BIMM 143

Course Summary
& GitHub Portfolio

Class 19

Barry Grant

UC San Diego

http://thegrantlab.org/bimm143

Today’s Menu

- Summary of major learning goals,
- Course discussion and feedback (https://board.net/p/bimm143_f22)
- CAPs evaluation (Link)
- Final exam
  - ➡ Test structure, guidelines and rules
  - ➡ Topics and example questions
  - ➡ Exam preparation, discussion and open study
- Polish our GitHub content and publish your own website portfolios

Today's Menu

- Summary of major learning goals,
- Course discussion and feedback (https://board.net/p/bimm143_f22)
- CAPs evaluation (Link)
- Final exam
  - Test structure, guidelines and rules
  - Topics and example questions
  - Exam preparation, discussion and open study

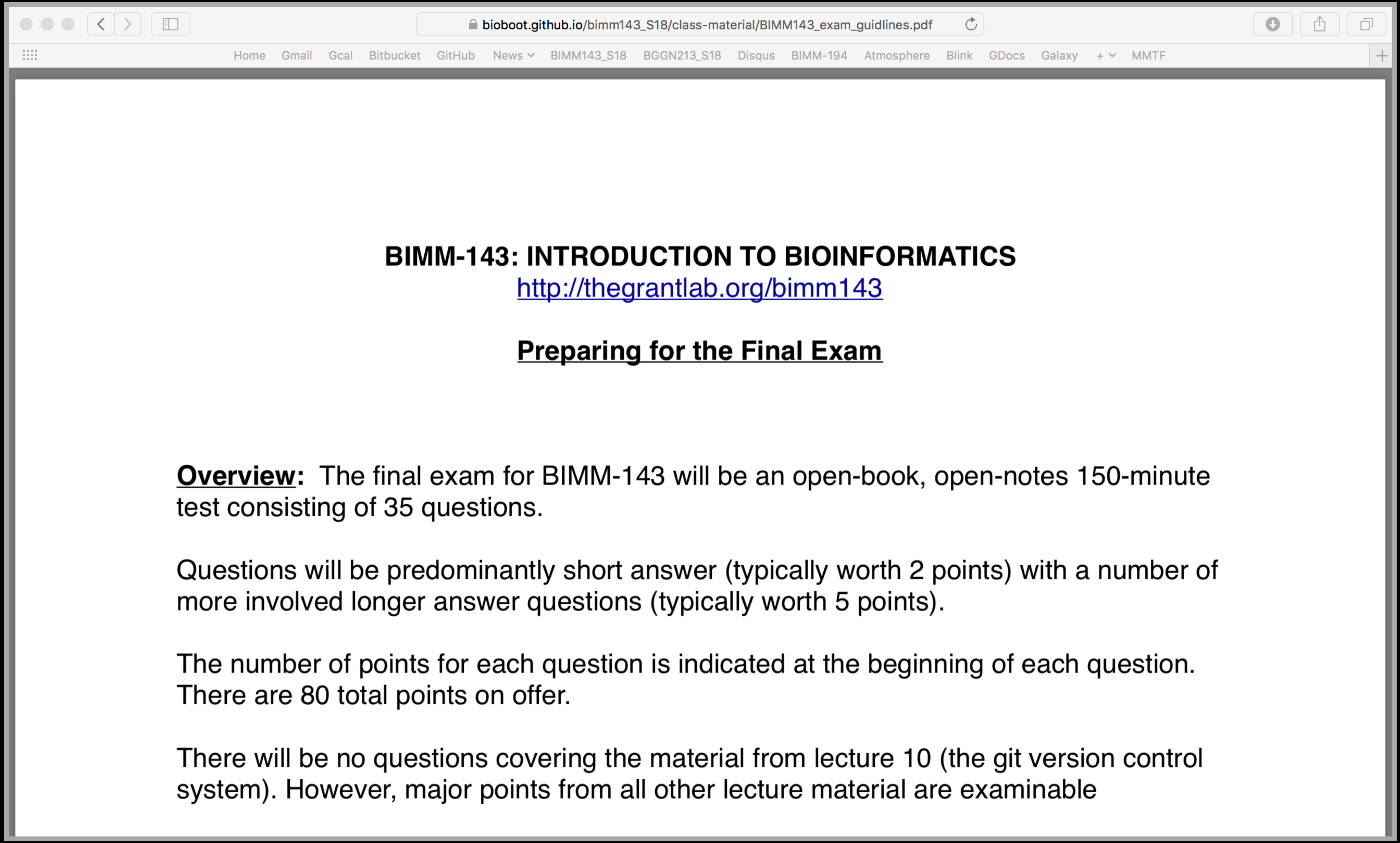
- Polish our GitHub content and publish your own website portfolios

Today’s Menu

- Summary of major learning goals,
- Course discussion and feedback (https://board.net/p/bimm143_f21)
- CAPs evaluation (Link)
- Project troubleshooting
  - Test structure, guidelines and rules
  - Topics and example questions
  - Exam preparation, discussion and open study

- Polish our GitHub content and publish your own website portfolios

https://bioboot.github.io/bimm143_F22/class-material/BIMM143_exam_guidlines.pdf



BIMM-143: INTRODUCTION TO BIOINFORMATICS
http://thegrantlab.org/bimm143

Preparing for the Final Exam

Overview: The final exam for BIMM-143 will be an open-book, open-notes 150-minute test consisting of 35 questions.

Questions will be predominantly short answer (typically worth 2 points) with a number of more involved longer answer questions (typically worth 5 points).

The number of points for each question is indicated at the beginning of each question. There are 80 total points on offer.

There will be no questions covering the material from lecture 10 (the git version control system). However, major points from all other lecture material are examinable

Q1. Did you enjoy this course? (Rank in relation to others you have experienced at UCSD)?

Q2. Should this course be offered again?

Q3. If so what changes would you recommend for this course? (e.g. more/less DataCamp & Projects)

Q4. Was the course effectively organized (lecture and lab material online vs handout or TritonEd site)?

Q5. What advice would you give to another student who is considering taking this course?

Q6. Considering both the limitations and possibilities of the subject matter and the course, how would you rate the overall effectiveness of this course and instructor?

Q7. Do you agree or disagree - The course developed my abilities and skills for the subject?

Q8. On average, how many hours per week have you spent on this course, including attending classes, doing homework's and assignments?

Q9. Any other comments you would like to share?

EtherPad Version: https://board.net/p/bimm143_f22

Form Version: https://tinyurl.com/bimm143-end

Thank you very much!

Announcement!

Bonus:

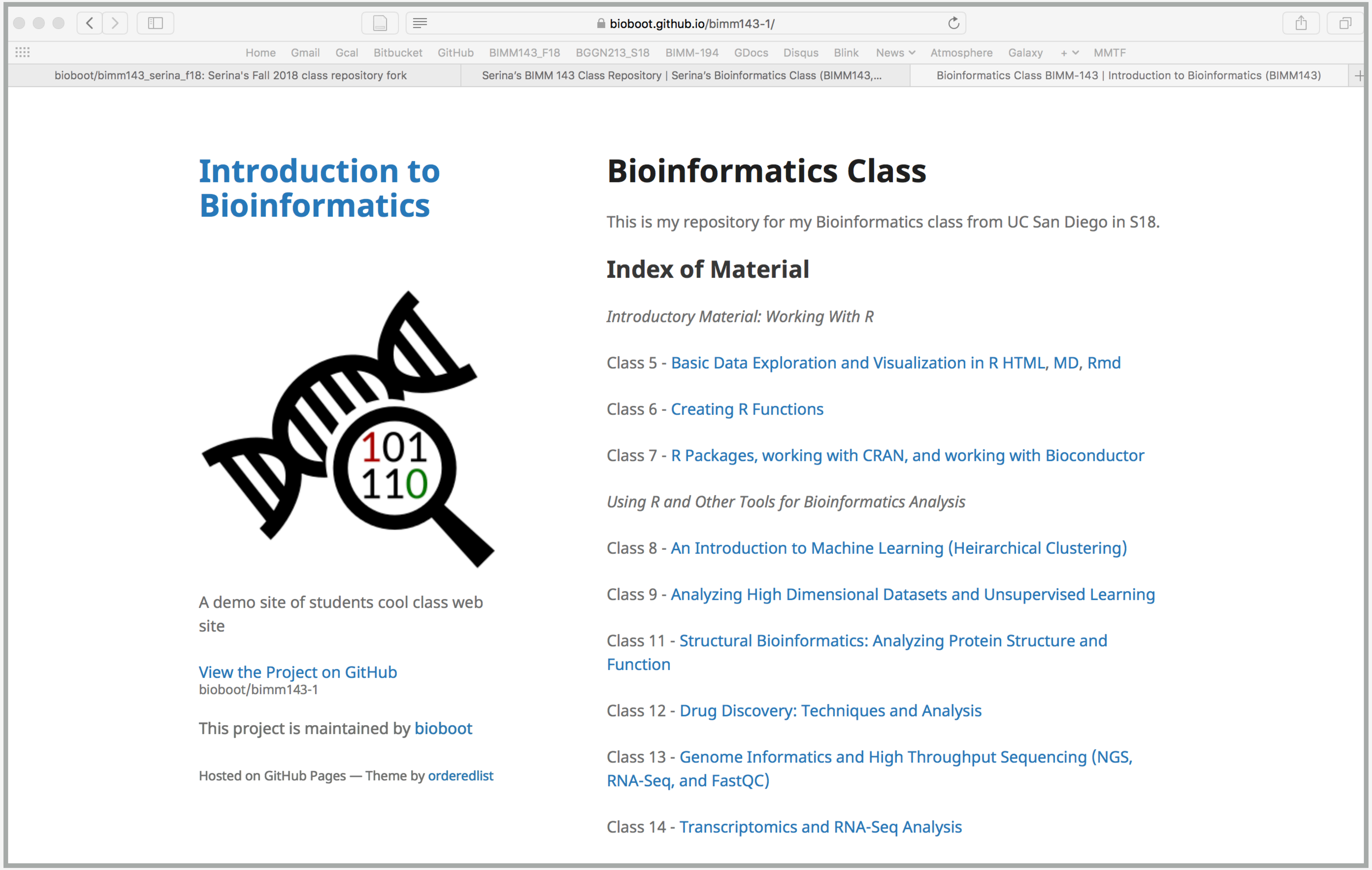
Bioinformatics & Genomics in Industry

Live Stream Video

Enjoy a set of short open ended guest lectures from leading genomic scientists at **Illumina Inc.**, **Synthetic Genomics Inc.**, and the **La Jolla Institute for Allergy and Immunology**. Feel free to contact these scientists for networking and to have your questions about industry careers in Bioinformatics and Genomics answered.

Bonus:

GitHub Spit & Polish



Introduction to Bioinformatics

A demo site of students cool class web site

View the Project on GitHub
bioboot/bimm143-1

This project is maintained by bioboot

Hosted on GitHub Pages — Theme by orderedlist

Bioinformatics Class

This is my repository for my Bioinformatics class from UC San Diego in S18.

Index of Material

Introductory Material: Working With R

Class 5 - Basic Data Exploration and Visualization in R HTML, MD, Rmd

Class 6 - Creating R Functions

Class 7 - R Packages, working with CRAN, and working with Bioconductor

Using R and Other Tools for Bioinformatics Analysis

Class 8 - An Introduction to Machine Learning (Heirarchical Clustering)

Class 9 - Analyzing High Dimensional Datasets and Unsupervised Learning

Class 11 - Structural Bioinformatics: Analyzing Protein Structure and Function

Class 12 - Drug Discovery: Techniques and Analysis

Class 13 - Genome Informatics and High Throughput Sequencing (NGS, RNA-Seq, and FastQC)

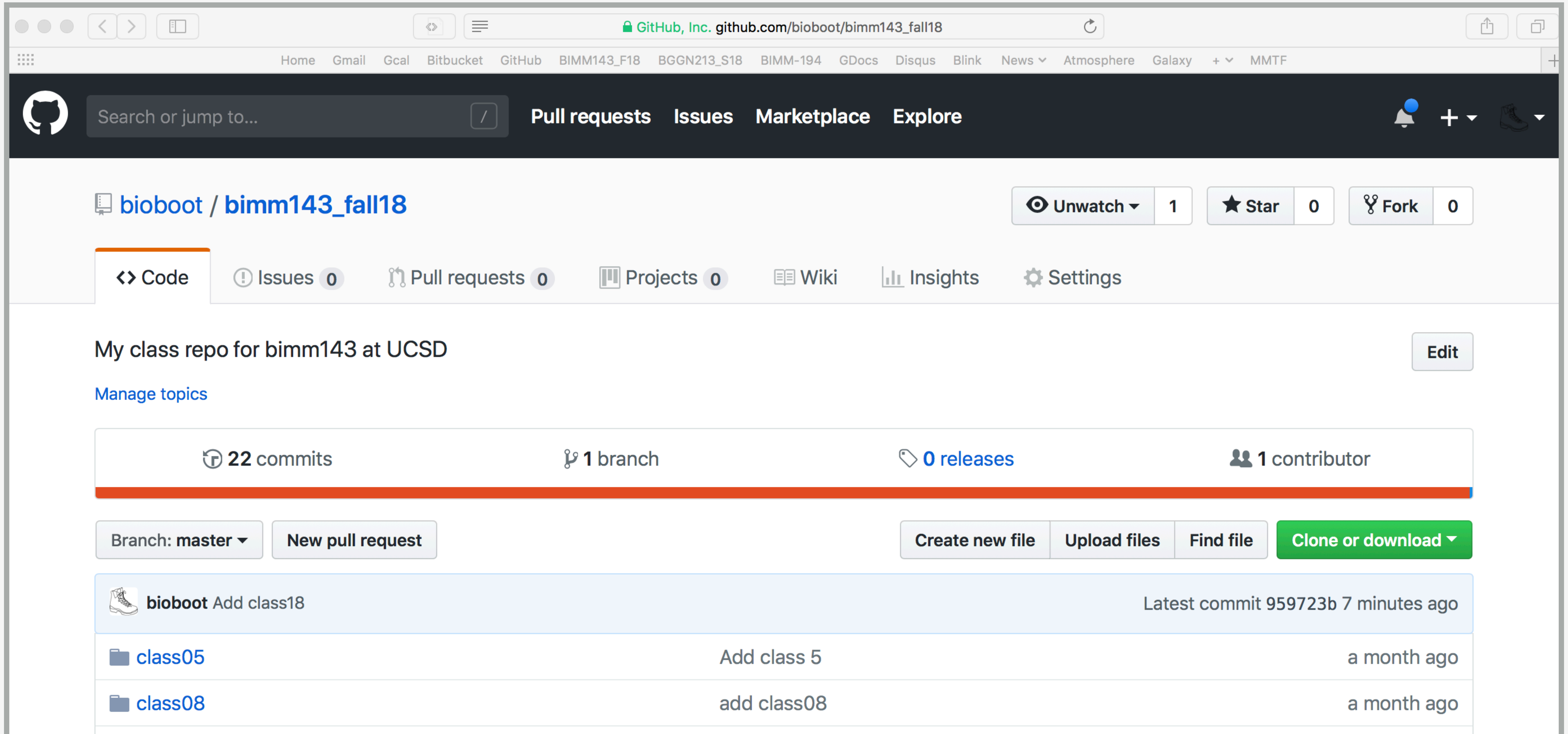
Class 14 - Transcriptomics and RNA-Seq Analysis

In your web browser navigate to your GitHub class repository < https://github.com/ >

Side-note:

To find the link to your GitHub repository from RStudio, open one of your past class projects and in the terminal type:

```
git remote -v
```

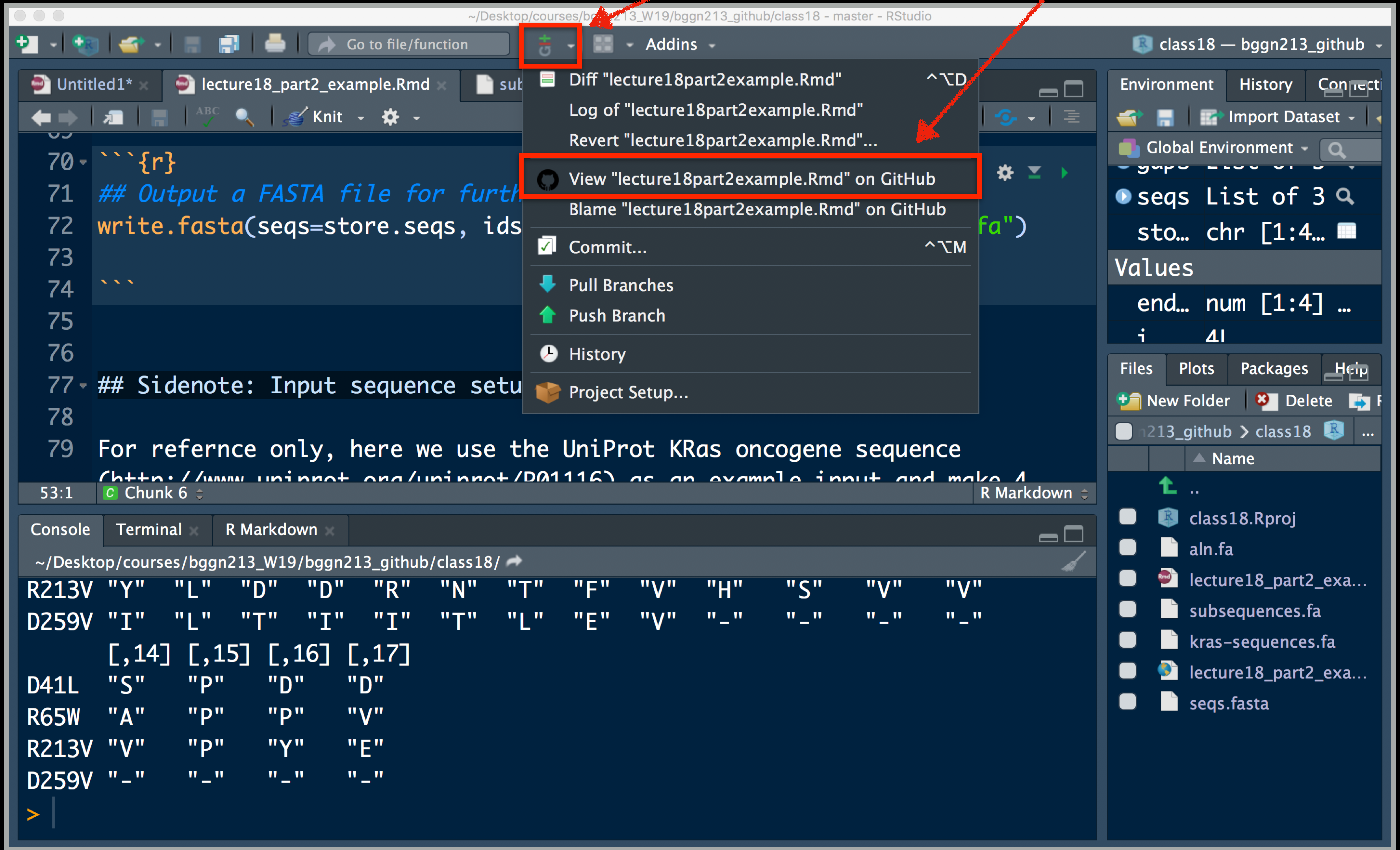


My class repo for bimm143 at UCSD

bioboot Add class18 — Latest commit 959723b 7 minutes ago

class05	Add class 5	a month ago
class08	add class08	a month ago

Or for a given GitHub tracked file click GIT icon and "VIEW on GITHUB"



~~~
```{r}
## Output a FASTA file for furth
write.fasta(seqs=store.seqs, ids                              fa")

~~~

Sidenote: Input sequence setu

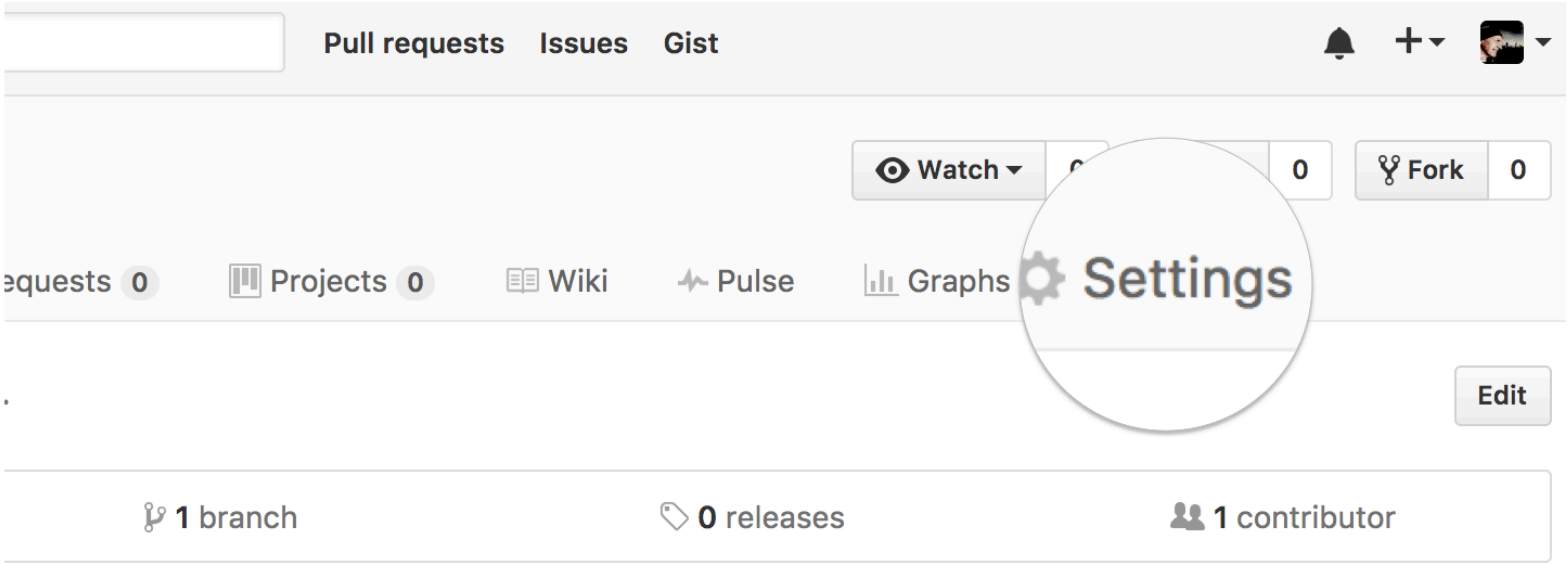
For refernce only, here we use the UniProt KRas oncogene sequence
(http://www.uniprot.org/uniprot/P01116) as an example input and make 4
```

```
R213V "Y"   "L"   "D"   "D"   "R"   "N"   "T"   "F"   "V"   "H"   "S"   "V"   "V"
D259V "I"   "L"   "T"   "I"   "I"   "T"   "L"   "E"   "V"   "-"   "-"   "-"   "-"
      [,14] [,15] [,16] [,17]
D41L  "S"   "P"   "D"   "D"
R65W  "A"   "P"   "P"   "V"
R213V "V"   "P"   "Y"   "E"
D259V "-"   "-"   "-"   "-"
>
```
```

1

# Repository Settings

**Head over to your GitHub class repository (where you are "pushing" all your class work)**

**Click on the Settings tab.**

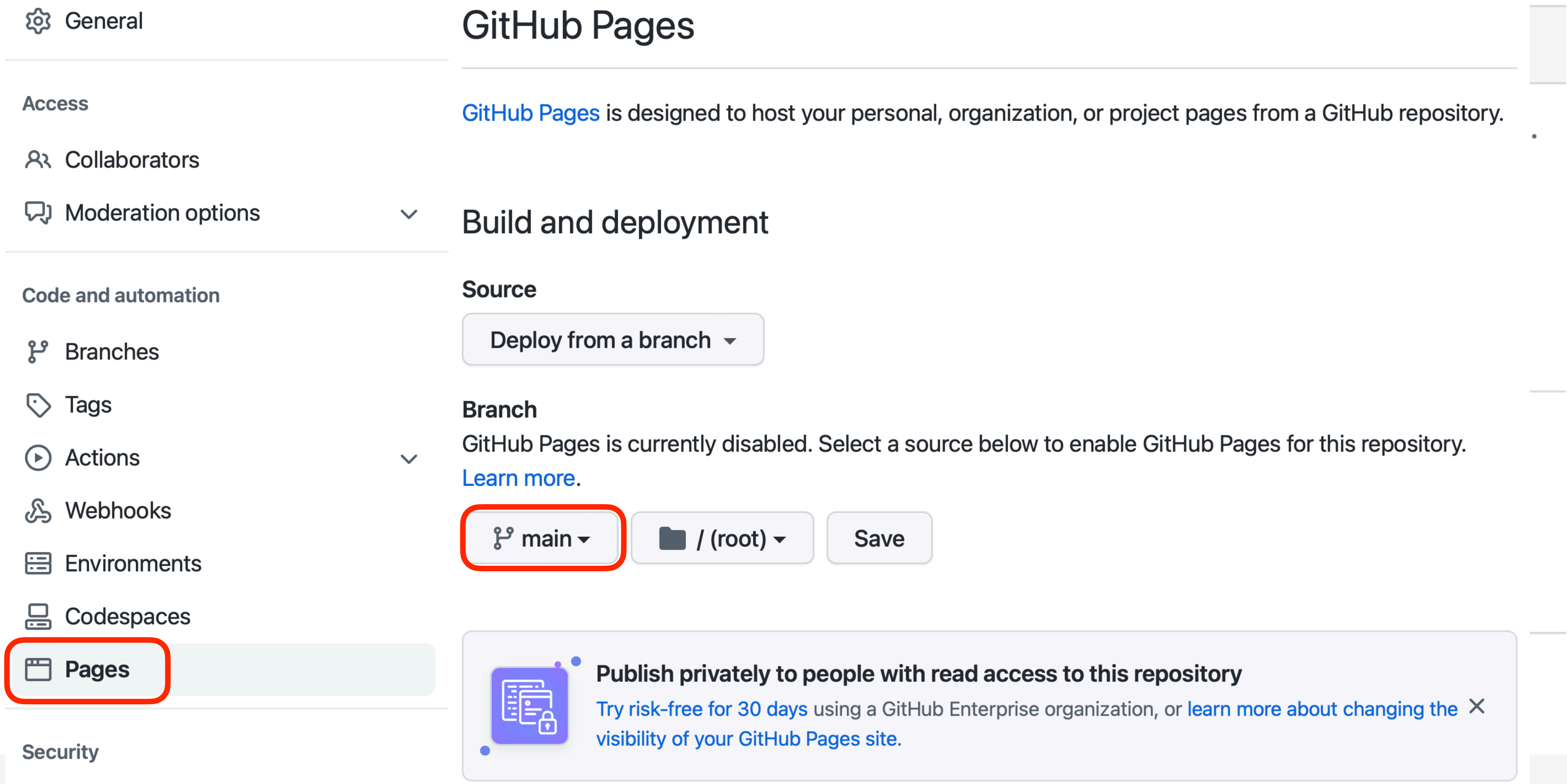


2

# Theme chooser

Scroll down to the **GitHub Pages** section. ~~Press **Choose a theme**.~~

**And set the Source to “main branch"**



## GitHub Pages

GitHub Pages is designed to host your personal, organization, or project pages from a GitHub repository.

### Build and deployment

**Source**

Deploy from a branch

**Branch**

GitHub Pages is currently disabled. Select a source below to enable GitHub Pages for this repository. Learn more.

main / (root) Save

**Publish privately to people with read access to this repository**

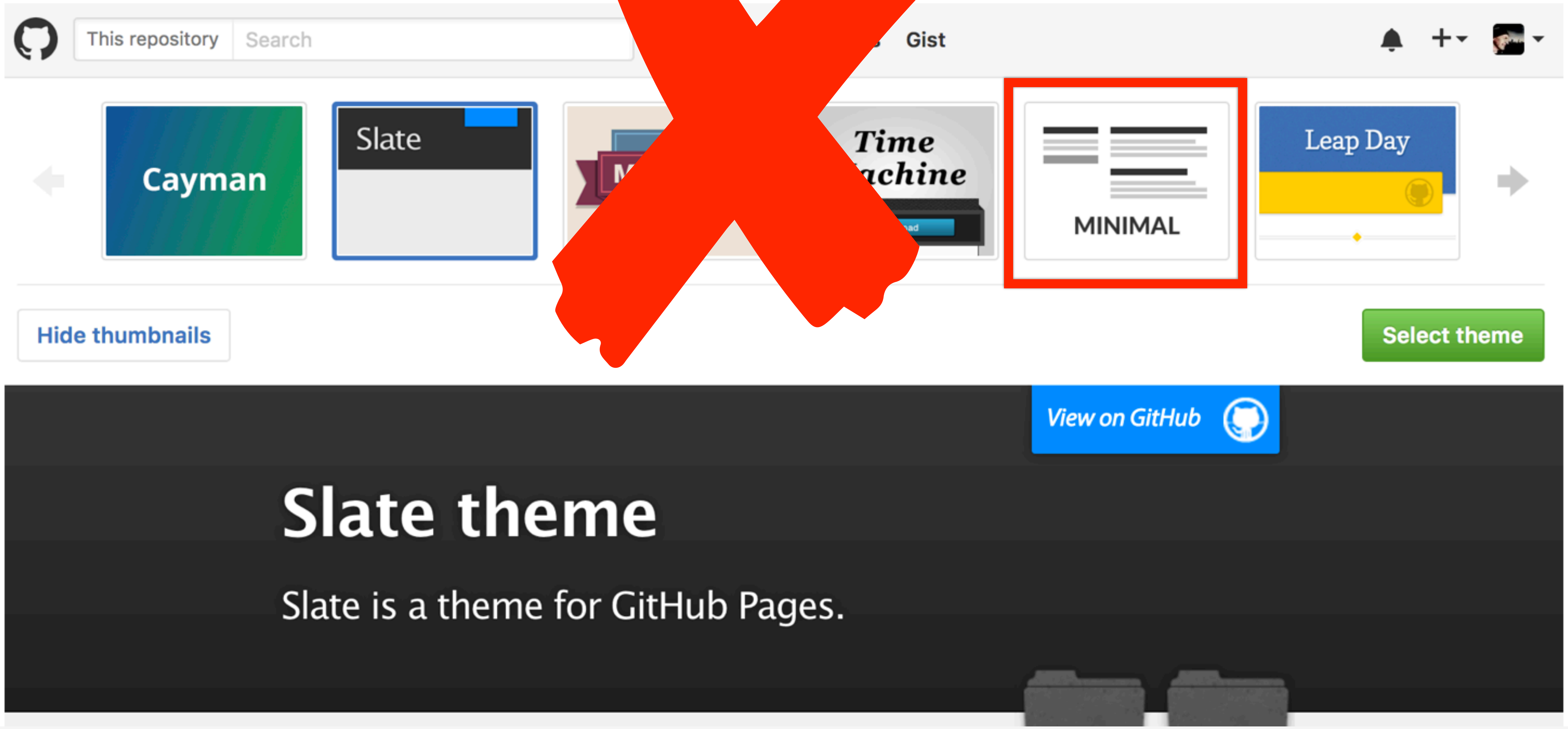
Try risk-free for 30 days using a GitHub Enterprise organization, or learn more about changing the visibility of your GitHub Pages site.

3

# Pick a theme

Choose one of the themes from the carousel at the top.

When you're done, click **Select theme** on the right.



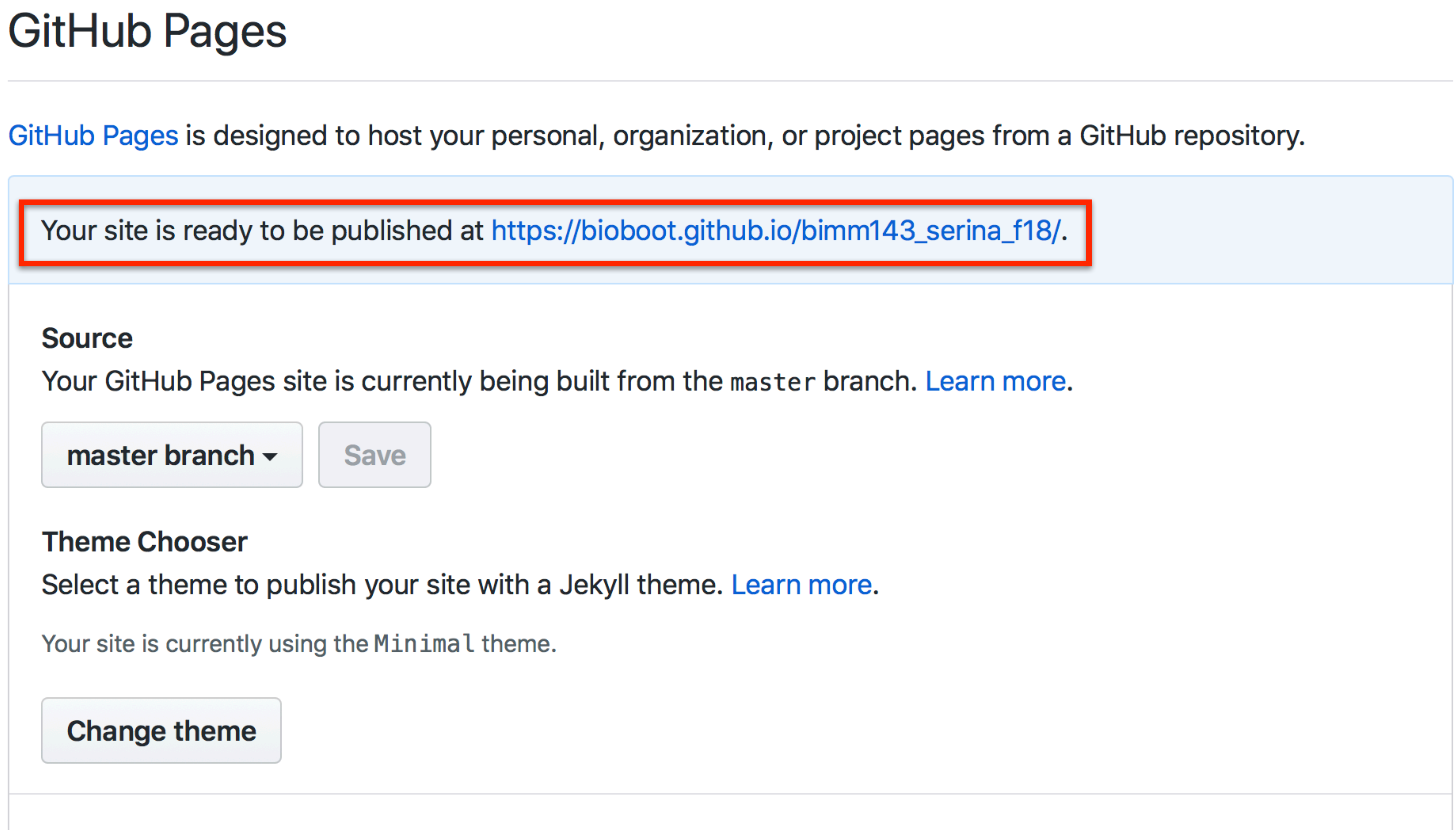
Slate theme

Slate is a theme for GitHub Pages.

4

# Side-note:

**Scroll down again to the GitHub Pages section to find the link to your new website. Open this link in a New Tab of your browser:**



## GitHub Pages

GitHub Pages is designed to host your personal, organization, or project pages from a GitHub repository.

Your site is ready to be published at https://bioboot.github.io/bimm143_serina_f18/.

**Source**

Your GitHub Pages site is currently being built from the `master` branch. Learn more.

**Theme Chooser**

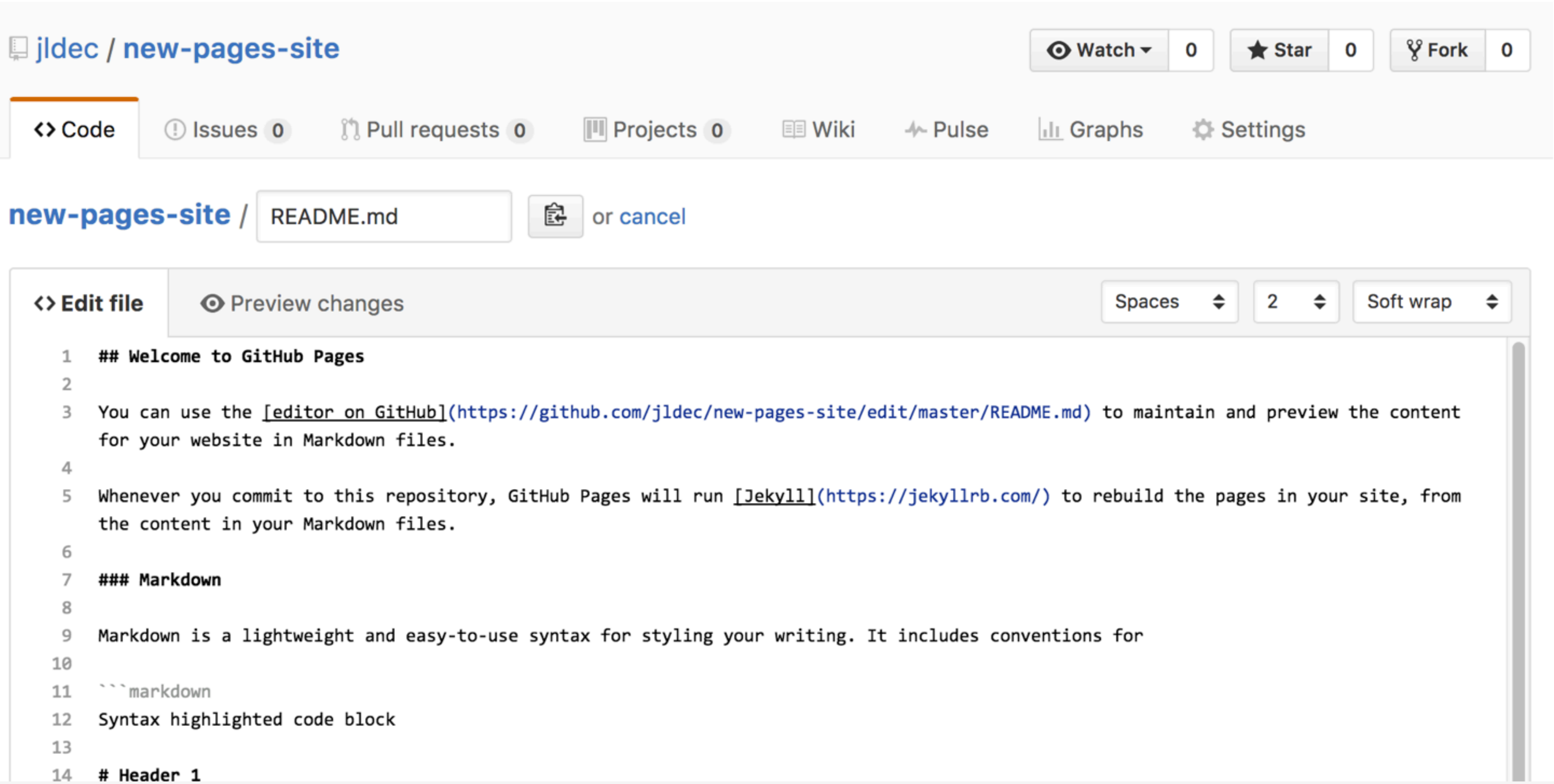
Select a theme to publish your site with a Jekyll theme. Learn more.

Your site is currently using the `Minimal` theme.

4

# Edit content

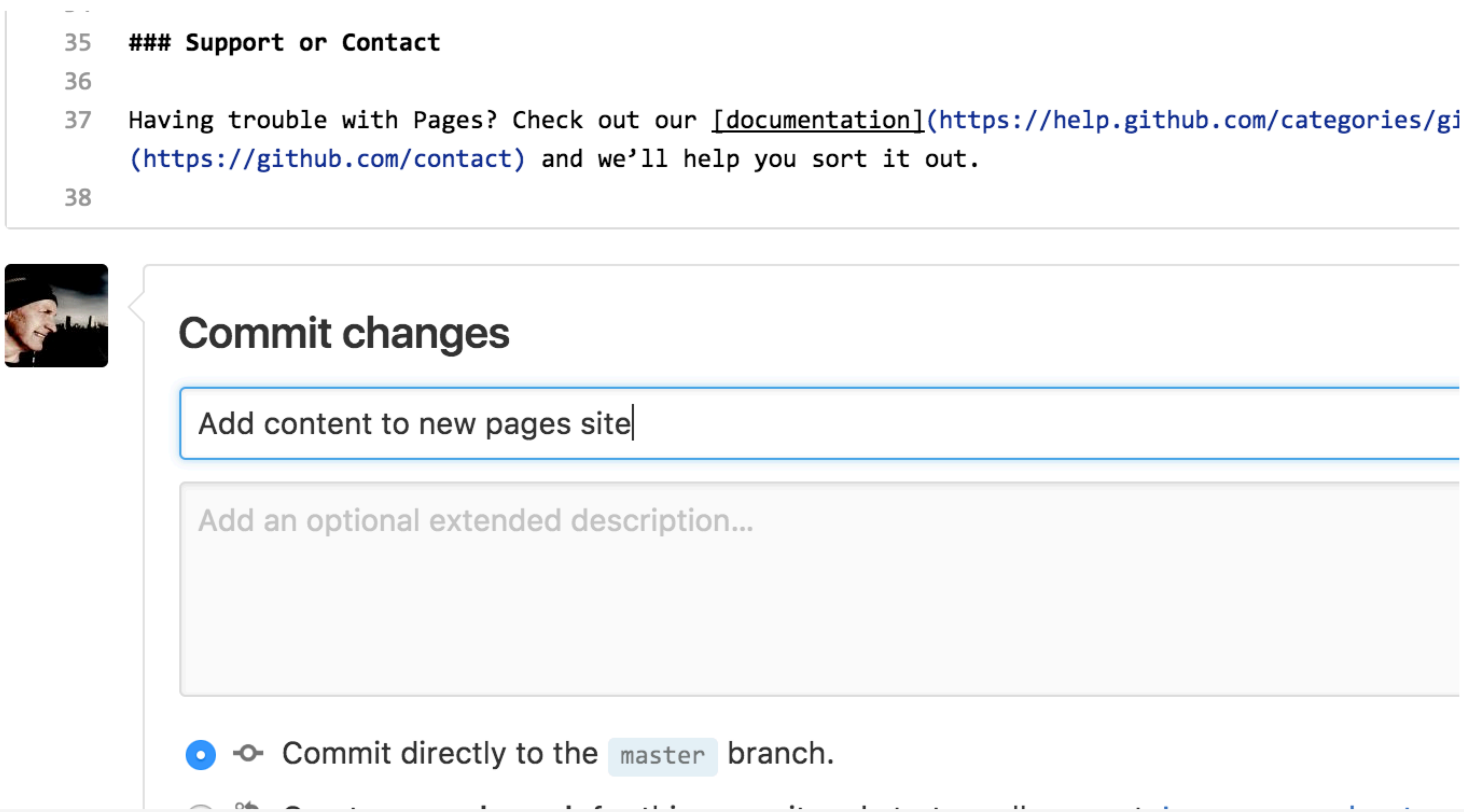
**Back on the repository main page use the GitHub online editor to add content. In particular, add links to each classes .MD file**



~~~
## Welcome to GitHub Pages

You can use the [editor on GitHub](https://github.com/jldec/new-pages-site/edit/master/README.md) to maintain and preview the content for your website in Markdown files.

Whenever you commit to this repository, GitHub Pages will run [Jekyll](https://jekyllrb.com/) to rebuild the pages in your site, from the content in your Markdown files.

### Markdown

Markdown is a lightweight and easy-to-use syntax for styling your writing. It includes conventions for

```markdown
Syntax highlighted code block

# Header 1
~~~

# Commit

Enter a commit comment and click on **Commit changes** below the editor.



```
Support or Contact

Having trouble with Pages? Check out our [documentation](https://help.github.com/categories/gi
(https://github.com/contact) and we’ll help you sort it out.

```

**Commit changes**

Add content to new pages site

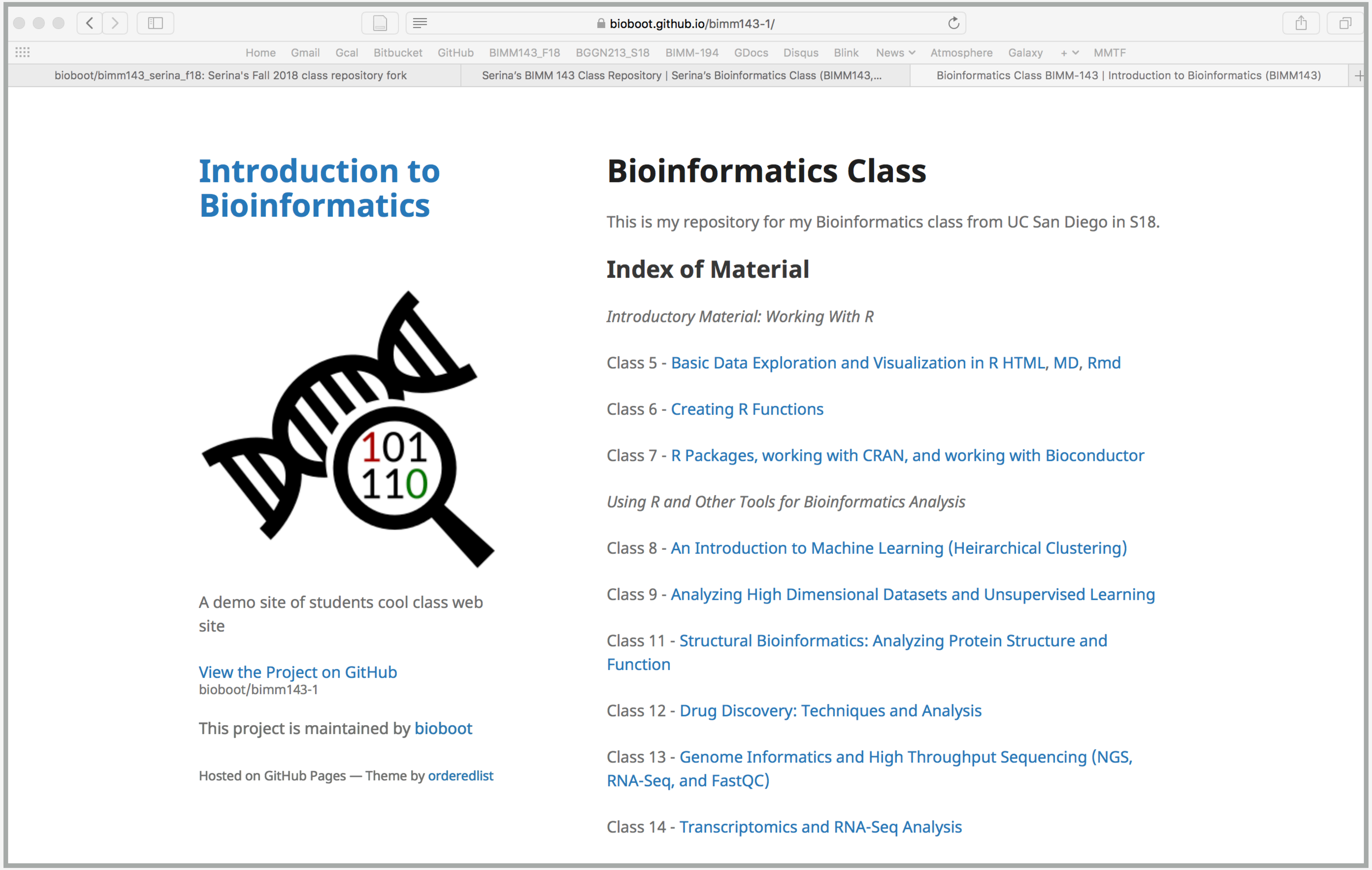
Add an optional extended description…

● Commit directly to the `master` branch.

6

## …and you're done!

Fire up a browser and go to **http://*username*.github.io/*repository***.



## Introduction to Bioinformatics

A demo site of students cool class web site

View the Project on GitHub
bioboot/bimm143-1

This project is maintained by bioboot

Hosted on GitHub Pages — Theme by orderedlist

# Bioinformatics Class

This is my repository for my Bioinformatics class from UC San Diego in S18.

## Index of Material

*Introductory Material: Working With R*

Class 5 - Basic Data Exploration and Visualization in R HTML, MD, Rmd

Class 6 - Creating R Functions

Class 7 - R Packages, working with CRAN, and working with Bioconductor

*Using R and Other Tools for Bioinformatics Analysis*

Class 8 - An Introduction to Machine Learning (Heirarchical Clustering)

Class 9 - Analyzing High Dimensional Datasets and Unsupervised Learning

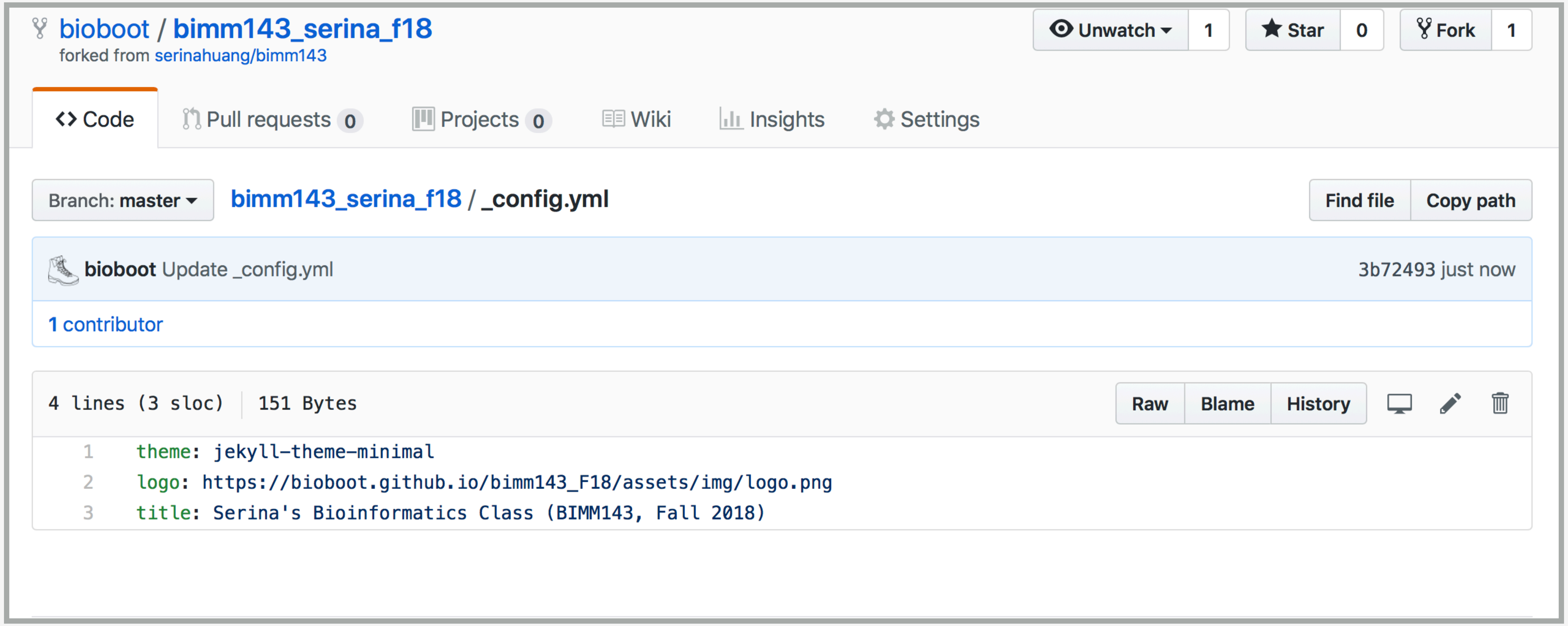
Class 11 - Structural Bioinformatics: Analyzing Protein Structure and Function

Class 12 - Drug Discovery: Techniques and Analysis

Class 13 - Genome Informatics and High Throughput Sequencing (NGS, RNA-Seq, and FastQC)

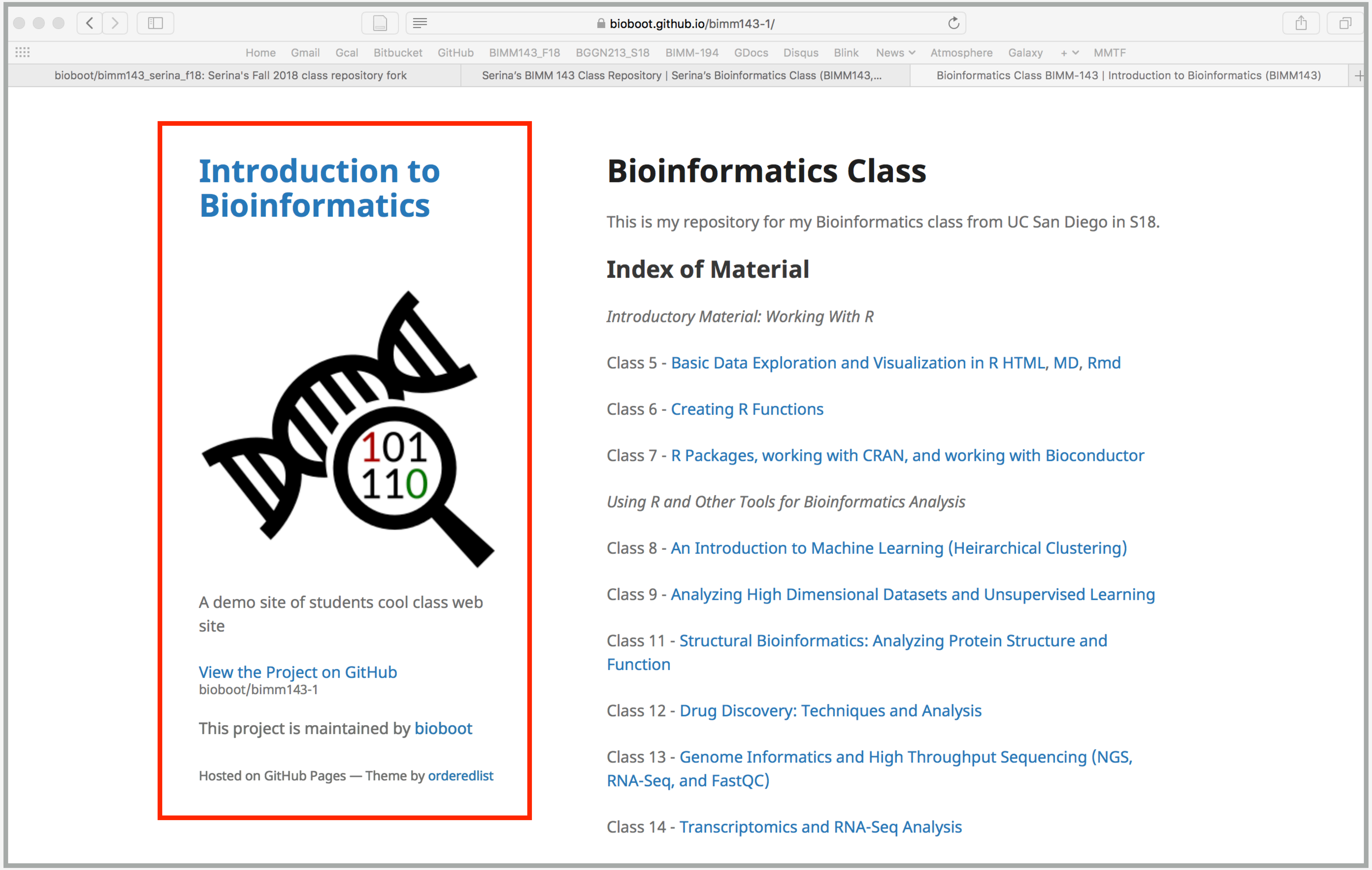
Class 14 - Transcriptomics and RNA-Seq Analysis

**Here I: (1) forked Serina’s Repo, (2) Chose the “minimal” theme, (3) Edited _config.yml (adding logo and title)**



```yaml
theme: jekyll-theme-minimal
logo: https://bioboot.github.io/bimm143_F18/assets/img/logo.png
title: Serina's Bioinformatics Class (BIMM143, Fall 2018)
```

Here I: (1) Chose the “minimal” theme, (3) Edited _config.yml (adding logo and title), (4) Edited README.md



Introduction to Bioinformatics

A demo site of students cool class web site

View the Project on GitHub
bioboot/bimm143-1

This project is maintained by bioboot

Hosted on GitHub Pages — Theme by orderedlist

Bioinformatics Class

This is my repository for my Bioinformatics class from UC San Diego in S18.

Index of Material

Introductory Material: Working With R

Class 5 - Basic Data Exploration and Visualization in R HTML, MD, Rmd

Class 6 - Creating R Functions

Class 7 - R Packages, working with CRAN, and working with Bioconductor

Using R and Other Tools for Bioinformatics Analysis

Class 8 - An Introduction to Machine Learning (Heirarchical Clustering)

Class 9 - Analyzing High Dimensional Datasets and Unsupervised Learning

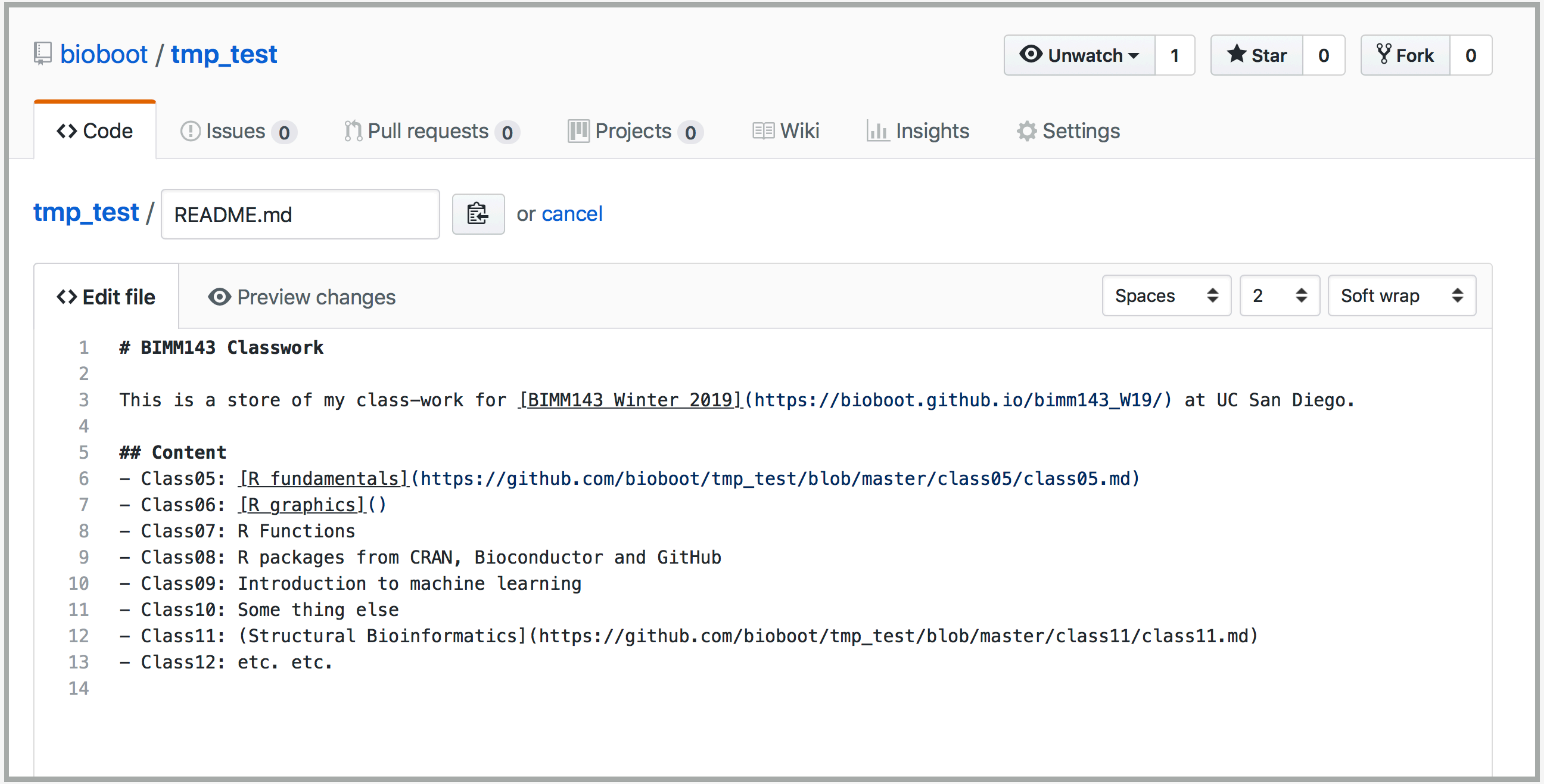
Class 11 - Structural Bioinformatics: Analyzing Protein Structure and Function

Class 12 - Drug Discovery: Techniques and Analysis

Class 13 - Genome Informatics and High Throughput Sequencing (NGS, RNA-Seq, and FastQC)

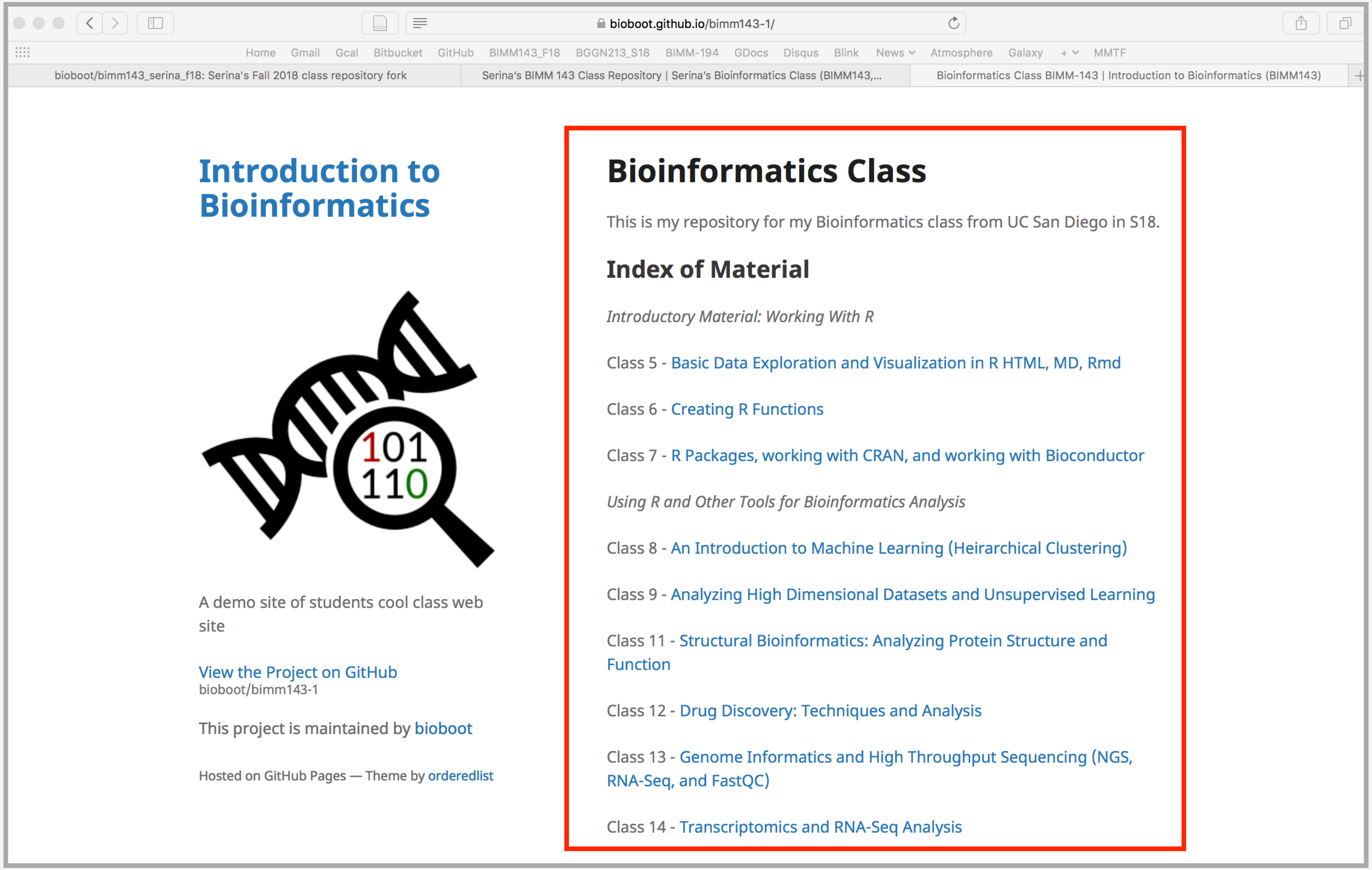
Class 14 - Transcriptomics and RNA-Seq Analysis

Here I: (1) Chose the “minimal” theme, (3) Edited _config.yml (adding logo and title), (4) Edited README.md



```
# BIMM143 Classwork

This is a store of my class-work for [BIMM143 Winter 2019](https://bioboot.github.io/bimm143_W19/) at UC San Diego.

## Content
- Class05: [R fundamentals](https://github.com/bioboot/tmp_test/blob/master/class05/class05.md)
- Class06: [R graphics]()
- Class07: R Functions
- Class08: R packages from CRAN, Bioconductor and GitHub
- Class09: Introduction to machine learning
- Class10: Some thing else
- Class11: (Structural Bioinformatics](https://github.com/bioboot/tmp_test/blob/master/class11/class11.md)
- Class12: etc. etc.

```

Here I: (1) Chose the “minimal” theme, (3) Edited _config.yml (adding logo and title), (4) Edited README.md



Introduction to Bioinformatics

A demo site of students cool class web site

View the Project on GitHub
bioboot/bimm143-1

This project is maintained by bioboot

Hosted on GitHub Pages — Theme by orderedlist

Bioinformatics Class

This is my repository for my Bioinformatics class from UC San Diego in S18.

Index of Material

Introductory Material: Working With R

Class 5 - Basic Data Exploration and Visualization in R HTML, MD, Rmd

Class 6 - Creating R Functions

Class 7 - R Packages, working with CRAN, and working with Bioconductor

Using R and Other Tools for Bioinformatics Analysis

Class 8 - An Introduction to Machine Learning (Heirarchical Clustering)

Class 9 - Analyzing High Dimensional Datasets and Unsupervised Learning

Class 11 - Structural Bioinformatics: Analyzing Protein Structure and Function

Class 12 - Drug Discovery: Techniques and Analysis

Class 13 - Genome Informatics and High Throughput Sequencing (NGS, RNA-Seq, and FastQC)

Class 14 - Transcriptomics and RNA-Seq Analysis

Here I: (1) forked Serina's Repo, (2) Chose the "minimal" theme, (3) Edited _config.yml (adding logo and title)

Thank you very much!

Please do fill out your CAPs evaluation (Link!) if you get a change.
It is important to the courses we offer in the future and how we teach them!

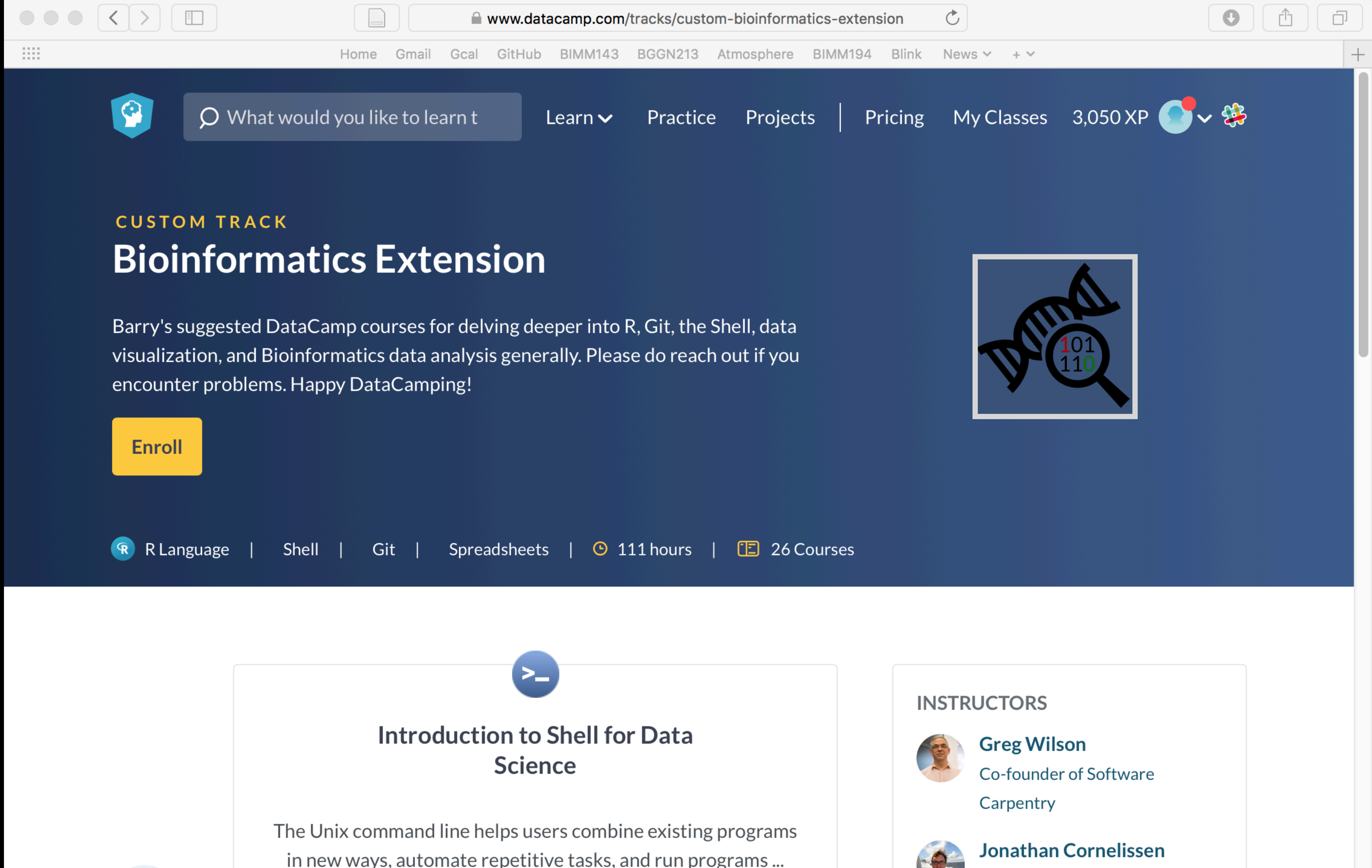
Thank you very much!

**Please do fill out your CAPs evaluation (Link!) if you get a change.
It is important to the courses we offer in the future and how we teach them!**

Post to GradeScope your GitHub Pages portfolio URL to GradeScope!

Going Further With DataCamp

https://bioboot.github.io/bimm143_F19/class-material/datacamp_extras.pdf



CUSTOM TRACK

Bioinformatics Extension

Barry's suggested DataCamp courses for delving deeper into R, Git, the Shell, data visualization, and Bioinformatics data analysis generally. Please do reach out if you encounter problems. Happy DataCamping!

Introduction to Shell for Data Science

The Unix command line helps users combine existing programs in new ways, automate repetitive tasks, and run programs ...

INSTRUCTORS

Greg Wilson
Co-founder of Software Carpentry

Jonathan Cornelissen

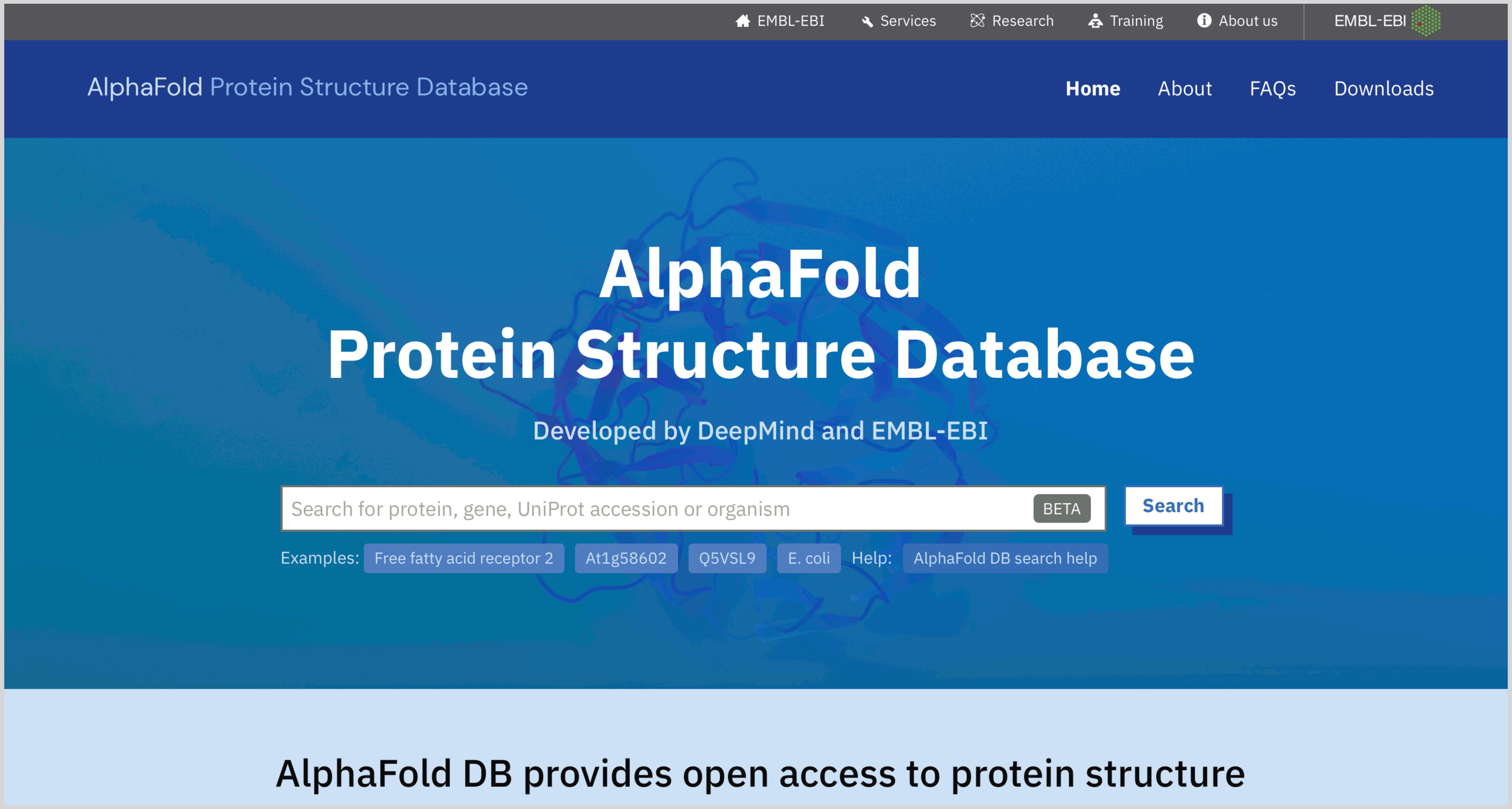
Announcement!

Bonus:
Bioinformatics & Genomics in Industry
Live Stram Video

Enjoy a set of short open ended guest lectures from leading genomic scientists at **Illumina Inc.**, **Synthetic Genomics Inc.**, and the **La Jolla Institute for Allergy and Immunology**. Feel free to contact these scientists for networking and to have your questions about industry careers in Bioinformatics and Genomics answered.

The future? Combining AI and Physics based approaches

Missing class!



AlphaFold

Protein Structure Database

Developed by DeepMind and EMBL-EBI

AlphaFold DB provides open access to protein structure