





Getting Started

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Required folder structure.

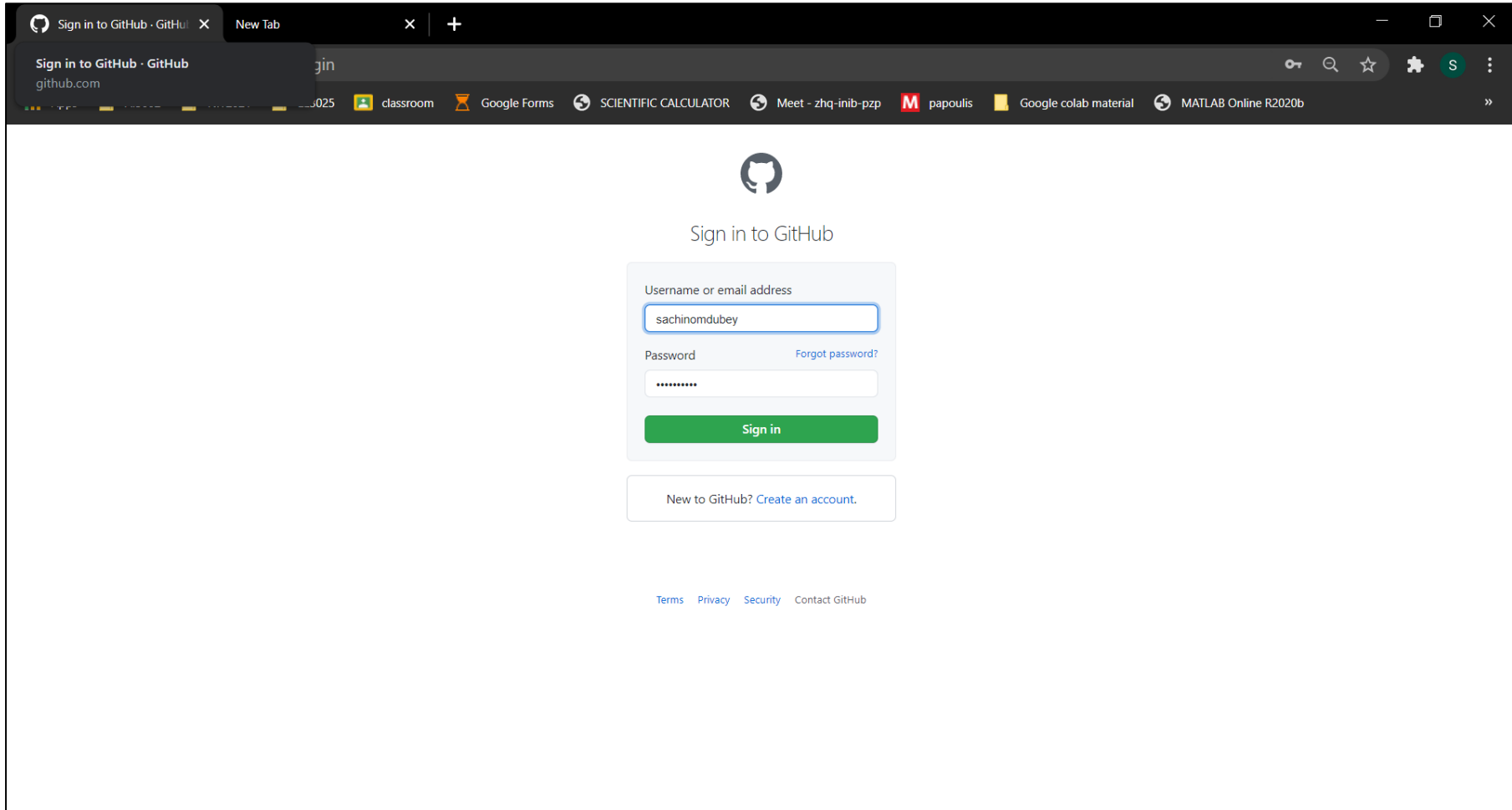
The folder structure for each of the assignments should be as below:

Name	Date modified	Type	Size
 codes	02-09-2020 20:38	File folder	
 Figures	12-03-2021 12:03	File folder	
 Assignment1	02-09-2020 13:00	Adobe Acrobat D...	55 KB
 Assignment1	02-09-2020 13:01	TeX Document	6 KB

Getting started with GitHub.

Signing in and creating repository

1. After signing up in GitHub (with any Gmail account). Sign into your GitHub account.



The screenshot shows a web browser window with the GitHub sign-in page. The browser's address bar shows 'github.com' and the page title is 'Sign in to GitHub · GitHub'. The page features the GitHub logo at the top center, followed by the text 'Sign in to GitHub'. Below this is a sign-in form with two input fields: 'Username or email address' (containing 'sachinomdubey') and 'Password' (masked with dots). A 'Forgot password?' link is next to the password field. A green 'Sign in' button is at the bottom of the form. Below the form is a link for 'New to GitHub? Create an account.' At the very bottom, there are links for 'Terms', 'Privacy', 'Security', and 'Contact GitHub'.

Sign in to GitHub · GitHub

github.com

Sign in to GitHub

Username or email address

sachinomdubey

Password

Forgot password?

Sign in

New to GitHub? [Create an account.](#)

[Terms](#) [Privacy](#) [Security](#) [Contact GitHub](#)

2. Create a separate repository for this course by using below steps:

The screenshot shows the GitHub homepage for a user signed in as 'sachinmdubey'. The user menu is open, and 'Your repositories' is highlighted with a red box. The main content area features a large green banner with the text 'Learn Git and GitHub without any code!' and two buttons: 'Read the guide' and 'Start a project'. Below the banner, there is a section for 'narasimha-123' who forked 'sachinmdubey/Matrix-theory' from 'sachinmdubey/Matrix-theory' on Feb 10. The left sidebar shows a list of repositories under the 'sachinmdubey' organization, including 'Matrix-theory', 'Probability', 'Cricket_ball_exp', 'school', 'EE5609', and 'Probabilistic-Graphical-Models'. The right sidebar shows a list of repositories under the 'sachinmdubey' organization, including 'Final Project of Job Connection and Machine Learning Pur...', 'Jupyter Notebook', 'Ironhack-Data-Madrid-En...', 'Jupyter Notebook', 'AhmedGharib0014/Program by-Duke-university', and 'Explore more →'.

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

Signed in as sachinmdubey

Set status

Your profile

Your repositories

Your projects

Your stars

Your gists

Upgrade

Feature preview

Help

Settings

Sign out

Repositories

New

Find a repository...

sachinmdubey/Matrix-theory

sachinmdubey/Probability

sachinmdubey/Cricket_ball_exp

sachinmdubey/school

sachinmdubey/EE5609

sachinmdubey/Probabilistic-Graphical-Models

Working with a team?

GitHub is built for collaboration. Set up an organization to improve the way your team works together, and get access to more features.

Create an organization

Learn Git and GitHub without any code!

Using the Hello World guide, you'll create a repository, start a branch, write comments, and open a pull request.

Read the guide

Start a project

narasimha-123 forked narasimha-123/Matrix-theory from sachinmdubey/Matrix-theory on Feb 10

sachinmdubey/Matrix-theory

TeX Updated Dec 9

Star

ProTip! The feed shows you events from people you follow and repositories you watch.

Subscribe to your news feed

Explore repositories

PriscillaWidjaja/Final-Proj

Final Project of Job Connection and Machine Learning Pur...

School Jakarta.

Jupyter Notebook


Ironhack-Data-Madrid-En

Jupyter Notebook

AhmedGharib0014/Program by-Duke-university

9

Explore more →



sachinomdubey

Edit profile

Overview

Repositories6

Projects

Packages

ProTip! Updating your profile with your name, location, and a profile picture helps other GitHub users get to know you.

Edit profile

Find a repository...

Type: All

Language: All

New

Probability

Updated 12 minutes ago

☆ Star

Cricket_ball_exp

TeX Updated on Jan 8

☆ Star

Matrix-theory

TeX 1 Updated on Dec 9, 2020


☆ Star

school



Forked from gadepall/school

TeX 30 Updated on Sep 1, 2020

☆ Star



[Pull requests](#) [Issues](#) [Marketplace](#) [Explore](#)

Create a new repository

A repository contains all project files, including the revision history. Already have a project repository elsewhere? [Import a repository.](#)

Owner *

sachinomdubey

Repository name *

demo

Great repository names are short, demo is available. Need inspiration? How about didactic-doodle?

Description (optional)

☒ Public

Anyone on the internet can see this repository. You choose who can commit.

☐ Private

You choose who can see and commit to this repository.

Initialize this repository with:

Skip this step if you're importing an existing repository.

☐ Add a README file

This is where you can write a long description for your project. [Learn more.](#)

☐ Add .gitignore

Choose which files not to track from a list of templates. [Learn more.](#)

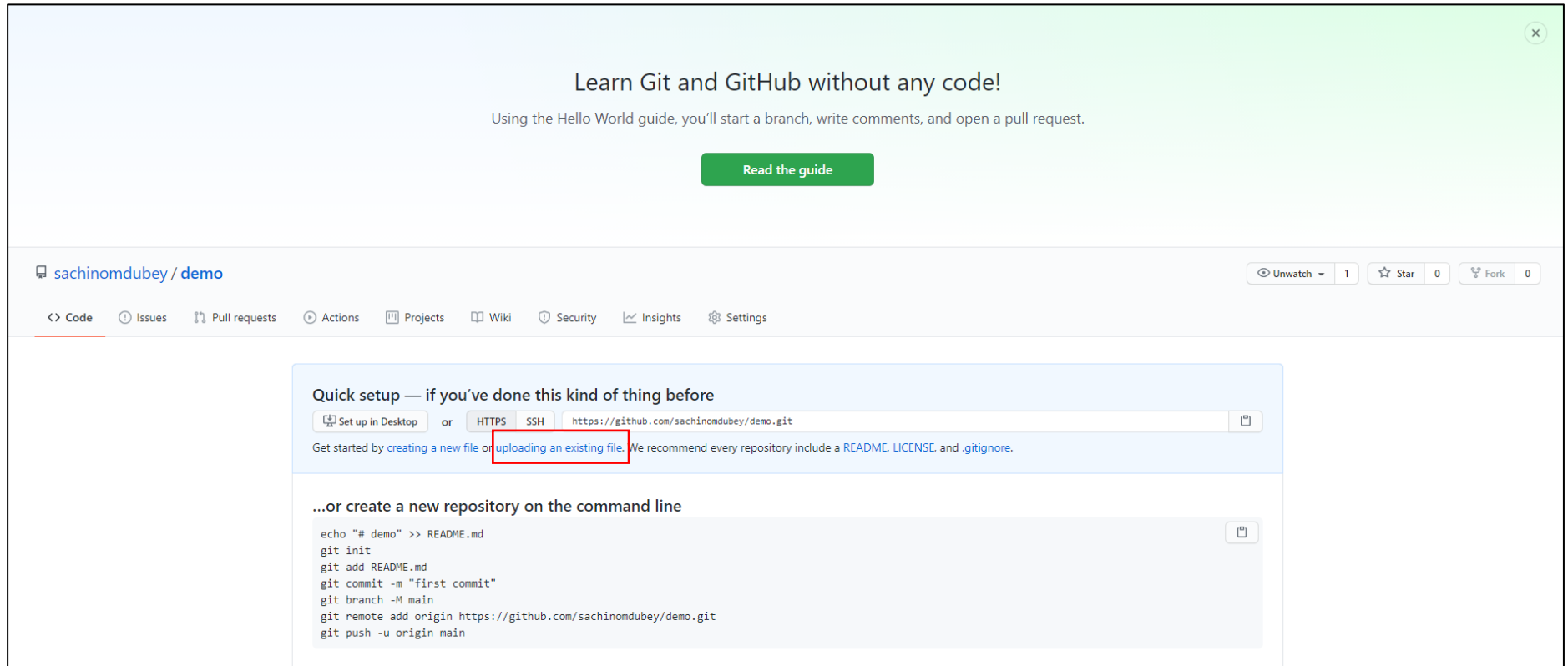
☐ Choose a license

A license tells others what they can and can't do with your code. [Learn more.](#)

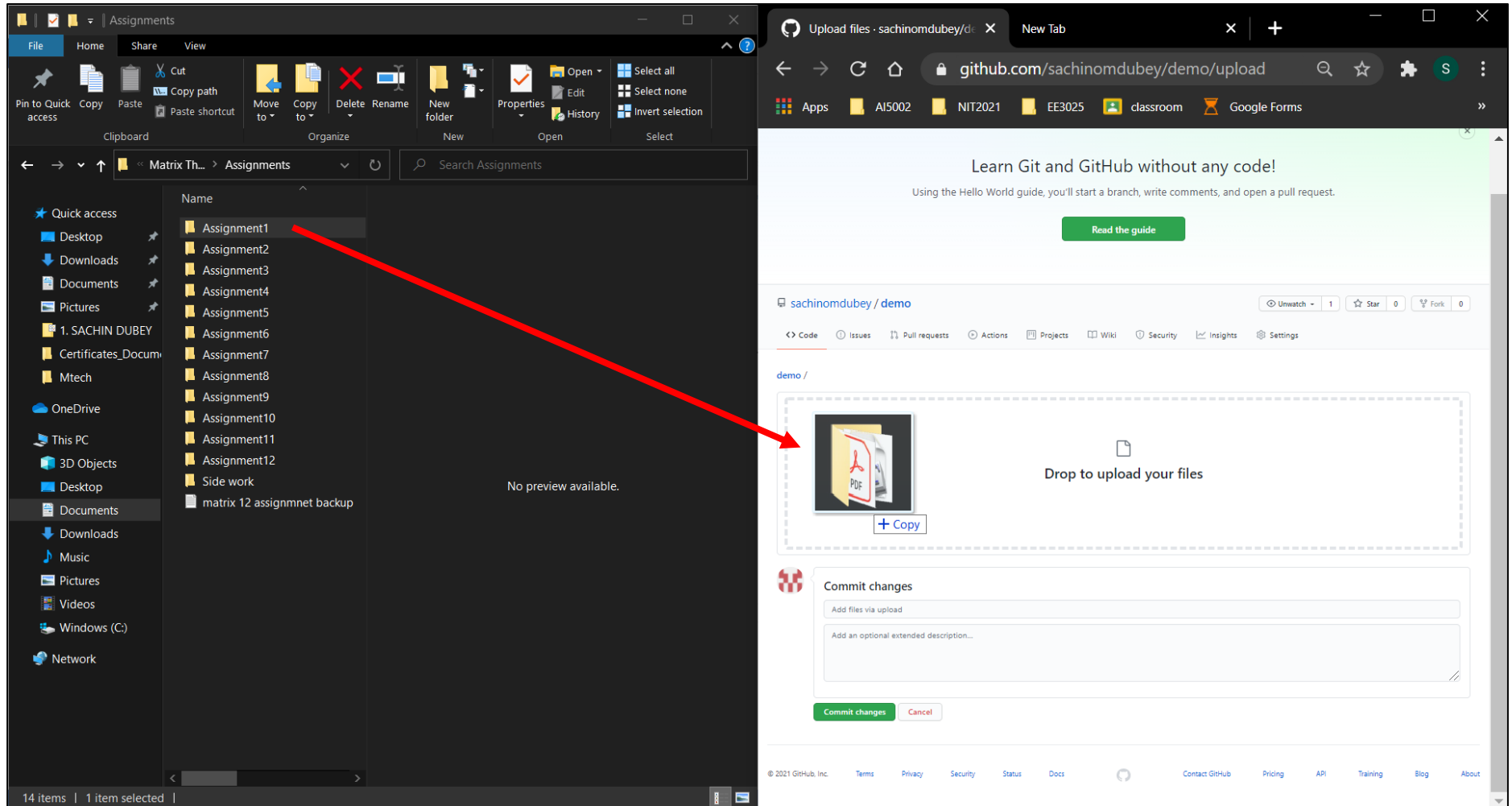
Create repository

Uploading an Assignment

1. Use Uploading option to upload files (you can also upload the entire assignment folder in one go as shown below)




2. Drag and drop the entire assignment folder from file explorer to the GitHub drag and drop window. (Make your assignment folder beforehand in your pc using the folder structure shown in section 1)





3. After uploading, do not forget to click on commit changes to finish the upload properly.


demo /





Drag additional files here to add them to your repository
Or [choose your files](#)


 /Assignment1/Assignment1.pdf





 /Assignment1/Assignment1.tex





 /Assignment1/codes/Assignment1.py




 /Assignment1/codes/coeffs.py



 /Assignment1/Figures/Figure_1.png





Commit changes

Add files via upload

Add an optional extended description...

Commit changes

Cancel

Getting started with Latex:

1. Overleaf is one of the good online latex editors you can use. There are other editors too, you can use as per your convenience.
2. Sign up and login to Overleaf using any Gmail account.

Overleaf

Features & Benefits ▾ Templates Plans & Pricing Help ▾ Register Log In

Log in to Overleaf

Email

Password

Log in with your email

or

Log in with IEEE

Log in with Google

Log in with Twitter

Log in with ORCID

or

Log in through your institution

In Overleaf, Ctrl+S instantly compiles your .tex source code to .pdf file for preview. Hence, it is easier to work with.

The screenshot displays the Overleaf web interface for a project titled "Matrix assignment 7". The left sidebar shows the file "Assignment7.tex" and a file outline with sections "Problem" and "Solution". The main editor area shows the LaTeX source code for "Assignment7.tex", which includes various package imports and a table of contents. The right sidebar shows the compiled PDF preview, which includes the title "Assignment 7", the author "Sachinkumar Dubey - EE20MTECH11009", and the content of the assignment, including a problem statement and a solution.

Source Code (Assignment7.tex):

```

1 \documentclass[journal, 12pt, twocolumn]{IEEEtran}
2
3 \usepackage{setspace}
4 \usepackage{gensymb}
5 \singlespacing
6 \usepackage[cmex10]{amsmath}
7
8 \usepackage{amsthm}
9
10 \usepackage{mathrsfs}
11 \usepackage{txfonts}
12 \usepackage{stfloats}
13 \usepackage{bm}
14 \usepackage{cite}
15 \usepackage{cases}
16 \usepackage{subfig}
17
18 \usepackage{longtable}
19 \usepackage{multirow}
20
21 \usepackage{enumitem}
22 \usepackage{mathtools}
23 \usepackage{steinmetz}
24 \usepackage{tikz}
25 \usepackage{circuitikz}
26 \usepackage{verbatim}
27 \usepackage{tfrupee}
28 \usepackage[breaklinks=true]{hyperref}
29 \usepackage{graphicx}
30 \usepackage{tkz-euclide}
31
32 \usetikzlibrary{calc, math}
33 \usepackage{listings}
34 \usepackage{color}
35 \usepackage{array}
36 \usepackage{longtable}
37 \usepackage{calc}

```

PDF Preview Content:

Assignment 7

Sachinkumar Dubey - EE20MTECH11009

Download all python codes from <https://github.com/sachinodubey/Matrix-theory/Assignment7/codes>

Also, $k_2 = \mathbf{u}_2^T \beta = \begin{pmatrix} 0 & -1 \end{pmatrix} \begin{pmatrix} 0 \\ -1 \end{pmatrix} = 1$ (2.0.9)

The QR decomposition is given as:

and latex-tikz codes from <https://github.com/sachinodubey/Matrix-theory/Assignment7>

$(\alpha \ \beta) = (\mathbf{u}_1 \ \mathbf{u}_2) \begin{pmatrix} k_1 & r_1 \\ 0 & k_2 \end{pmatrix}$ (2.0.10)

Where,

$\mathbf{Q} = (\mathbf{u}_1 \ \mathbf{u}_2)$ (2.0.11)

$\mathbf{R} = \begin{pmatrix} k_1 & r_1 \\ 0 & k_2 \end{pmatrix}$ (2.0.12)

1 PROBLEM
(Rams 3.4.1) find the QR decomposition of the following:

Putting the values of $\mathbf{u}_1, \mathbf{u}_2, k_1, k_2$ and r_1 in equation (2.0.10):

$\mathbf{V} = \begin{pmatrix} 1 & 0 \\ 0 & -1 \end{pmatrix}$ (1.0.1)

$\mathbf{V} = \begin{pmatrix} 1 & 0 \\ 0 & -1 \end{pmatrix} \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$ (2.0.13)

2 SOLUTION
Here, let the column vectors of \mathbf{V} be α and β :

$\alpha = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$ (2.0.1)

$\beta = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$ (2.0.2)

To find $\mathbf{Q} = (\mathbf{u}_1 \ \mathbf{u}_2)$, we will orthonormalise the columns of \mathbf{V} using Gram Schmit method:

$\mathbf{u}_1 = \frac{\alpha}{k_1}$ (2.0.3)

$k_1 = \|\alpha\| = \sqrt{1^2 + 0^2} = 1$ (2.0.4)

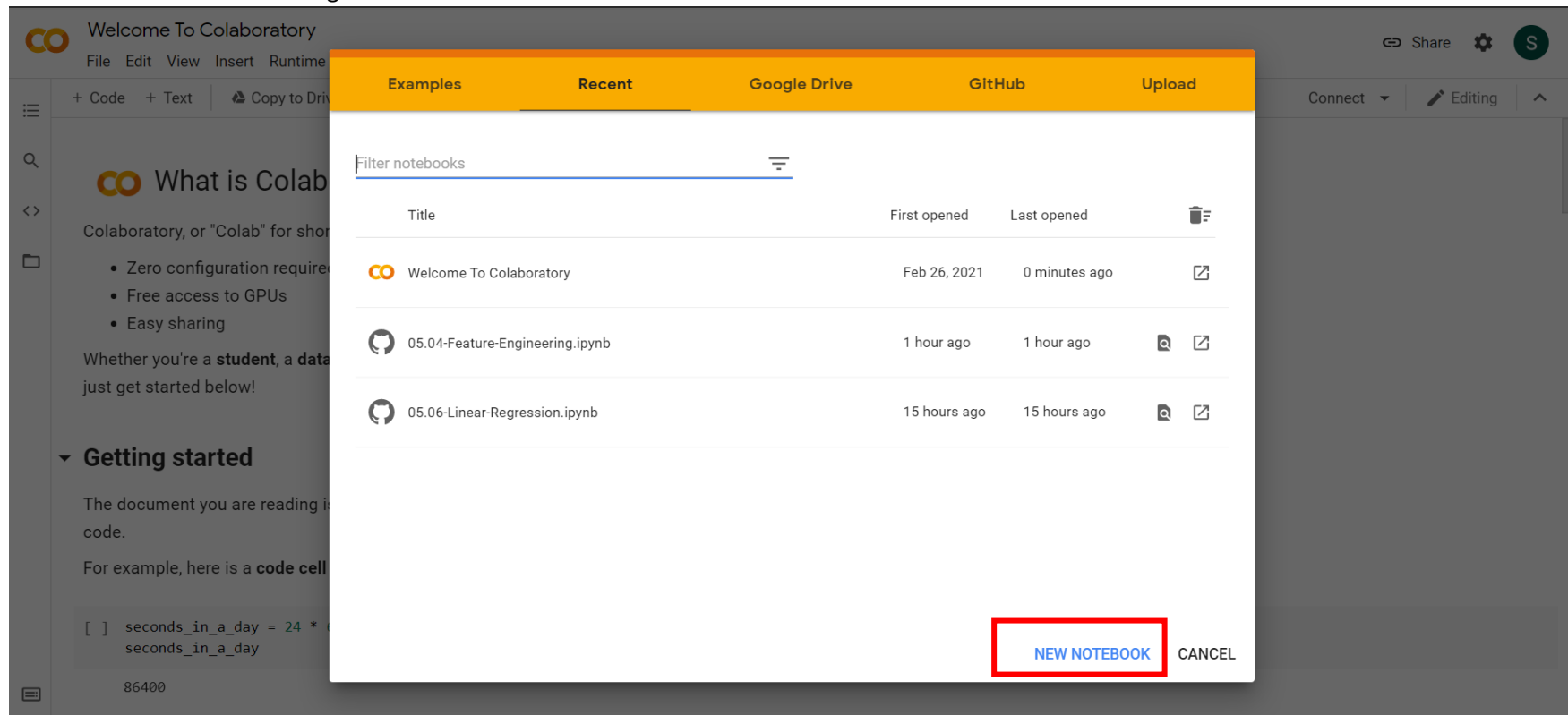
NOTE: Here, Matrix \mathbf{V} already had orthonormal column vectors. Hence, The obtained \mathbf{Q} by Gram schmit method is same as \mathbf{V} and the obtained \mathbf{R} is an identity matrix.


3. You can use this .tex file as a template for your assignments (Need not write the .tex source code from scratch)

<https://github.com/sachinodubey/Matrix-theory/blob/master/Assignment7/Assignment7.tex>

Getting started with Python:

1. You can use any **python IDE** for creating your python programs. At the end, you need to upload only the **.py** file in the **“codes”** folder of your respective assignment.
2. I would recommend google colab as it does not require any installation. Just go to google colab, login using your IITH Id (or any Gmail id), create a new notebook and start writing the code.



 Untitled0.ipynb ☆

File Edit View Insert Runtime Tools Help [All changes saved](#)

+ Code + Text

RAM Disk

Editing

↑ ↓ ↻ ⌨ ⚙ 📄 🗑 ⋮

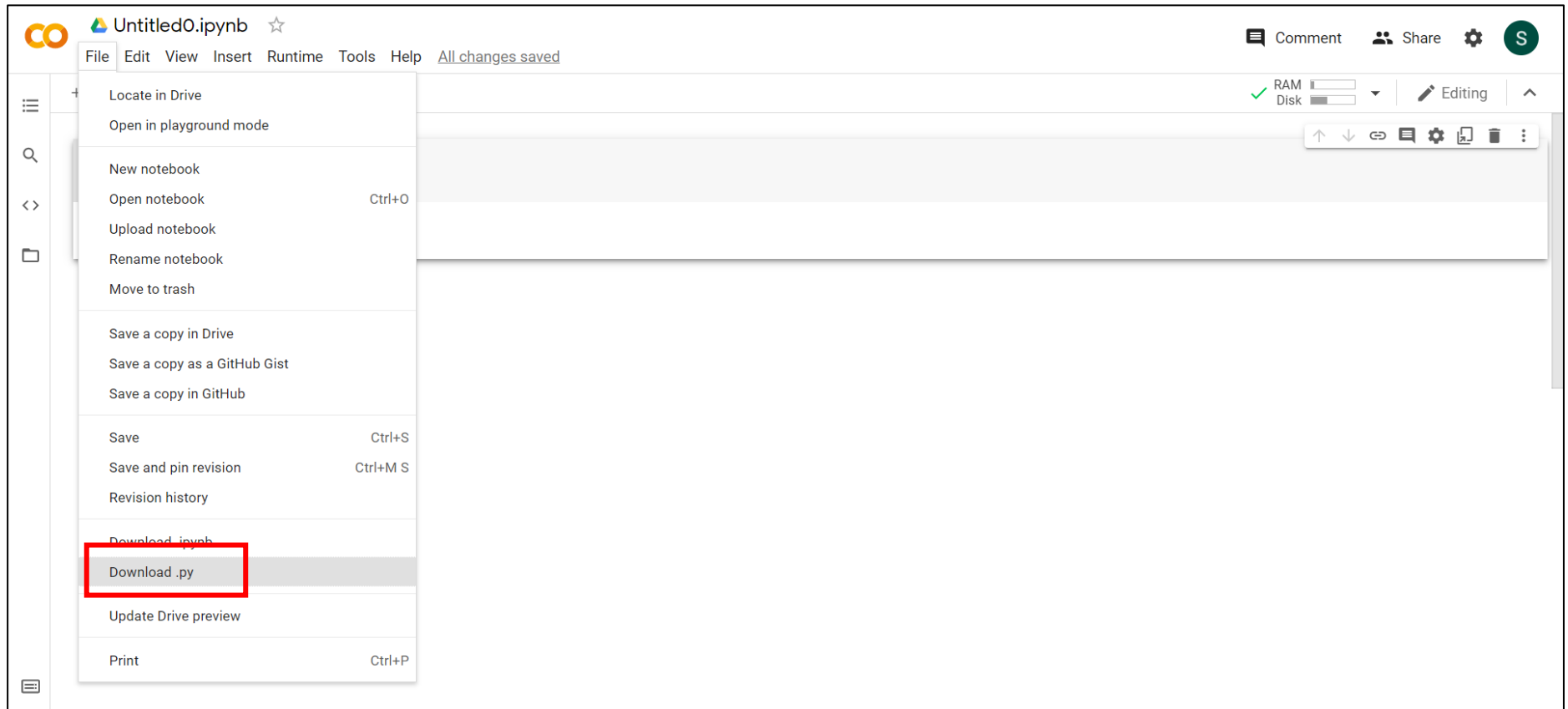
▶

```
print("Hello World")
print("Probability theory")
```

↗

Hello World
Probability theory

3. When you are finish writing and executing your code, you can download the .py file from the file menu and upload it on GitHub.



Sharing Assignments on Piazza

After Uploading the assignment on GitHub (as per the mentioned folder structure in section1). You need to share the GitHub link in the thread for that respective assignment (E.g., Assignment-1 GitHub link needs to be share in Assignment1 thread by adding a new follow up discussion)

The screenshot displays the Piazza web interface for the course AI 5002/1103. The top navigation bar includes links for Q & A, Resources, Statistics, and Manage Class. The left sidebar shows a list of assignments, with 'Assignment 1' dated 1/8/21 highlighted. The main content area shows a thread of discussions. A red box highlights the 'Start a new followup discussion' button and the text input field for composing a new followup discussion.

Assignment 1 1/8/21
Hi Everyone, Jayati Dutta and Jayati Dutta have been allocated as TA for this course. As per sir's instruction we will start with

Start a new followup discussion
Compose a new followup discussion

PIAZZA AI 5002/1103 Q & A Resources Statistics Manage Class Search Companies Sachinkumar

LIVE Q&A Drafts hw1 hw2 hw3 hw4 hw5 hw6 hw7 hw8 hw9 hw10 project exam logistics other

Unread Updated Unresolved Following Ban User Console Note History disable history

New Post Search or add a post...

Assignment 2 1/11/21

Course Schedule 1/10/21
Monday: 12-1 Tuesday: 9-10 Friday: 11-12 every week for the entire semester. Join using the following link for all sessions.

WEEK 1/3 - 1/9

Assignment 1 1/8/21
Hi Everyone, I and Jayati Dutta have been allocated as TA for this course. As per sir's instruction we will start with

Introduce Piazza to your stu... 1/8/21

Get familiar with Piazza 1/8/21

Tips & Tricks for a successf... 1/8/21

Welcome to Piazza! 1/8/21
Piazza is a Q&A platform designed to get you great answers from classmates and instructors fast. We've put together thi

Start a new followup discussion

☒ Rich text editor ☐ Plain text editor ☐ Markdown editor Report any bugs with our editor to bugs@piazza.com

Insert Format Table

B *I* [List Icons] [Link Icon] [Image Icon] [Code Icon] f(x) {} TT ...

<https://github.com/sachinomdubey/Matrix-theory/tree/master/Assignment7>

Visible to ☒ everyone who sees this post ☐ Instructors only

post save draft preview cancel

DONE!!