

# On Git

A Crash Course By  
[Michael E Nash](#)

**Who Am I?**

# Additional Cats





# Class Resources

This presentation and all links in it will be available online

<https://github.com/utumno86/BlogPosts/blob/master/GitPresentation.md>

Presentation written with [Marp](#)

# What is a version control system?

From Wikipedia -

"... management of changes to documents, computer programs, large web sites, and other collections of information."



**git**



# Linus Torvalds

Invented git in 2005





# Installing Git

- OsX
  - install Homebrew [brew.sh](https://brew.sh)

```
brew install git
```

- Windows
  - install git for windows  
<https://gitforwindows.org/>

Git Website <https://git-scm.com/>

# Configuration Overview

- Personal info

```
git config --global user.name "John Doe"  
git config --global user.email johndoe@example.com
```

- Editor

```
git config --global core.editor emacs
```

- Aliases (optional)

```
git config --global alias.co checkout  
git config --global alias.br branch
```

# Gitignore Global

```
git config --global core.excludesfile '~/.gitignore_global'
```

```
touch ~/.gitignore_global
```

Suggested Gitignore contents:

<https://github.com/github/gitignore>

# Basic Git Commands

```
git init
```

```
git add .
```

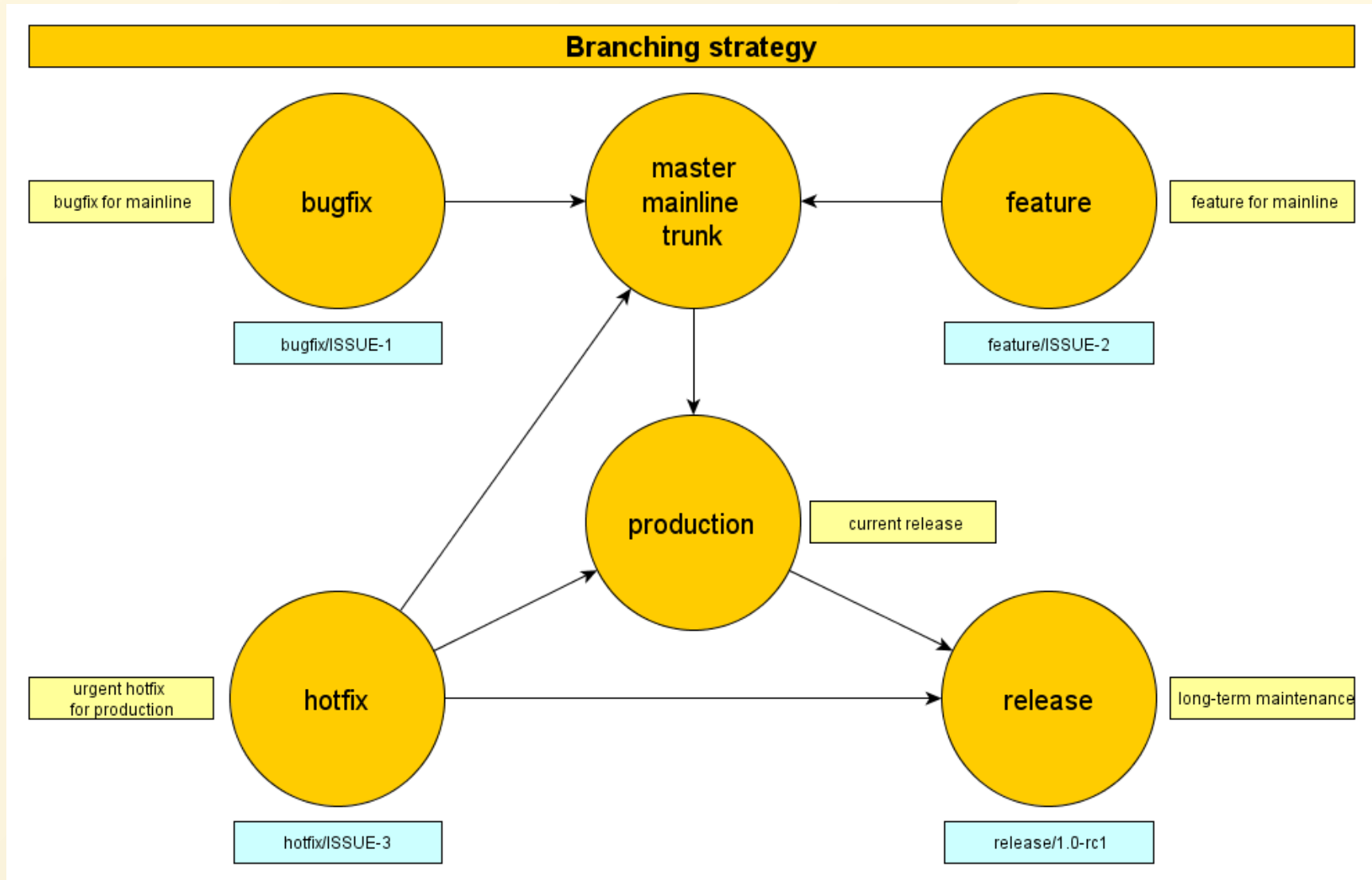
```
git commit -m "message"
```

# How Do I Get Out of Vim?

`:q`

[How To Exit the Vim Editor](#)

# Git Branching





# Git Branching Commands

```
git checkout -b testing
```

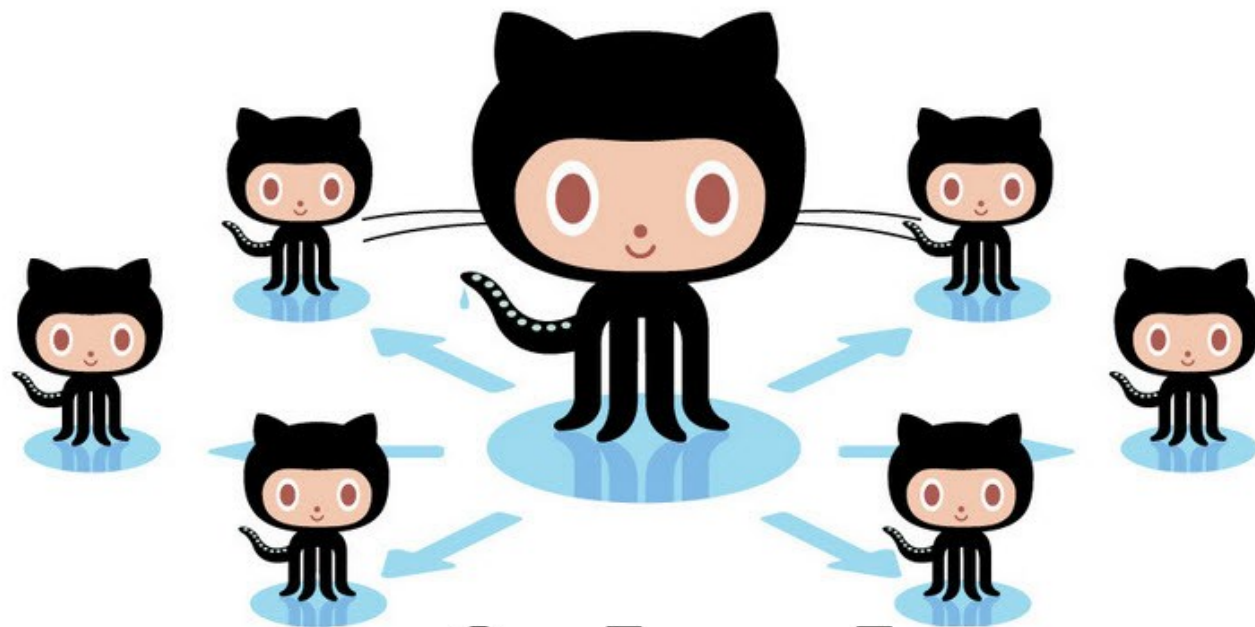
```
git branch
```

```
git checkout master
```

```
git merge testing
```

# ***Remote Repositories*** **Workflow**

# Github



**github**  
SOCIAL CODING

# SSH

from Wikipedia: "Secure Shell (SSH) is a cryptographic network protocol for operating network services securely over an unsecured network. ... The best known example application is for remote login to computer systems by users."

# Steps to Set Up an SSH Connection With Github

1. [Check for existing SSH Keys](#)
2. [Generating a New SSH Key and/or adding it to the SSH agent](#)
3. [Add the SSH Key To Your Github](#)

# Git Clone

[Git tutorial repo](#)

```
git clone git@github.com:utumno86/git_tutotial.git  
GitTutorial
```



# Git Remote

```
git remote
```

```
git remote add origin git@github.com:utumno86/git_tutorial
```

# Interacting With Remote Repositories

```
git push
```

```
git pull
```

Additional command: 

```
git fetch
```

# Resolving Merge Conflicts

Merge Revisions for C:\t\MergeDemoDevelopment\app\src\main\java\ca\cmpt276\mergedemo\NumberFun.java

6 changes, 2 conflicts

Local Changes (Read-only)	LF	Result	CRLF	Changes from Server (revision 50314cc8638a07fa4a88653d0752ec656f9... LF)
<pre>public int getMin() {     int min = data[0];     for (int value : data) {         if (value &lt; min) {             min = value;         }     }     return min; }</pre>	X >> 14 15 16 17 18 19 20 21 22 23	4 5 6 7 8 9 10 11 12 13	<pre>* NumberFun class manages some data an generates * My Changes and Teammate's changes applied! */  public class NumberFun {     private int[] data;     public NumberFun(int[] data) {         this.data = data;     } }</pre>	4 5 6 7 8 9 10 11 12 13
<pre>public int getAverage() {     if (data.length == 0) {         return 0;     }      int sum = 0;     int i = 0;     while (i &lt; data.length) {         sum += data[i];         i++;     }     return sum / data.length; }</pre>	X >> 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47	14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47	<pre>public int getAverage() {     int sum = 0;     int i = 0;     while (i &lt; data.length) {         sum += data[i];         i++;     }     return sum / data.length; }</pre>	14 15 16 << X 17 18 << X 19 20 21 22 << X 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 << X
<pre>public void printData() {     // Print out the data     for (int value : data) {         System.out.print(value + ", ");     }     System.out.println();      // Print out the stats:     int avg = getAverage();     int min = getMin(); }</pre>	X >> 40 41 42 43 44 45 46 47	30 31 32 33 34 35 36 37	<pre>public void printData() {     // Print out the data     int i = 0;     while (i &lt; data.length) {         int value = data[i];         System.out.print(value + ", ");         i++;     }     System.out.println();      // Print out the stats:     int avg = getAverage();     System.out.println("Stats: avg = " + avg }</pre>	22 << X 23 24 25 26 27 28 29 30 31 32 33 34 << X 35 36 37 << X

Accept Left Accept Right Apply Abort

# Additional Resources

## [Git Cheatsheet](#)

Git GUI Options:

1. [SourceTree](#) -- An open source Atlassian product
2. [Github Desktop](#) -- Open source election-based crossed platform sponsored by Github
3. [GitKraken](#) -- Beautiful, but paid!