in Email, which tended to be
a popular Squirrel way of sharing knowledge.

How many times have you received an email containing an answer,
yet don't remember where you put it?

How many times were you *sure* you sent an answer to someone else,
yet couldn't find it when they ask about it?

Zippy realized how quickly these answers became obsolete as well…

1 One day Zippy spent an hour hunting for an acorn.

When he found one, he spent another 30 minutes cracking it open…only to find a nasty weevil!
Acorn weevils burrow into acorns and eat the insides.
▶️
There wasn't anything useful left.
This actually happened to him a lot…wasting his time and energy.

Time and constant environment changes eat away at information like a weevil.

Frustrated, Zippy thought he'd ask other squirrels for help.
Zippy's first search for help in getting acorns was unfortunate.

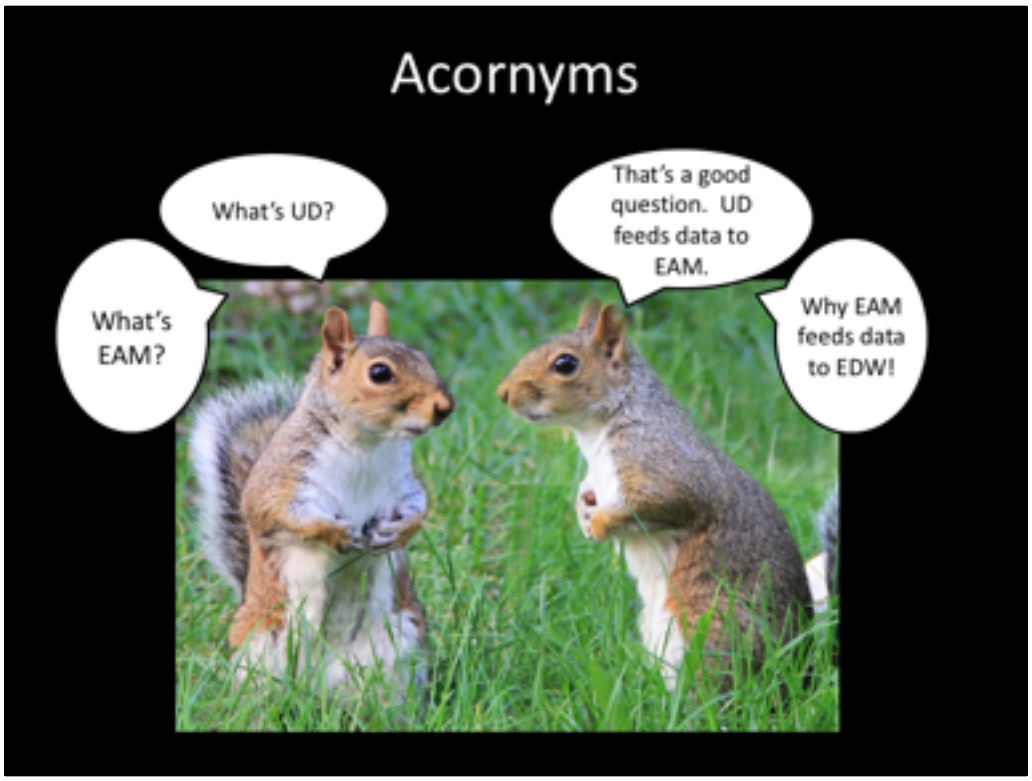
He quickly found some squirrels will fight to death over their territory.
Zippy was scared to approach these guys and
could never take advantage of any useful acorns they might have.

Know any squirrels with big heads?

Zippy found some squirrels who only shared
if it improved their prowess amongst the others.

Unfortunately they don't realize
that sharing their prized acorns with EVERYONE
would greatly boost their standing!

1
Finally Zippy went to seek the most senior squirrel,
but she was always too busy and hard to find ▶️
Even when she was actually available.



4
Sometimes Zippy got answers that didn't help him at all.
⏩
These are real life examples of
Internal Acornyms…⏩ jargon…⏩ shop talk.

These are technically acorns worth keeping…
but they're disguised in terms that not everyone understands…
especially baby squirrels!

After almost seeing his mentor
in a close call with a Lamborghini ….

Zippy was amazed at how much the scurry relied
on these methods of sharing acorns.

Every squirrel needs to feel competent.
Zippy was no exception.

Sometimes the gap between here and there seemed impossible.

The gap b/w what you know and what you need to know is too wide.
It feels like you never will be able to get to the other side…

A squirrel (or developer) shouldn't have to fill the gap with themselves.

Zippy felt left out in a desert of incompetence and waste
with no water or acorns to sustain himself.

Small efforts felt momentous.
His work was more expensive.

It took longer to finish because
he spent so much time and energy
looking for what he needed.

Somebody help!!

Frustrated, Zippy wanted to find a better way…
he wanted to help and make things easier for his scurry.

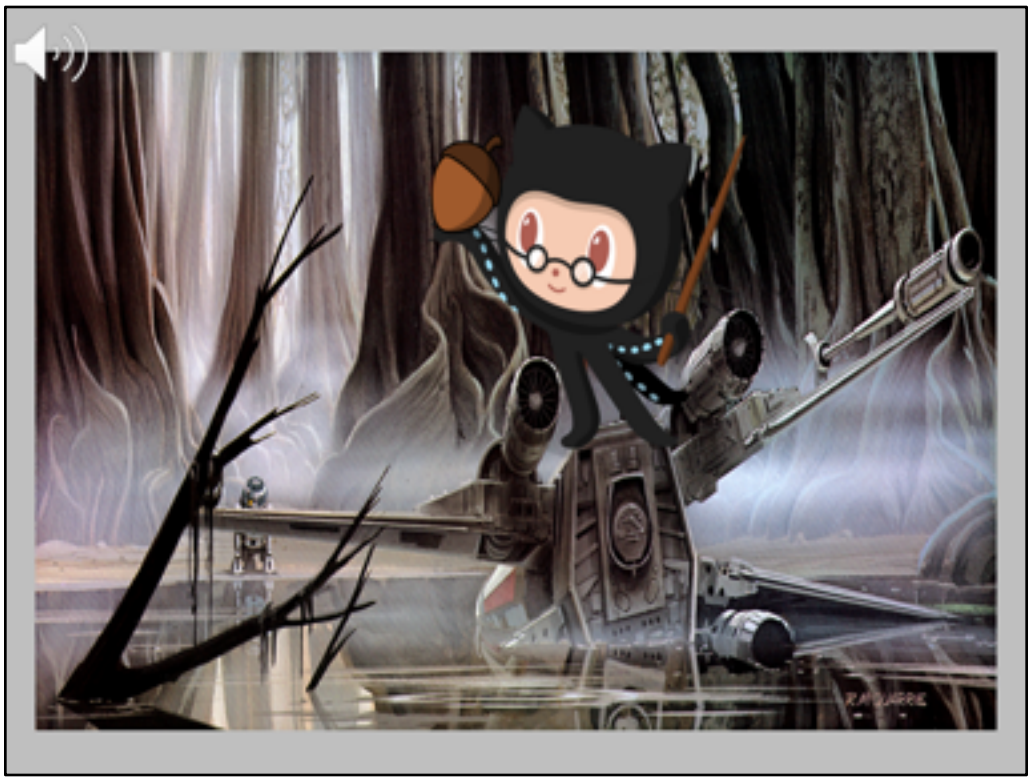
He decided to take a walk to
clear his head and think about things.

On his walk, Zippy met a Contractor squirrel named Rocky
who was from a faraway scurry.

As they talked about where they were from,
Zippy confided his troubles to his new friend.

Rocky was very excited to tell Zippy
that they once had the same problems, but not anymore!

“Come with me” Rocky said,
“I want to introduce you to someone!”

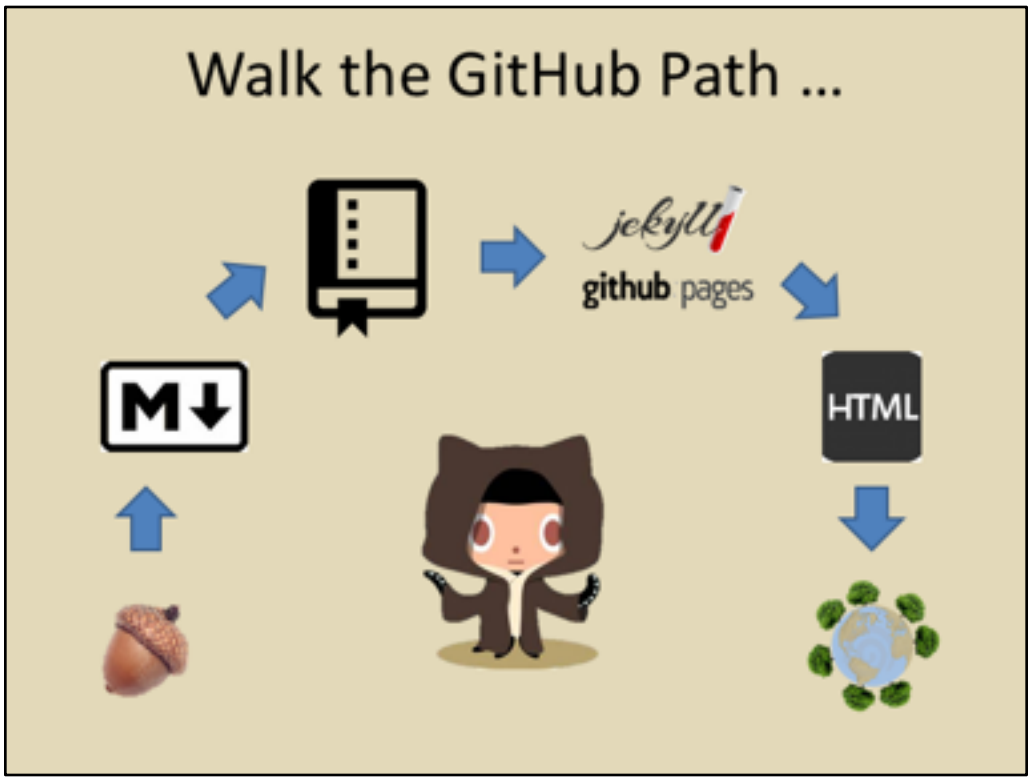


1 Rocky introduced Zippy to Octocat.

Octocat taught him about a better way to store and manage acorn answers.

AUDIENCE: does anyone know this cat?
Ah yes then you might know some of our story

But you might also know him as ▶...



6
"Octobi Wan Catnobi".

“Zippy, You need to follow the path to GitHub. ▶️

GitHub provides a place to store and manage acorn content
using the same process which humans use for building software.

By creating ▶️ content using the lightweight ▶️ Markdown language and
storing it in a ▶️ Repository,

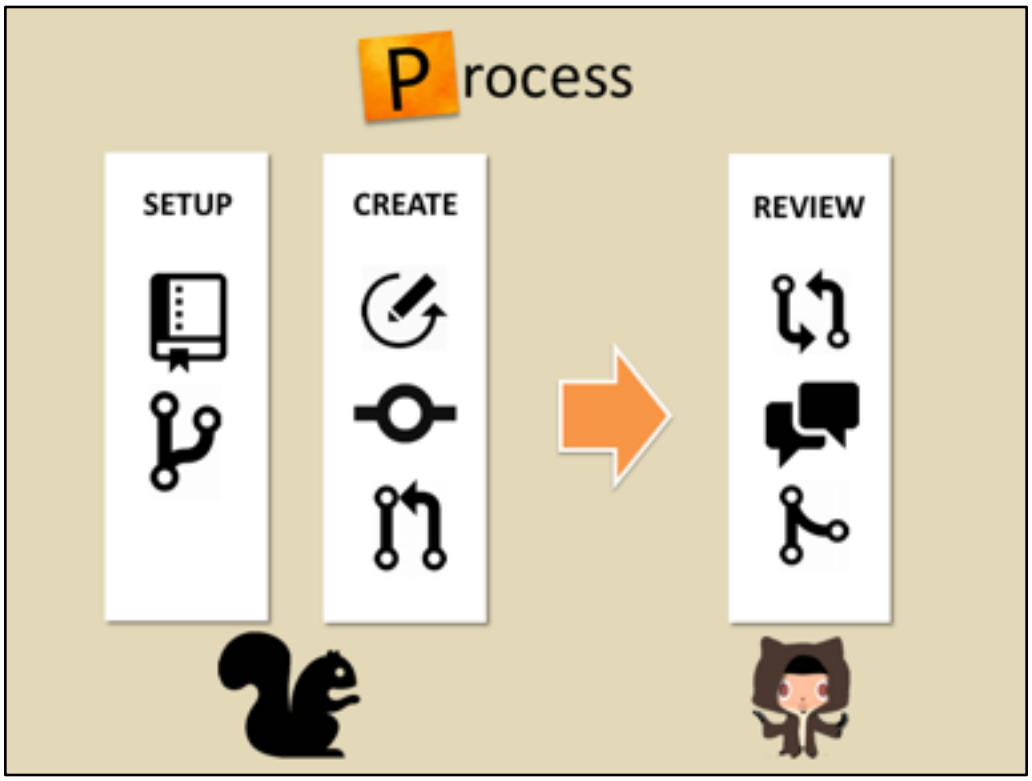
▶️ Jekyll transforms these Answer Acorns into
an ▶️ html forest
of ▶️ beautiful learning trees

2
Zippy: The GitHub Path?

“Yes Zippy, You need to follow the path to GitHub.

I have an easy way for you to remember:
If you do these things you and your teams will ▶️ be more ▶️ PRODUCTIVE!

Zippy follow me closely as we begin our journey.



5 1 0 The Process for getting content into GitHub is easy.

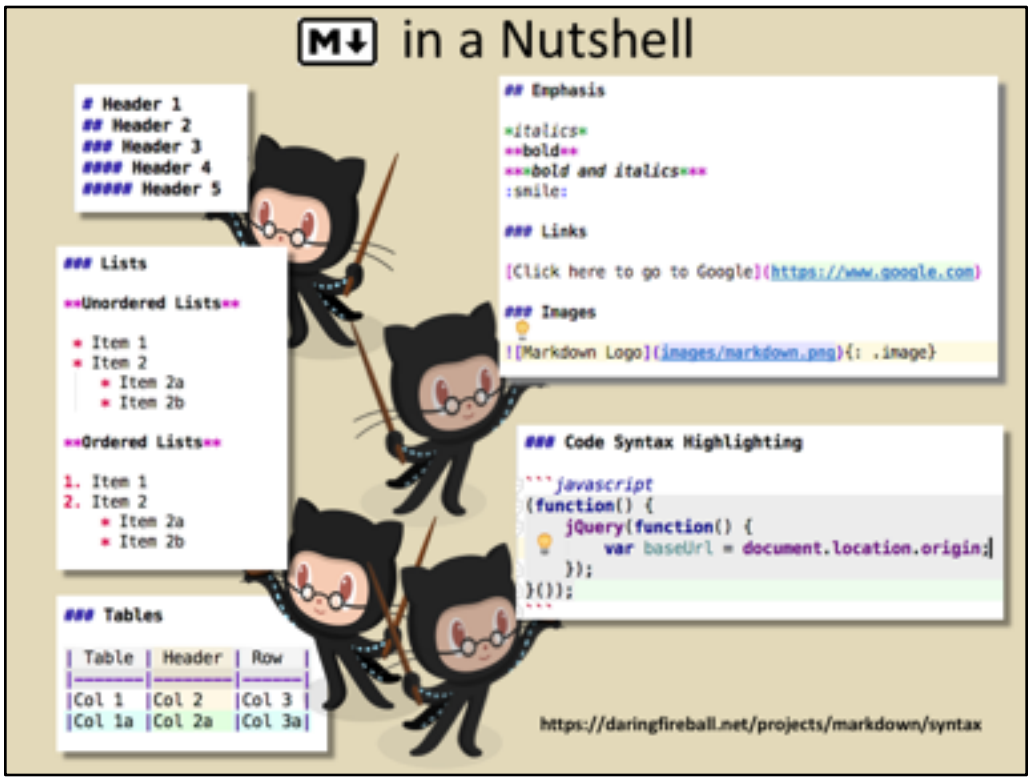
First **setup** a Repository and Fork your own copy.
Then **create** content in Markdown.
Commit into your Fork.
Create a Pull Request.

Peer review differences and communicate your ideas.

Once everyone agrees that the changes are good
merge them into the Repository.

This process is strong on communicating and reviewing content!

- 5 ▶️ Why use Markdown?
  - ▶️ Frees you to focus on content instead of html.
  - ▶️ Format can be easily compared.
  - ▶️ Historical record shows you all changes made!
  - ▶️ Lint content to ensure everything is in the right place.



4 5 Markdown:

- **for structuring content:**

like Headers, which can be used to build a TOC

- Lists

Tables

for Basics –

- Bold, Italics, Underline, Strikethrough, emojis

Links and Images

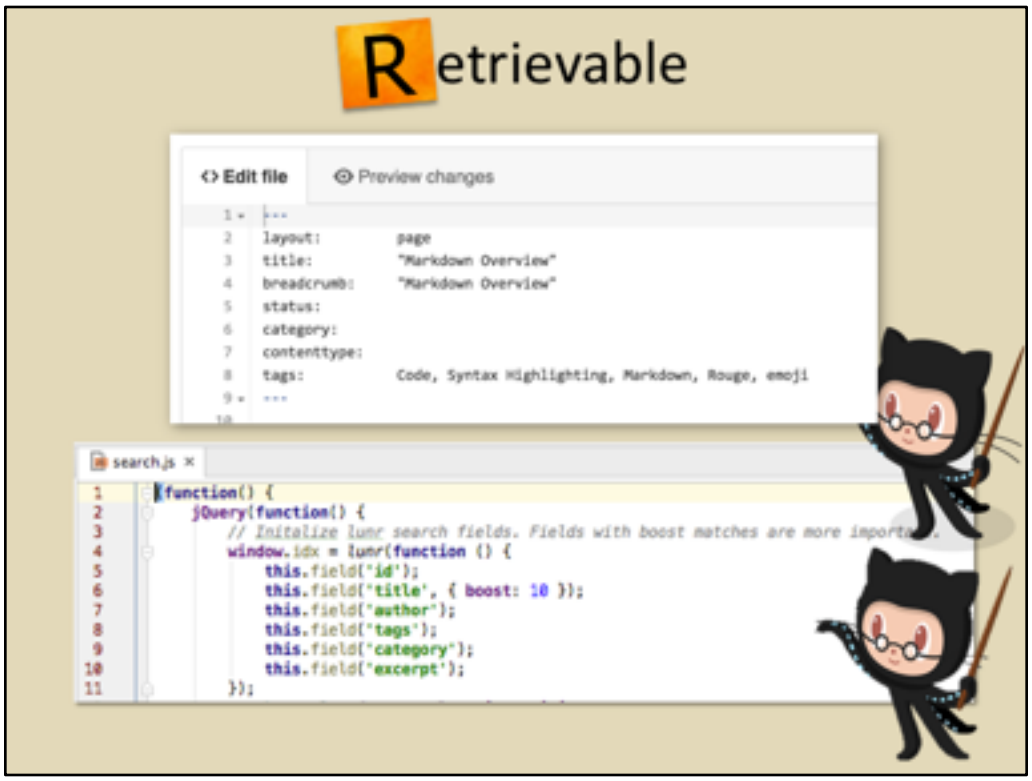
- **Syntax Highlighting for presenting source code**

- **Fireball site**

PAUSE
“Whoops, sorry Zippy, Octocat has been helping a pack of hunting dogs and included the wrong slide.”

“Anyways, putting all of this stuff into a repository isn’t helpful unless the acorns are Retrievable once they go into the forest.

You want a mechanism for allowing squirrels to be able to find the acorn that they need quickly.”



2 “By adding ▶ information called “Front Matter”
to the front of each Acorn’s Markdown,
you can use it to help with searches.

Jekyll and GitHub Pages use FrontMatter
to build a smart index for search.”

This data can contain Title, Tags or anything a squirrel might want to add.

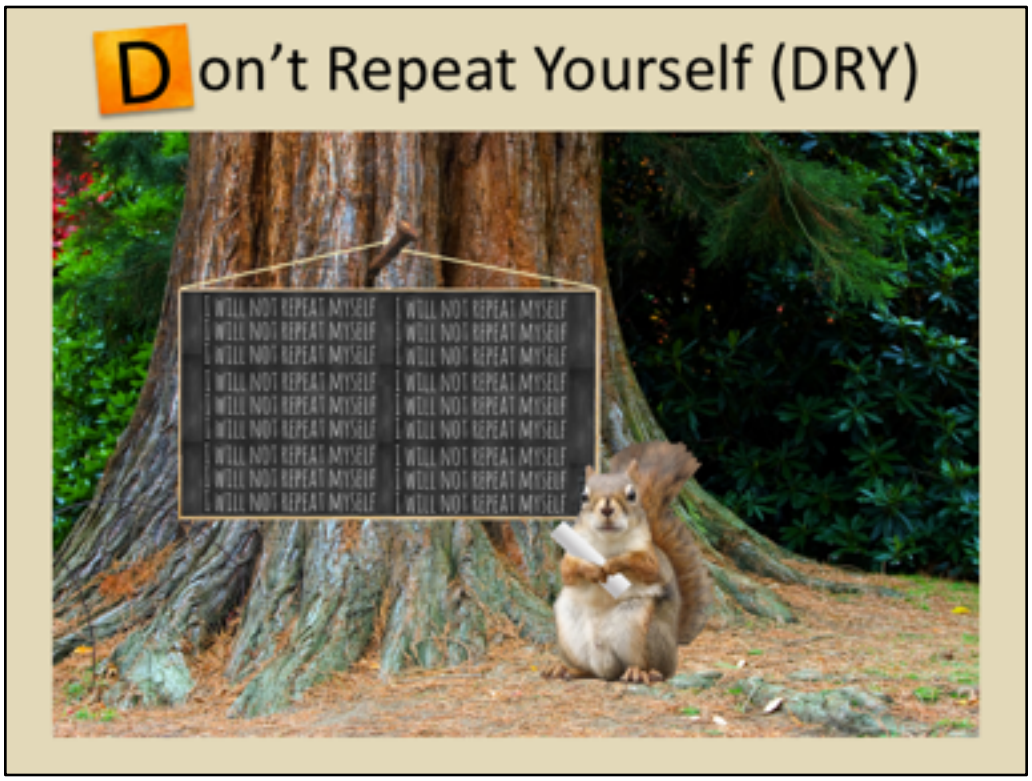
▶ The search index builder is configured to use these fields.

Zippy complained about having to look everywhere
for acorns stored willy-nilly.

GitHub helps with that by keeping everything in One Place.

Here acorns will grow into a forest of big oaks
for your scurry members to live and thrive.

Where you plant and maintain your acorns
impacts future growth and benefits everyone down the line.



Zippy, it is very important to remember!

Make sure that you don't add acorns that are already in the forest.
It is important for your content to be unique!!!

If something already exists, enhance it!

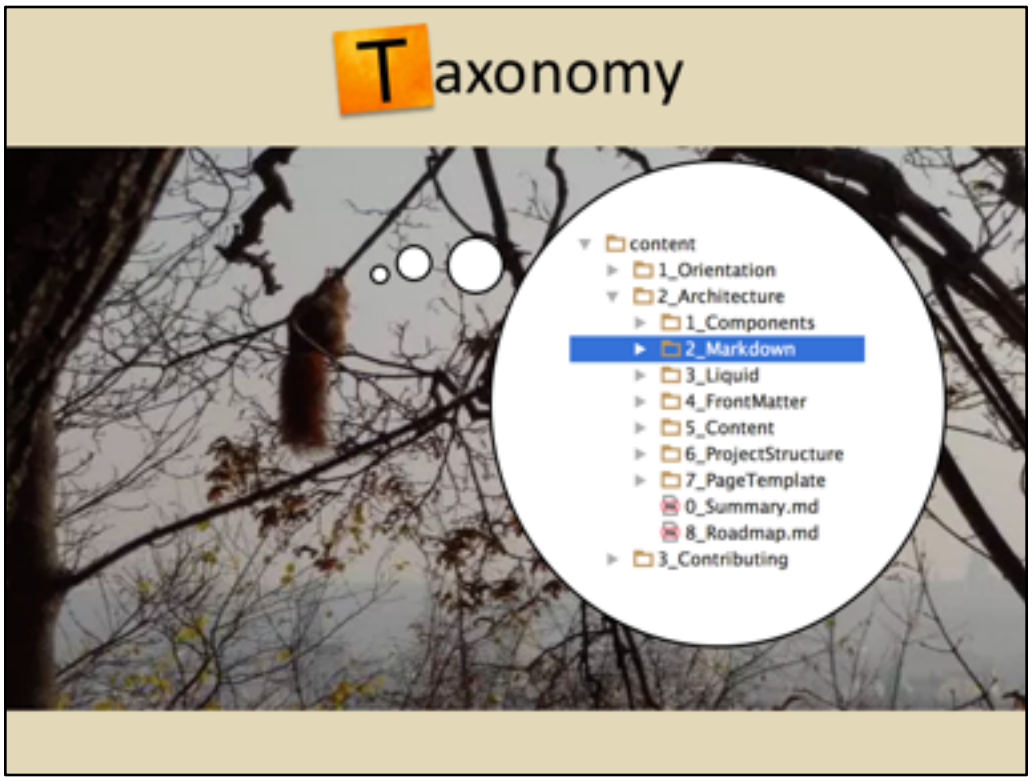
The most effective content will be simple and easy to read.
This has a lot to do with writing style and discipline.

Keep things short and comprehensive…
if your topic is getting too long,
break it down into its smallest components.

This is the art of working bottom up
to create the simplest, readable content!

1 Zippy started to walk ahead and exclaimed:
"Surely this is straightforward so far Master, it even looks easy!"

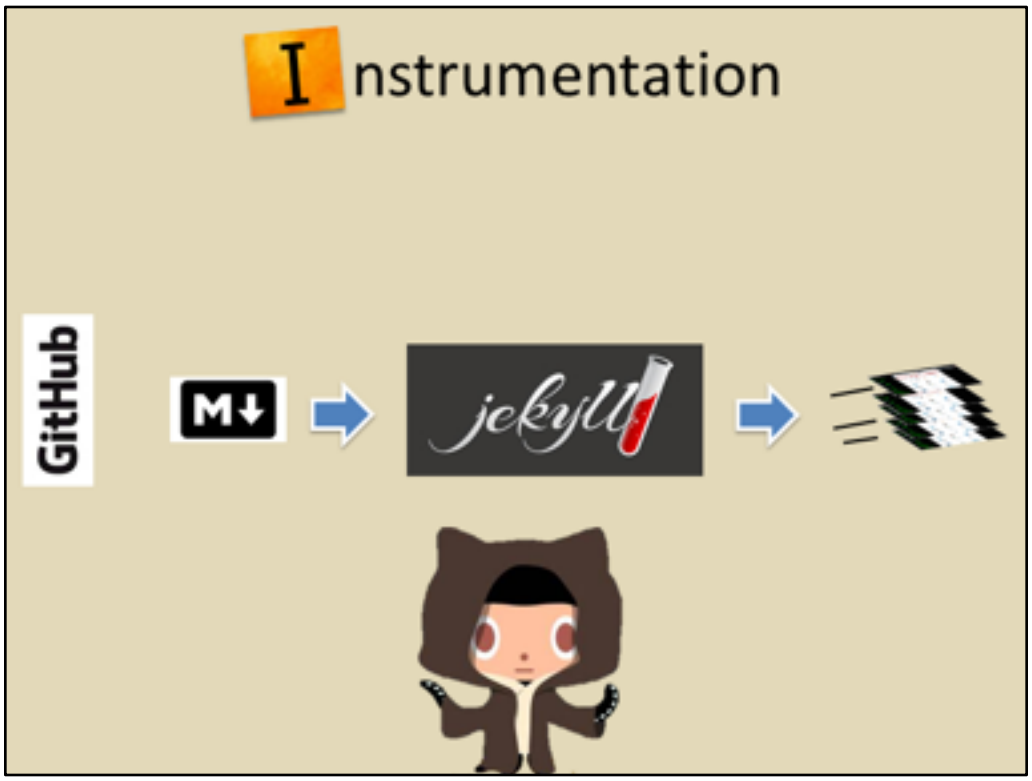
Octocat looked back in disbelief: "There is still much to learn young one."
"Culture Change will be a difficult, but necessary and very important part of making this whole thing work."
"Changing minds and hearts to different ways
takes other skills which you will learn."
"Keep communicating."
"Get others involved. Everyone owns the acorns."



1 “There are many acorns to gather and arrange. This might be overwhelming! Sometimes it helps to imagine all the acorns in the forest and how they fit together.”

“If this seems too hard, envision yourself in the tallest tree, on the highest limb. Look from the top down and arrange all the acorns in your mind according to which tree branches they really belong to.

“Then use naming to identify and order all your acorns into a Taxonomy which structures your forest.



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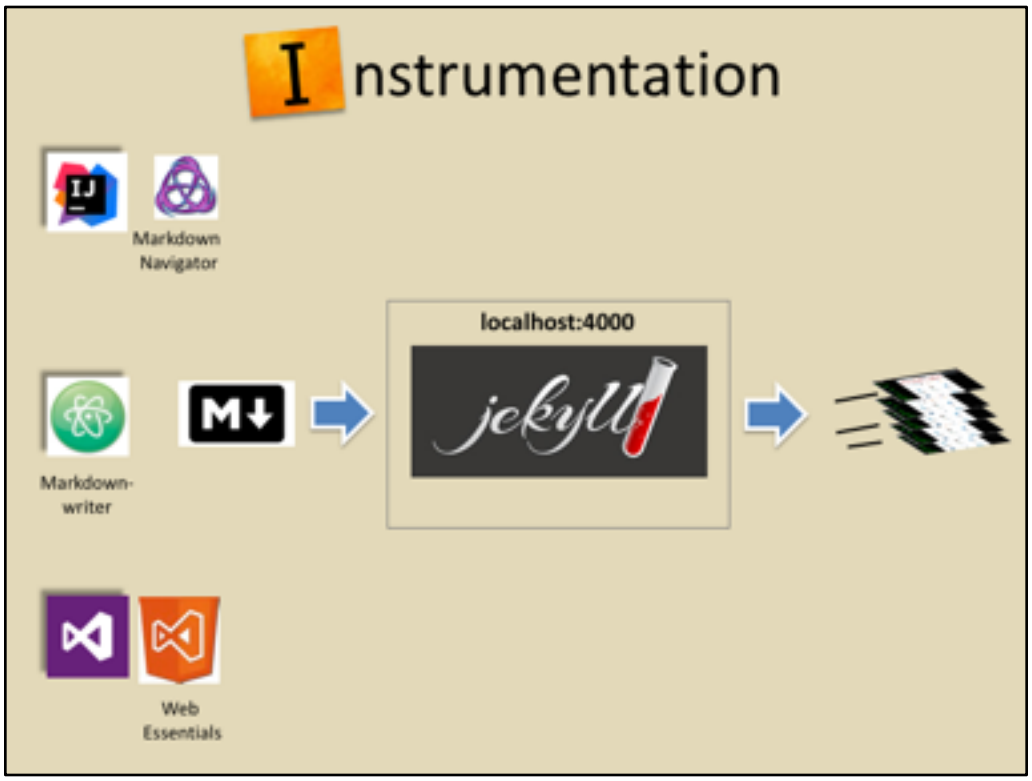
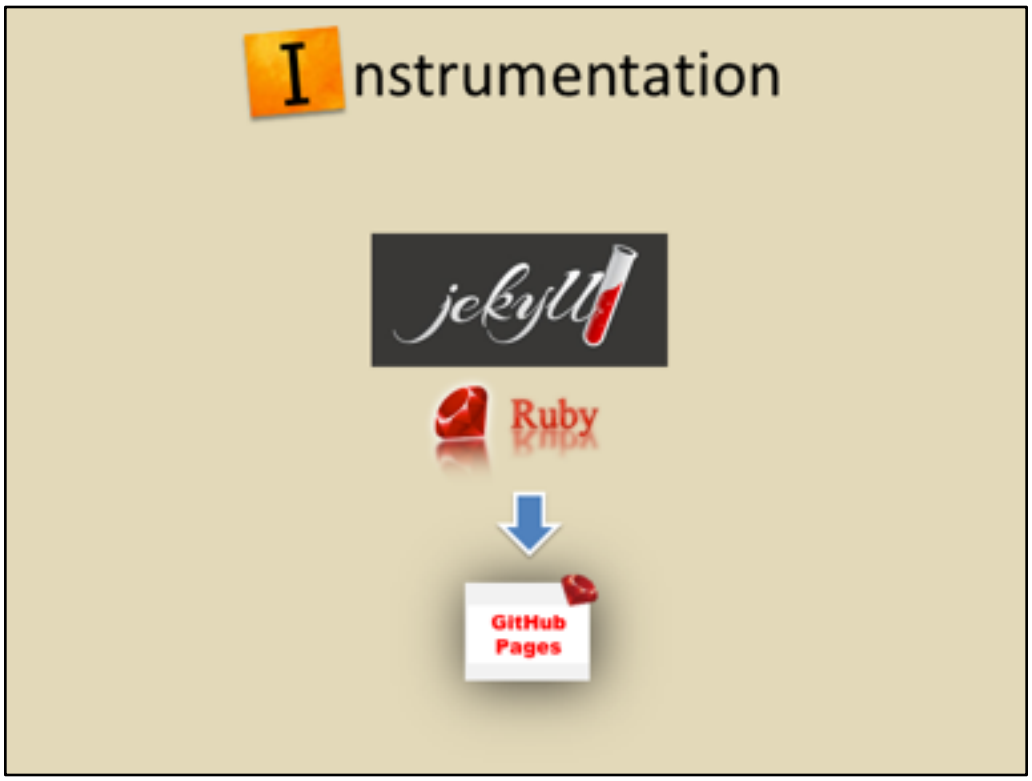


3 “Once you’ve mastered creating and committing your content acorns using Markdown and GitHub, there is more **Instrumentation** to explore!

Then use your

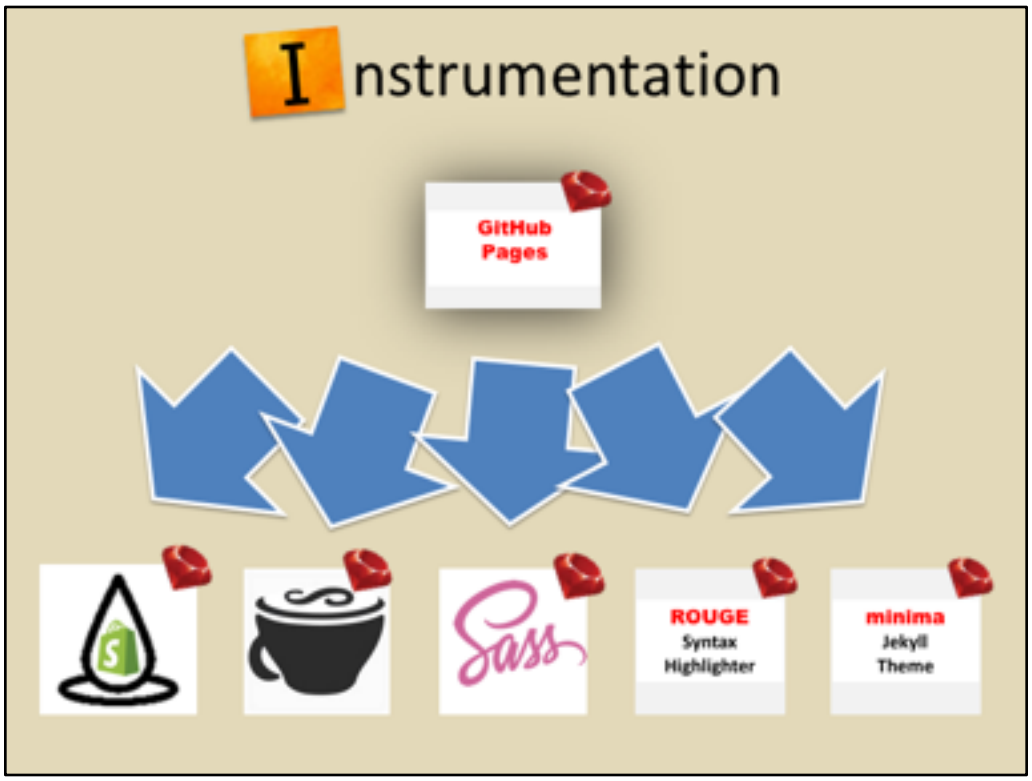


2 Beyond Markdown, there is much more to use in creating an awesome Jekyll site.

Jekyll is built upon Ruby, and luckily you can run without a religious conversion. Ruby functionality is packaged in Gems.

Github provides a **GitHub Pages Gem** which packages all Jekyll dependencies.

By adding this **GitHub Pages Gem** to your local environment, you keep current with the Jekyll product as it evolves!



4 The GitHub iPages Gem provides access to more gems which add functionality to Jekyll.

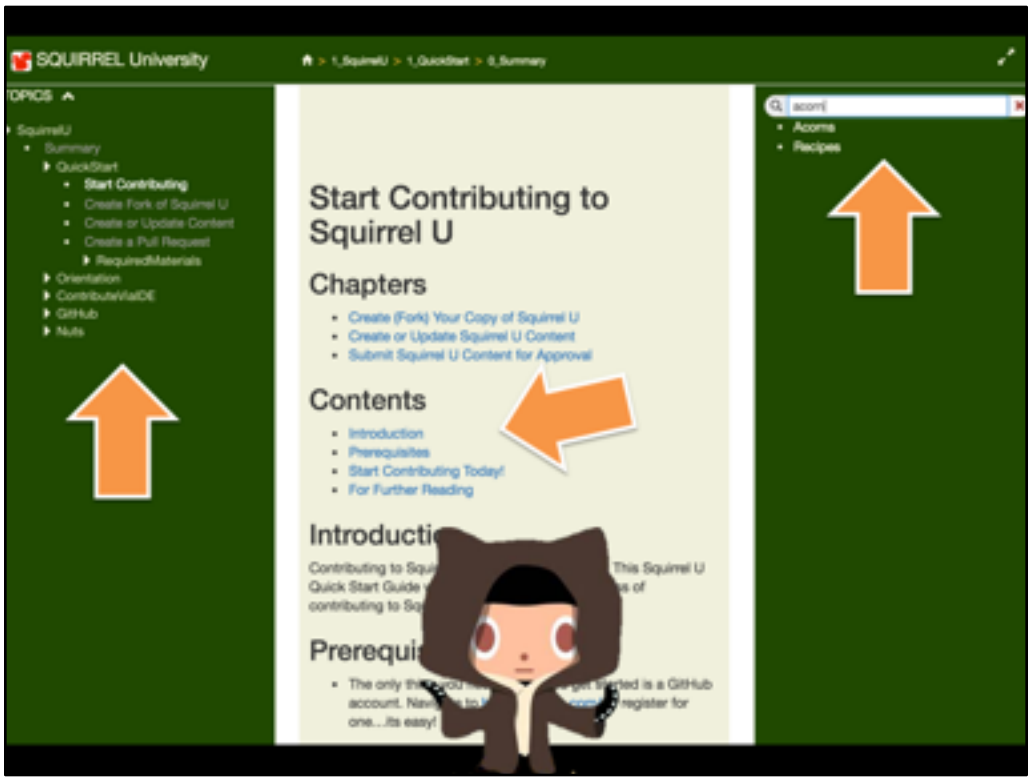
▶The Shopify **Liquid** gem gives you programming power to build content on your pages. Examples include content hierarchy, table of contents and page to page navigation sections for each page.

▶The **jekyll-coffeescript** gem lets you write Javascript more elegantly.

▶The **sass** gem allows you to style your site elements, tables and images more concisely.

▶The **Rouge** gem provides beautiful syntax highlighting for your code snippets which you can style with sass.

▶The **minima** gem provides Jekyll's default theme, which you can customize to your needs. Included in minima is Disqus support for comments and Google Analytics.



4 ▶ With Jekyll and your own creativity you can render stunning pages that contain:

- ▶ a Hierarchy,
- ▶ A speedy search index from your FrontMatter,
- ▶ a Table of Contents for every topic header

5 Zippy's eyes widened.
"That looks so amazing and easy Octocat, everyone will want to use this!!!"

Octocat sighed: "Maybe so, but any squirrel can use these tools to ▸add acorns of **LOW** Value."

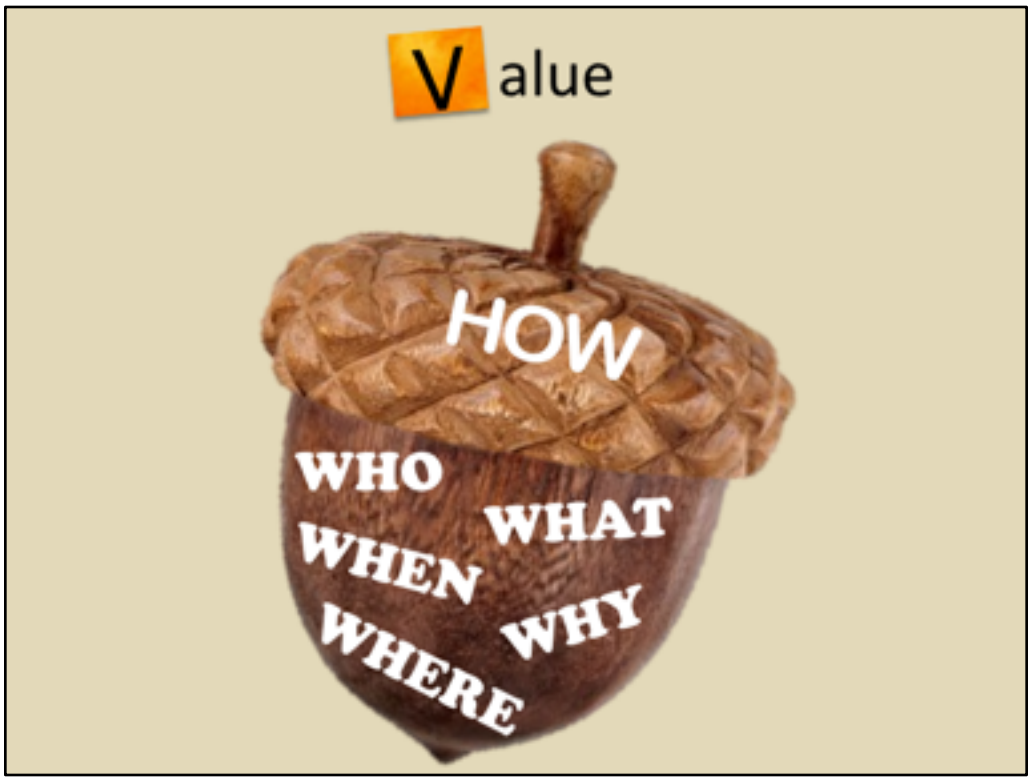
"Squirrels can be lazy and blind to what they already know.
This is called the Curse Of ▸Know▸ledge. They think that others ▸ already know what they know."

How many times have you read something or had something explained to you
as though it were the most obvious ▸ thing in the world…
only to be left more confused than before?

A little context goes a long way!

Zippy asked: What is context?

Octocat stretched out his arms to show that:
"Context fills the gap between what YOU KNOW and what other squirrels may NOT YET KNOW.



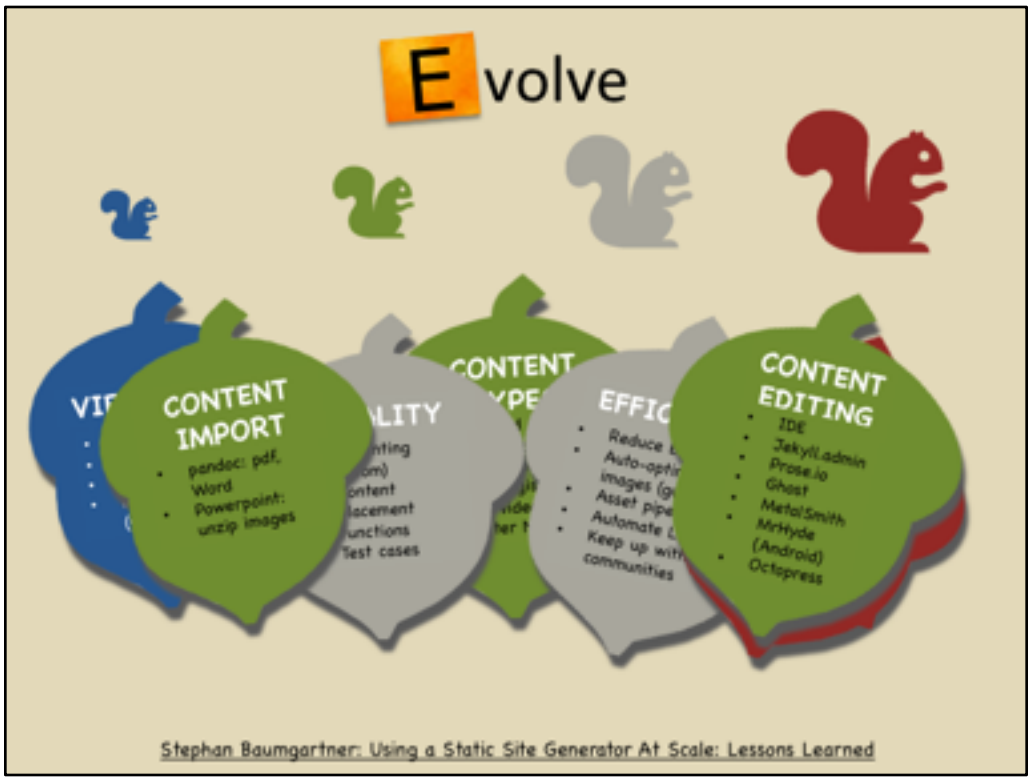
2 Squirrels are content to add the "HOW" part
but often leave out the most important part: Context!

"This is like finding only an acorn Cap and
calling it an Acorn. Yet it is not a complete Acorn!"

"What, Why, When, Where, Who" are
just as important as "How" and provide context.

Simply adding an acorn doesn't mean that the job is done.

We have to generate acorns that other squirrels can actually consume.
Context helps create complete acorns of true Value."



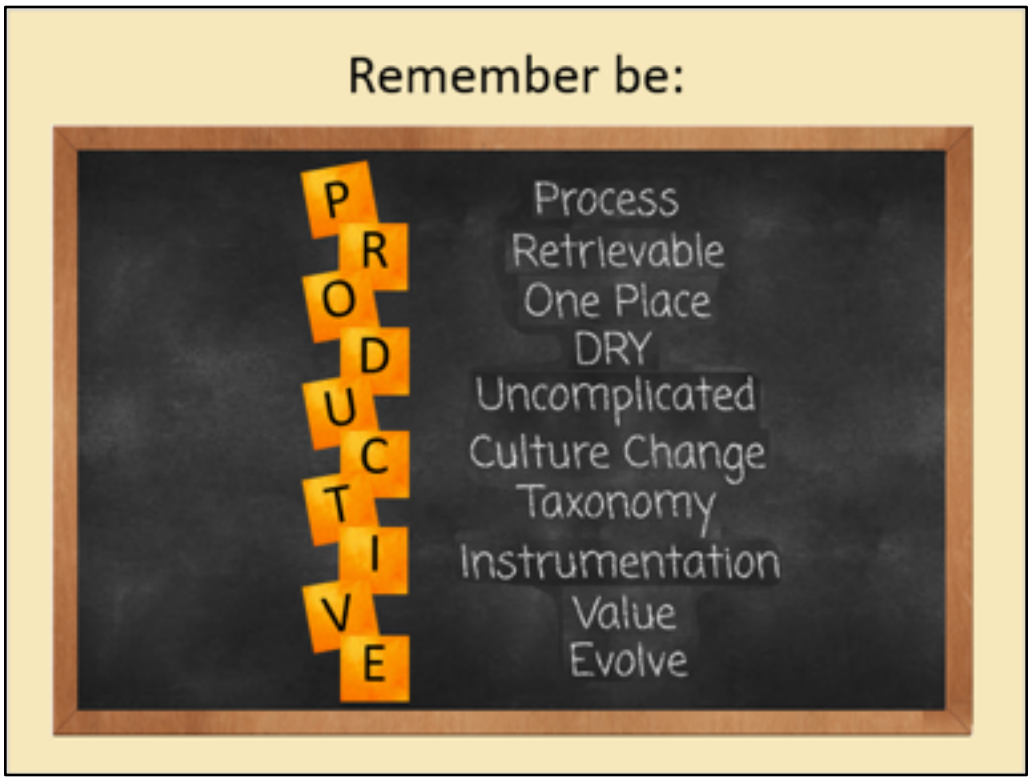
8 Zippy jogged ahead again:
“Master, I think that I am ready.”

Octocat remained motionless.
“There is one more lesson which you still must learn!

Don’t let your acorns rot and keep your forest pruned.
Your content and tools need to EVOLVE with the organization.

Here are some things which you might want to consider evolving …

▶Viewership - know and engage your audience
▶Content - find easier ways to add existing content; ▶explore new sources and ▶better ways to work
▶Quality - find ways to improve the quality of content
and ▶Efficiency - make the processing more efficient.
▶Repositories - you will find other repositories … keep info in the right place, bring it all in.
▶ reference



1
We've just covered some really important lessons Zippy. We learned that …

VISIT EACH ONE

Finally, Octocat smiled: "If you follow these lessons, you will be PRODUCTIVE!"

Zippy returned to his scurry, very excited to share his new ideas!

Everyone else seemed skeptical…
after all, they'd always done things the same way.

Tribal ownership was a very strong force to overcome.

1 But Zippy persisted, remembering what Octocat had taught him.

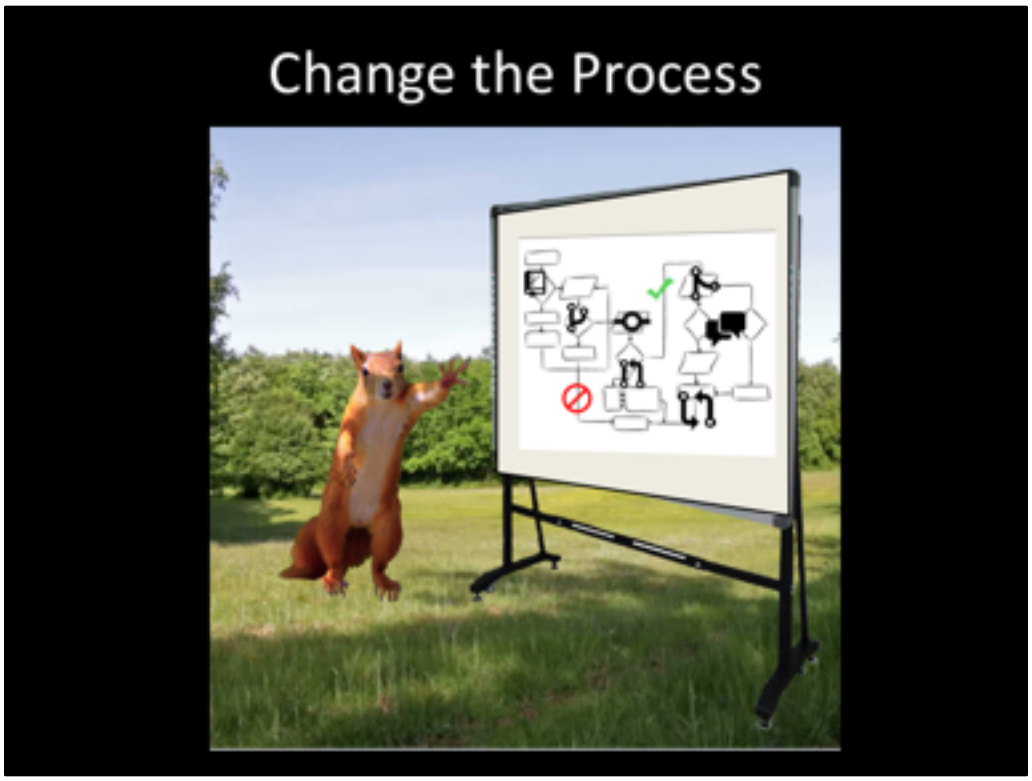
He wanted to create a learning forest and call it ▶️ "Squirrel University".

Slowly but surely, he started working through the barriers.

First, Zippy made it a point to get management's backing.
With their help and support…the transition would be much easier.

Depending on your management types,
this could be your biggest challenge.
Hopefully it is much easier than this!

AUDIENCE: Would this be supported for your teams?



After gaining his manager's support,
Zippy added his new learnings into their process.

Zippy and his managers made these changes official and
broadly communicated the expectations to the scurry.

No longer could scurry members continue to
do things the way they always had.

Now when things changed during a Squirrel Sprint,
Team members were required to update those acorns in Squirrel U.

Zippy knew that he couldn't do this by himself.

He observed that the Grey squirrels in his scurry
were the best leaders in planting acorns.

They instinctually contributed to growing trees of knowledge in the forest.

However, because there wasn't a designated place for planting them,
the acorns often grew in the wrong places or were forgotten.

Recruiting the Grey squirrels to plant their acorns in Squirrel U was
a key to getting the forest started and beginning to thrive.

The other squirrel breeds copied the Grey squirrel's habits and efforts.

Attribution: Funnystack.com pg 9 Spider Man Funny Squirrel

Zippy is eager to share this video of a TED Talk
by Derek Sivers on starting a movement…
this entire process is depicted in less than 3 minutes.

It seemed to describe exactly how his experience had gone.

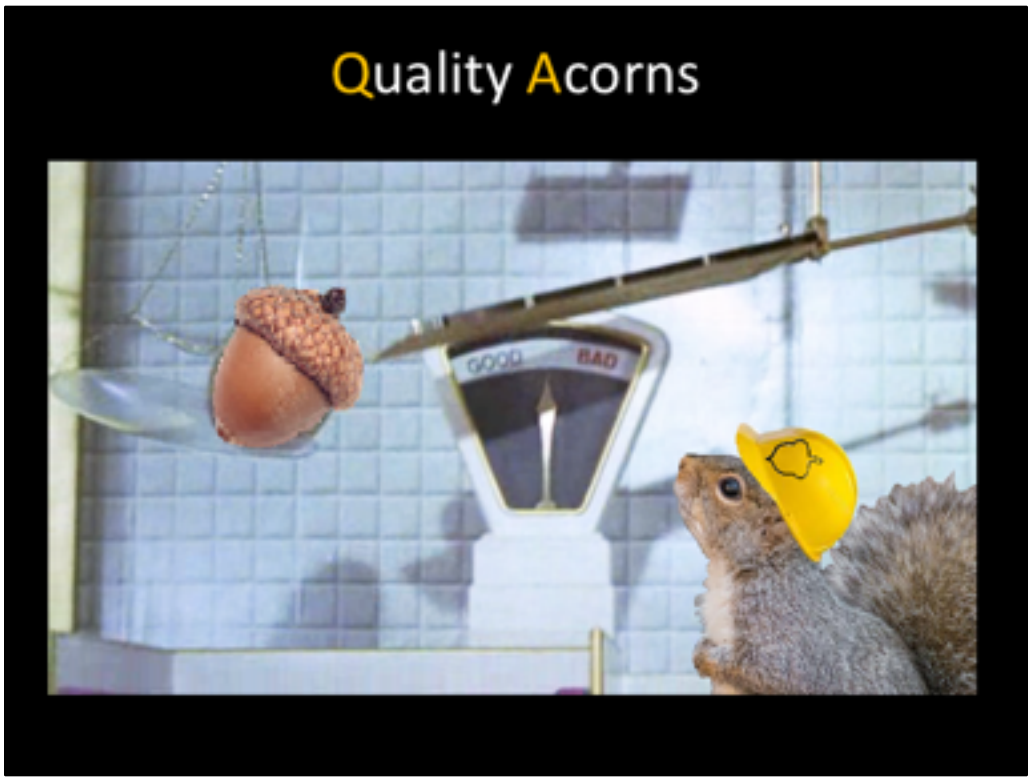
▶ CUT @ 1:55.9, … **and that's how you start a movement!**

have you seen this before? Zippy wants to watch all the time.

These Leaders converted passionate squirrels Into forest evangelists.

They enthusiastically spread the word and got their hands dirty.

They organized the large amount of known acorns.
They Identified acorns which were still needed.
They taught other squirrels how to contribute their valuable acorns.



Zippy also pulled together a group of expert squirrels and gave them jobs as the "gatekeepers" to the forest content.

They ensured that only quality acorns made it into the forest by checking that:

- the acorns were relevant (oak acorns not walnuts!).
- The acorns are complete with CONTEXT.
- the acorns were accurate with sufficient detail.
- the acorns weren't duplicates.
- The acorns were being planted in the right places.

By inspecting pull requests they addressed issues *before* the acorn was planted.

2 From there, the community started their training.

▶️ They learned how to use GitHub and ▶️ the new process of planting acorns… strengthening their acorn-planting skills.

Along the way, Zippy and his leaders were there
to help reinforce the concepts the Octocat had introduced.

By planning for these things in their sprints,
and working on these a little bit each day, their forest was growing.

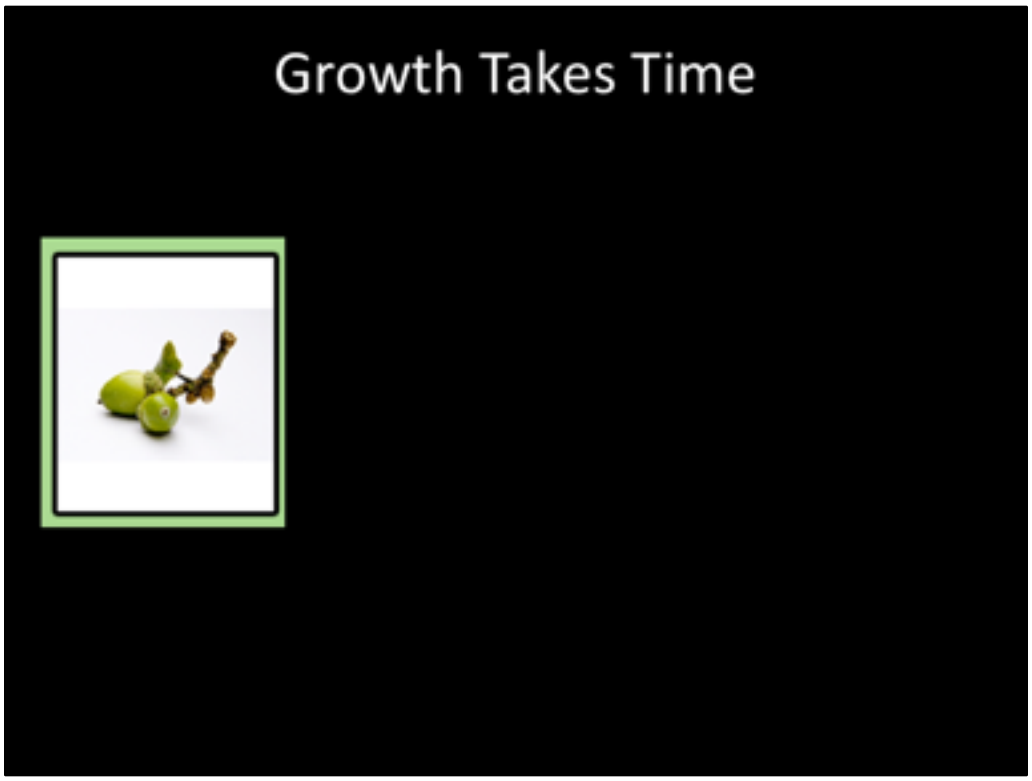
He also introduced “paired prosing”, like “paired programming”… encouraging squirrels to work together to plant their acorns.

Just like with coding, having more than one set of eyes on the task helps to create better, more comprehensive content.

Zippy encouraged the scurry to team up with other members of the forest.

This exercise brought in fresh skillsets and perspectives.
They were able to tap the experts to get the best information.
They found the strongest writers and collaborators!

It became every squirrel's job to actively prune the growing trees
to remove dead information and to update changes.



4 Throughout this whole process, Zippy learned the importance of patience. This wasn't an overnight process.

▶ He had to remain diligent and disciplined in continuing showing scurry members the right way.

▶ Growth of any tree takes time, so you have to ▶ keep watering the soil and ▶ encouraging the community to help and keep planting.

2 An oak tree produces a decent amount of acorns in its early life.

But after a few seasons, it ▶ explodes with thousands of acorns!

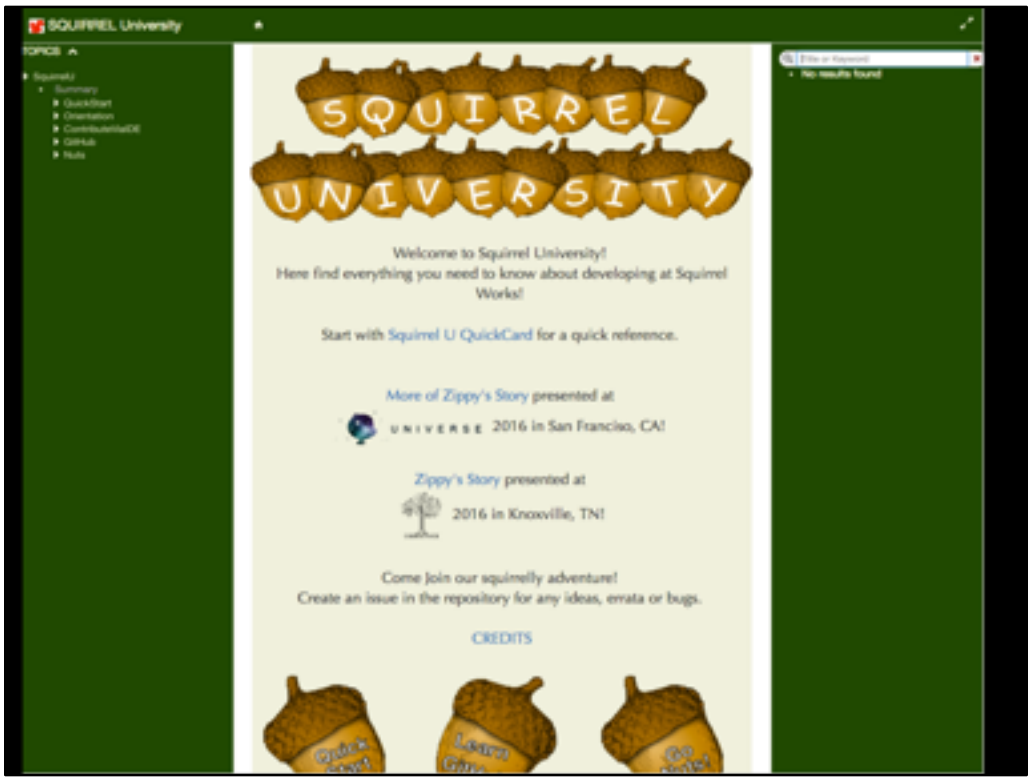
Knowledge planted in the learning repository is much the same.

▶ If the tree stays healthy, there is a tipping point where
the volume of quality acorns that it provides is overwhelmingly valuable.

Finally the squirrels in the scurry are communicating and sharing their acorns.

Zippy's scurry has learned that instead of only eating acorns for immediate gratification; Those well planted acorns produce new trees that become learning homes,

Which in turn, produce even more acorns which feed lots of squirrelly developers.



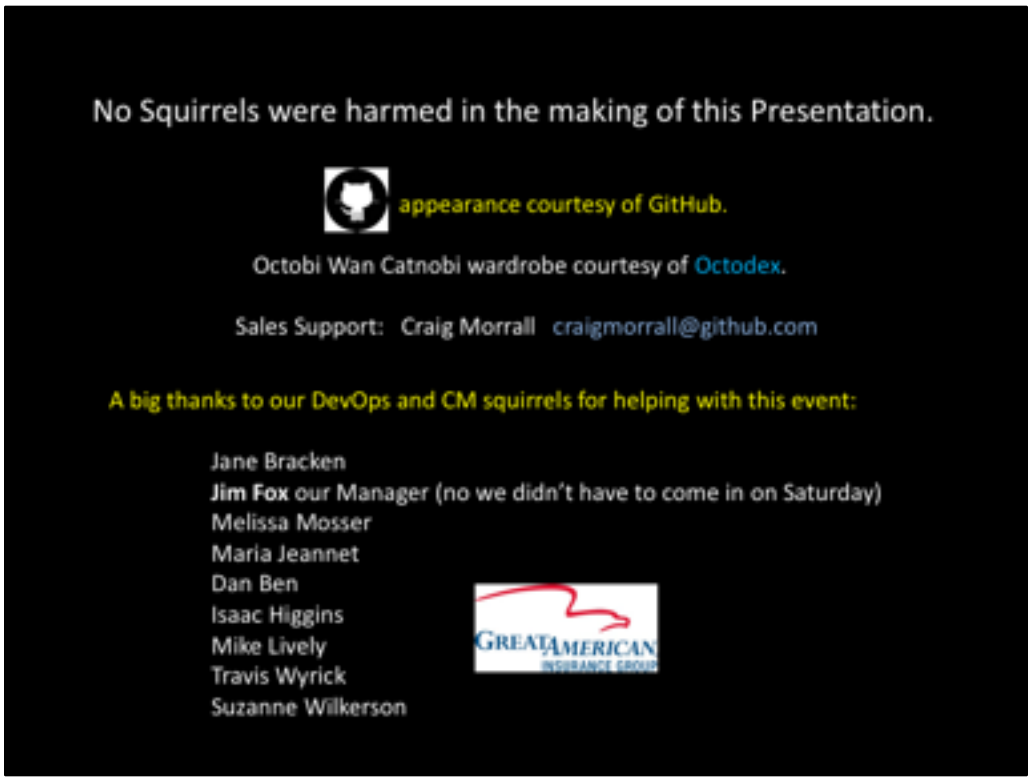
So that's Zippy's story as I heard it.

Since then Zippy has made tremendous progress on Squirrel U.
I thought that you might be interested in his progress.
Lets take a look!

Our team has continued to build upon Zippy's efforts.
We are using these tools in our work teams.
60+ developers are involved in gathering content.

These investments of time are paying us back!

- New team members are up and running faster.
- Competent developers have plenty to sharpen their teeth on.
- Senior architects stay focused on their main jobs.
- Efforts are spent on higher level problems – not problems already solved.
- Tribal knowledge has transformed into real learning trees!



2 Before we get too far from the scurry,

▸ I want to thank GitHub for this privilege of sharing with you today.
And also for providing such a great product!

Plus, ▶️ my team that was so supportive in creating
our learning environment and this presentation.

… and perhaps most importantly,
Thank you for joining us on our never ending hunt for acorns today.

This all starts with you.
You can make such a huge difference for your team.
Choose abundance over scarcity.

Please take an Acorn back to your workplace.
Plant these acorns in your teams.
Grow them into your own healthy information forests.

Finally, enjoy the benefits of having more time and energy
to produce great products!

4 ▶ SOUND
Zippy is reminding us of how easy it is to get started!
Fork a copy of ▶ Zippy's Repository and
Play with the ▶ Squirrel U site!

Zippy looks forwards to meeting you again!

If you've any questions or are interested in collaborating, come on up!

▶ SOUND OUTRO: Zippers!