



# 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](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

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- Project troubleshooting
  - Test structure, guidelines and rules
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  - Exam preparation, discussion and open study
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[https://bioboot.github.io/bimm143\\_F22/class-material/BIMM143\\_exam\\_guidlines.pdf](https://bioboot.github.io/bimm143_F22/class-material/BIMM143_exam_guidlines.pdf)

The screenshot shows a web browser window with the URL [https://bioboot.github.io/bimm143\\_S18/class-material/BIMM143\\_exam\\_guidlines.pdf](https://bioboot.github.io/bimm143_S18/class-material/BIMM143_exam_guidlines.pdf) in the address bar. The page content is a PDF document titled "BIMM-143: INTRODUCTION TO BIOINFORMATICS" with the URL <http://thegrantlab.org/bimm143>. Below the title, there is a section titled "Preparing for the Final Exam". The text discusses the final exam format, which is open-book and open-notes, lasting 150 minutes and consisting of 35 questions. It specifies that most questions will be short answer (worth 2 points) and includes some longer answer questions (worth 5 points). The number of points for each question is indicated at the beginning of each question. A total of 80 points are available. A note states that no questions from lecture 10 (git version control system) will be asked, but major points from all other lecture material are examinable.

**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](https://board.net/p/bimm143_f22)

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

Thank you very much!

# 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**

Home Gmail Gcal Bitbucket GitHub BIMM143\_F18 BGGN213\_S18 BIMM-194 GDocs Disqus Blink News Atmosphere Galaxy + MMTF

bioboot/bimm143\_serina\_f18: Serina's Fall 2018 class repository fork Serina's BIMM 143 Class Repository | Serina's Bioinformatics Class (BIMM143,...) Bioinformatics Class BIMM-143 | Introduction to Bioinformatics (BIMM143) +

# Introduction to Bioinformatics



A demo site of students cool class web site

[View the Project on GitHub](#)  
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## Bioinformatics Class

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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**

The screenshot shows a GitHub repository page for 'bioboot / bimm143\_fall18'. The page includes a navigation bar with links to Home, Gmail, Gcal, Bitbucket, GitHub, BIMM143\_F18, BGNN213\_S18, BIMM-194, GDocs, Disqus, Blink, News, Atmosphere, Galaxy, and MMTF. The main content area displays the repository details: 'bioboot / bimm143\_fall18', 'Code' tab selected, 22 commits, 1 branch, 0 releases, 1 contributor, and a description 'My class repo for bimm143 at UCSD'. It also shows a 'Manage topics' link and a summary bar with 22 commits, 1 branch, 0 releases, and 1 contributor. At the bottom, there are buttons for 'Branch: master', 'New pull request', 'Create new file', 'Upload files', 'Find file', and a green 'Clone or download' button. A list of recent commits is shown, including 'Add class18' by bioboot, 'Add class 5' by class05, and 'add class08' by class08.

GitHub, Inc. [github.com/bioboot/bimm143\\_fall18](https://github.com/bioboot/bimm143_fall18)

Search or jump to... / Pull requests Issues Marketplace Explore

Unwatch 1 Star 0 Fork 0

Code Issues 0 Pull requests 0 Projects 0 Wiki Insights Settings

My class repo for bimm143 at UCSD Edit

Manage topics

22 commits 1 branch 0 releases 1 contributor

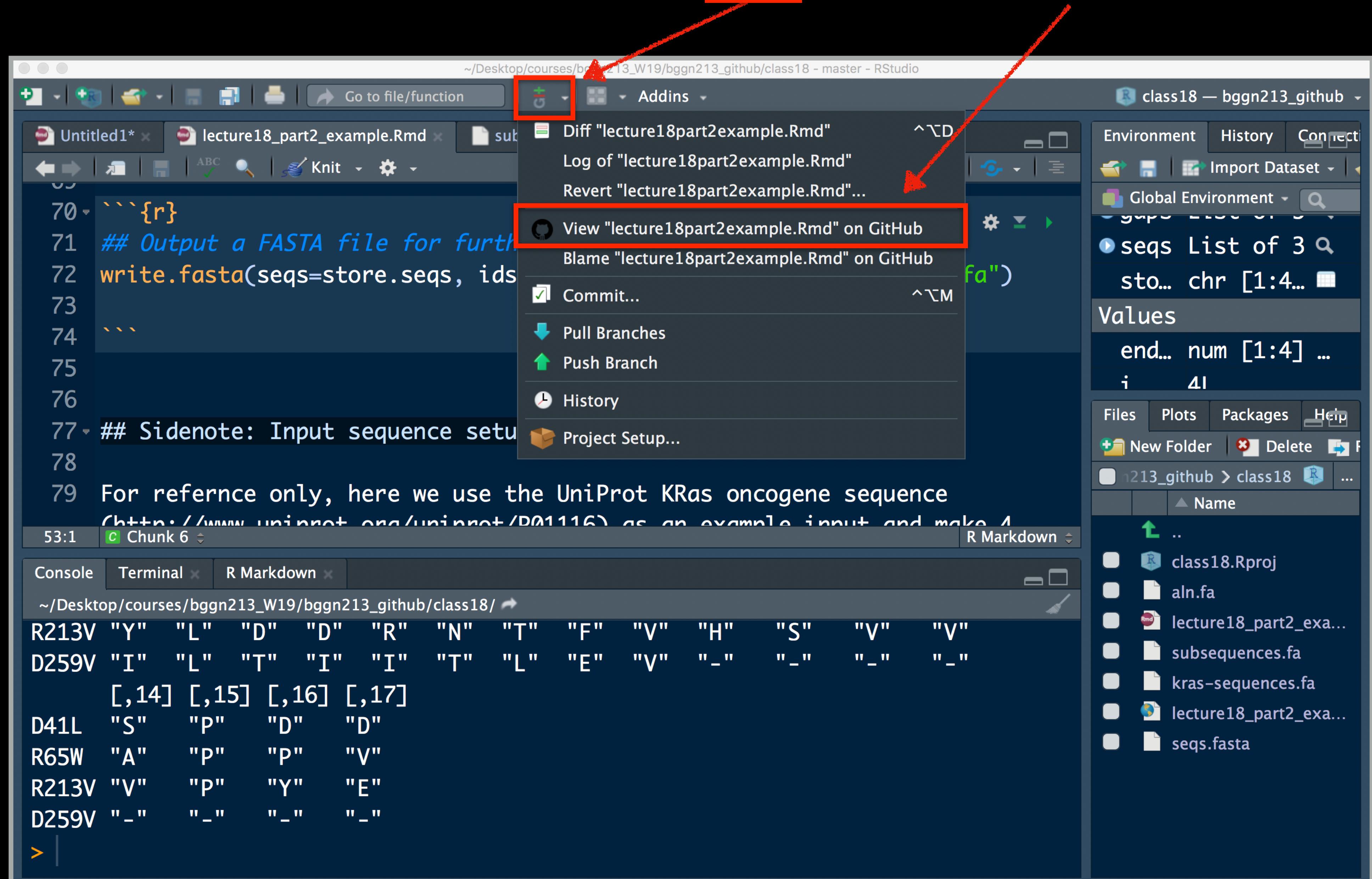
Branch: master New pull request Create new file Upload files Find file Clone or download

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"

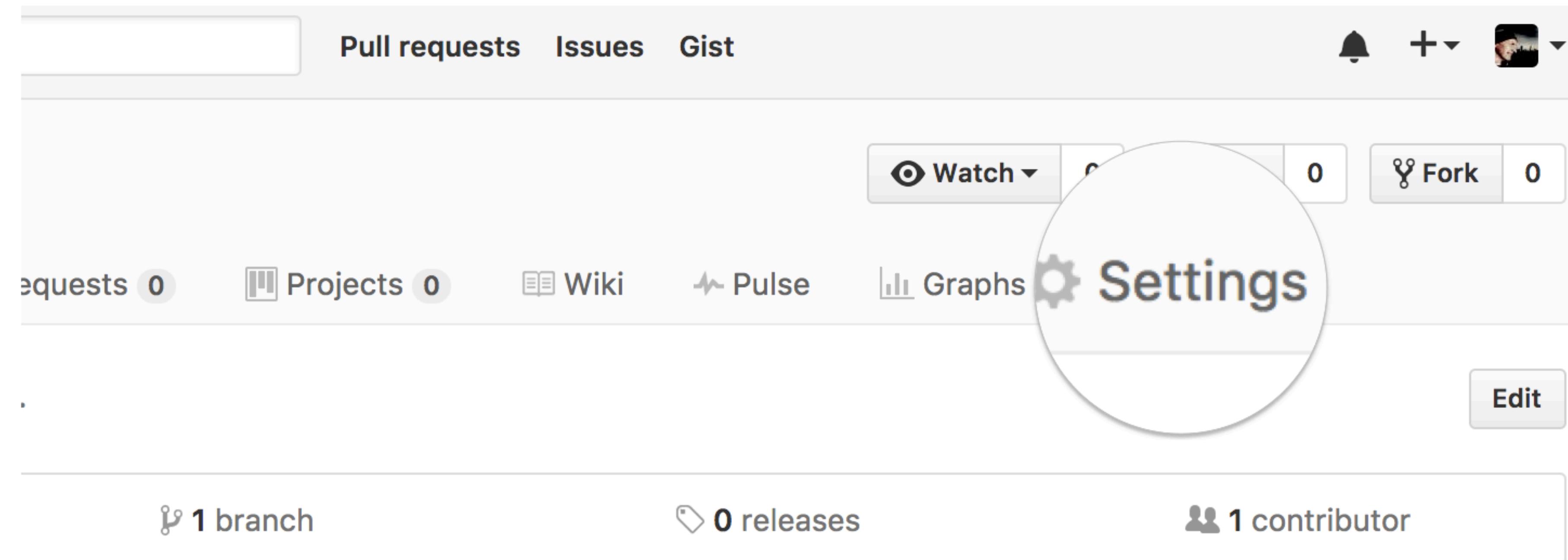


1

# Repository Settings

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

Click on the **Settings** tab.



## Theme chooser

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

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

General

Access

Collaborators

Moderation options

Code and automation

Branches

Tags

Actions

Webhooks

Environments

Codespaces

Pages

GitHub Pages

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

Build and deployment

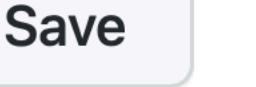
Source

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) ▾ 

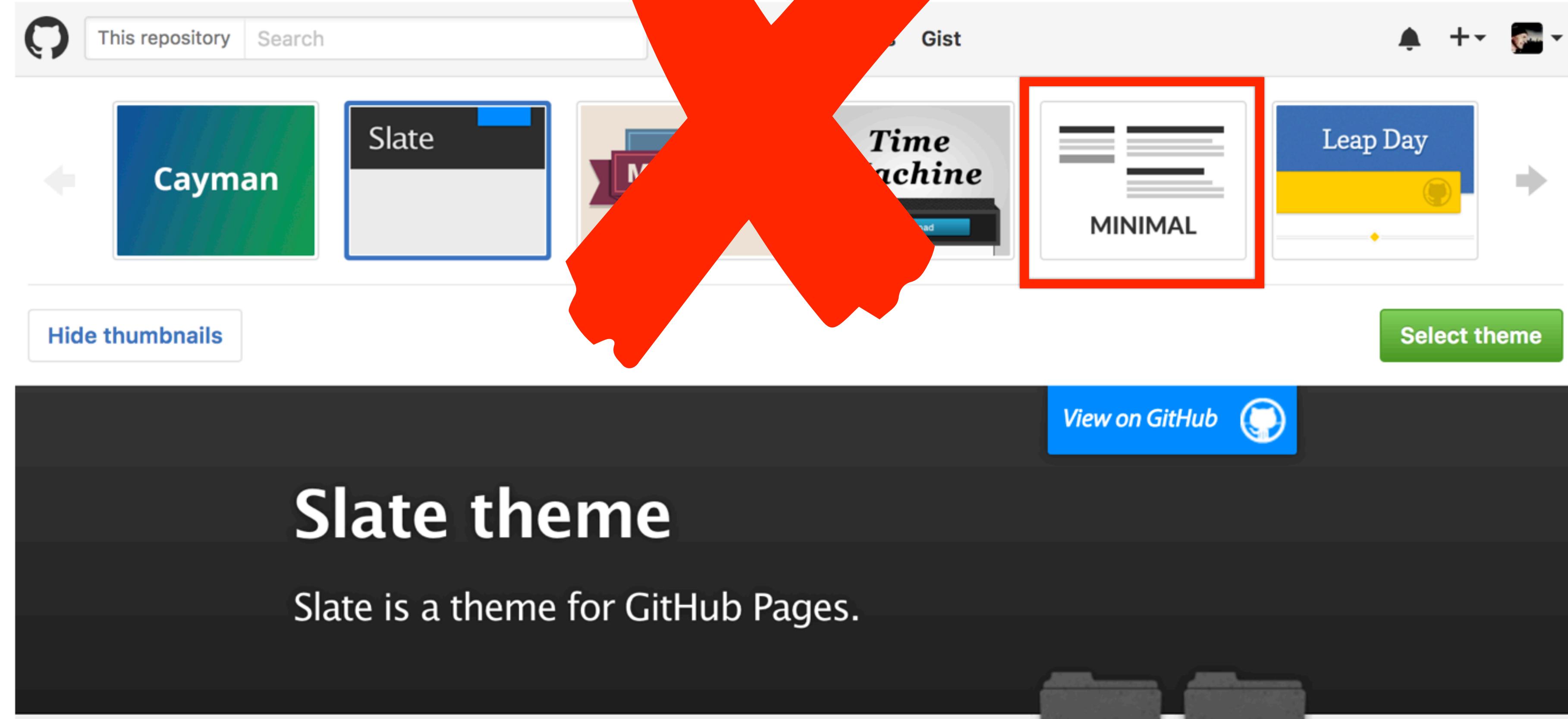
 Publish privately to people with read access to this repository

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

## Pick a theme

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

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



## 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/](https://bioboot.github.io/bimm143_serina_f18/).

#### Source

Your GitHub Pages site is currently being built from the `master` branch. [Learn more.](#)

[master branch ▾](#)

[Save](#)

#### Theme Chooser

Select a theme to publish your site with a Jekyll theme. [Learn more.](#)

Your site is currently using the Minimal theme.

[Change theme](#)

## 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**

The screenshot shows the GitHub repository interface for 'jldec / new-pages-site'. The top navigation bar includes the repository name, a 'Watch' button (0), a 'Star' button (0), and a 'Fork' button (0). Below the navigation bar are links for 'Issues 0', 'Pull requests 0', 'Projects 0', 'Wiki', 'Pulse', 'Graphs', and 'Settings'. The main content area shows the 'new-pages-site / README.md' file being edited. The file contains the following Markdown content:

```
1 ## Welcome to GitHub Pages
2
3 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.
4
5 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.
6
7 ### Markdown
8
9 Markdown is a lightweight and easy-to-use syntax for styling your writing. It includes conventions for
10
11 ````markdown
12 Syntax highlighted code block
13
14 # Header 1
```

# Commit

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

```
35  ### Support or Contact  
36  
37  Having trouble with Pages? Check out our \[documentation\]\(https://help.github.com/categories/gi\)  
\(\) and we'll help you sort it out.  
38
```



## Commit changes

Add content to new pages site

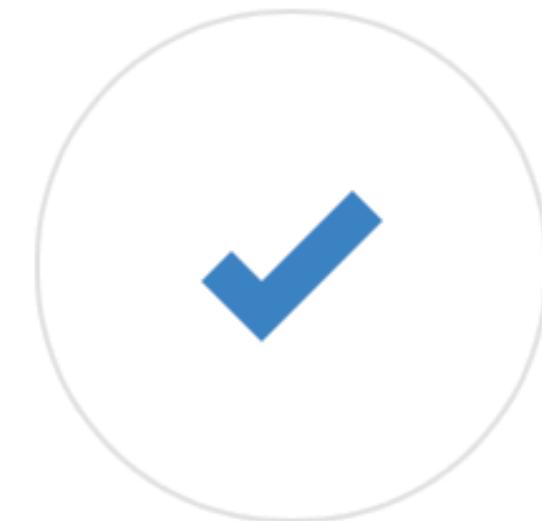
Add an optional extended description...

Commit directly to the `master` branch.

6

...and you're done!

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



The screenshot shows a web browser window with the URL [bioboot.github.io/bimm143-1/](https://bioboot.github.io/bimm143-1/) in the address bar. The page content is as follows:

# 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](#)

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- [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)

Y bioboot / bimm143\_serina\_f18  
forked from serinahuang/bimm143

Unwatch 1 Star 0 Fork 1

Code Pull requests 0 Projects 0 Wiki Insights Settings

Branch: master bimm143\_serina\_f18 / \_config.yml Find file Copy path

bioboot Update \_config.yml 3b72493 just now

1 contributor

4 lines (3 sloc) | 151 Bytes Raw Blame History

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

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**Introduction to Bioinformatics**



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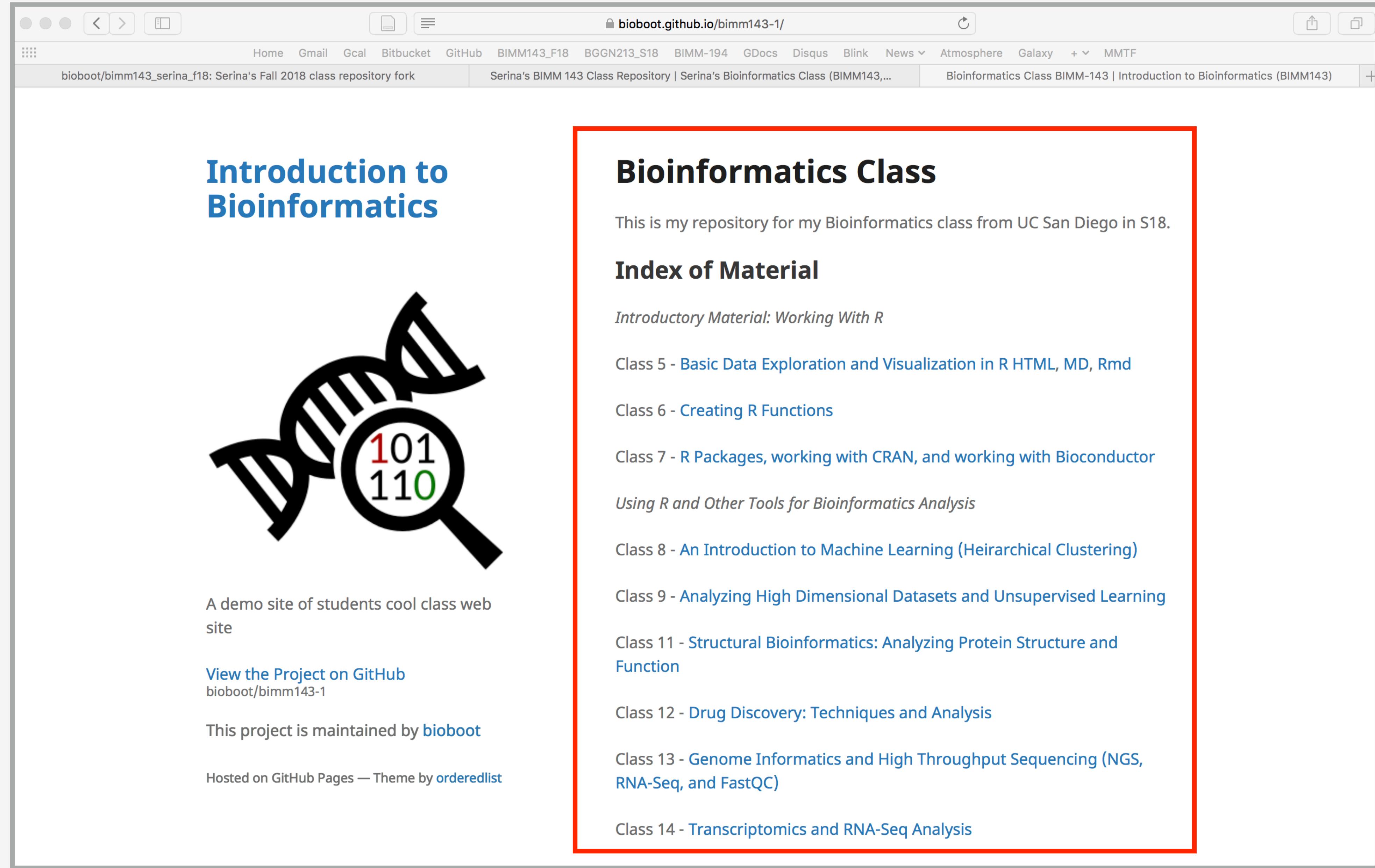
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The screenshot shows a GitHub repository page for 'bioboot / tmp\_test'. The repository has 1 unwatched star and 0 forks. The navigation bar includes links for Code, Issues (0), Pull requests (0), Projects (0), Wiki, Insights, and Settings. Below the navigation bar, the file 'tmp\_test / README.md' is selected. A preview button and a cancel link are visible. The main content area shows the README.md file's text:

```
1 # BIMM143 Classwork
2
3 This is a store of my class-work for [BIMM143 Winter 2019](https://bioboot.github.io/bimm143_W19/) at UC San Diego.
4
5 ## Content
6 - Class05: [R fundamentals](https://github.com/bioboot/tmp_test/blob/master/class05/class05.md)
7 - Class06: [R graphics]()
8 - Class07: R Functions
9 - Class08: R packages from CRAN, Bioconductor and GitHub
10 - Class09: Introduction to machine learning
11 - Class10: Some thing else
12 - Class11: (Structural Bioinformatics](https://github.com/bioboot/tmp_test/blob/master/class11/class11.md)
13 - Class12: etc. etc.
14
```

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



**bioboot/bimm143\_serina\_f18: Serina's Fall 2018 class repository fork**

**Serina's BIMM 143 Class Repository | Serina's Bioinformatics Class (BIMM143,...)**

**Bioinformatics Class BIMM-143 | Introduction to Bioinformatics (BIMM143)**

# Introduction to Bioinformatics



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# Thank you very much!

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

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

The screenshot shows a web browser window for the DataCamp website ([www.datacamp.com/tracks/custom-bioinformatics-extension](https://www.datacamp.com/tracks/custom-bioinformatics-extension)). The page title is "CUSTOM TRACK Bioinformatics Extension". The main content area describes Barry's suggested DataCamp courses for delving deeper into R, Git, the Shell, data visualization, and Bioinformatics data analysis generally. It includes a yellow "Enroll" button, a DNA helix icon with a magnifying glass over binary code (101 110), and a summary of 111 hours and 26 Courses across R Language, Shell, Git, and Spreadsheets.

**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!

**Enroll**

R Language | Shell | Git | Spreadsheets | 111 hours | 26 Courses

**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**

# 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.

# The future? Combining AI and Physics based approaches

Missing class!

The screenshot shows the homepage of the AlphaFold Protein Structure Database. At the top, there is a dark grey header bar with the EMBL-EBI logo and links for Services, Research, Training, About us, and a green circular icon. Below this is a blue navigation bar with the text "AlphaFold Protein Structure Database" on the left and "Home", "About", "FAQs", and "Downloads" on the right. The main content area has a blue background featuring a faint protein structure model. The title "AlphaFold Protein Structure Database" is prominently displayed in large white font. Below the title, it says "Developed by DeepMind and EMBL-EBI". A search bar at the bottom left contains the placeholder text "Search for protein, gene, UniProt accession or organism" and includes a "BETA" button and a "Search" button. Below the search bar, there is a row of example search terms: "Free fatty acid receptor 2", "At1g58602", "Q5VSL9", "E. coli", and "Help: AlphaFold DB search help". At the very bottom, a light blue footer bar contains the text "AlphaFold DB provides open access to protein structure".