MALAD KANDIVALI EDUCATION SOCIETY'S

NAGINDAS KHANDWALA COLLEGE OF COMMERCE, ARTS & MANAGEMENT STUDIES & SHANTABEN NAGINDAS KHANDWALA COLLEGE OF SCIENCE

MALAD [W], MUMBAI – 64

AUTONOMOUS INSTITUTION (Affiliated To University Of Mumbai)
Reaccredited 'A' Grade by NAAC | ISO 9001:2015 Certified

.

CERTIFICATE

Name: SIDDH KIRAN SHAH

Roll No: 77 **Programme: BSc IT** **Semester: II**

This is certified to be a bonafide record of practical work done by the above student in the college laboratory for the course IT Platforms,Tools and Practises for the partial fulfillment of Second Semester of BSc IT during the academic year 2021-22.

The journal work is the original study work that has been duly approved in the year 2021-2022 by the undersigned.

Ms. Anisha Asirvatham
(Subject-In-Charge)

Examiner
(External)

Date of Examination:

(College Stamp)

Name: Siddh Kiran Shah **Roll No: 77**

Sr. No.	DATE	TITLE	SIGN
1.		Creating account, repository on GitHub and Cloning repository in GitHub Page	
2.		WRITING EMAIL	
3.		BASIC UNDERSTANDING ON FREE AND OPEN-SOURCE SOFTWARE a) Describe Open-Source Software with Example. b) Describe Free Software with Example c) Difference between Free and Open-Source Software.	
4.		INTRODUCTION and CONTRIBUTING TO WIKIPEDIA a) What is Wikipedia? b) Steps to Create Account on Wikipedia c) Creating Page on Wikipedia d) Edit your page	
5.		Using practical examples, describe green computing. List and explain the steps that you take to contribute to green computing	
6.		WRITING BLOGS	
7.		Implementing coding practices in Python using PEP8.	
8.		Importance of The Multidisciplinary Nature of Environmental Studies	
9.		Importance of Going Paperless	
10.		Define the terms renewable resource and non-renewable and give examples of each resource type that are related to forage production	

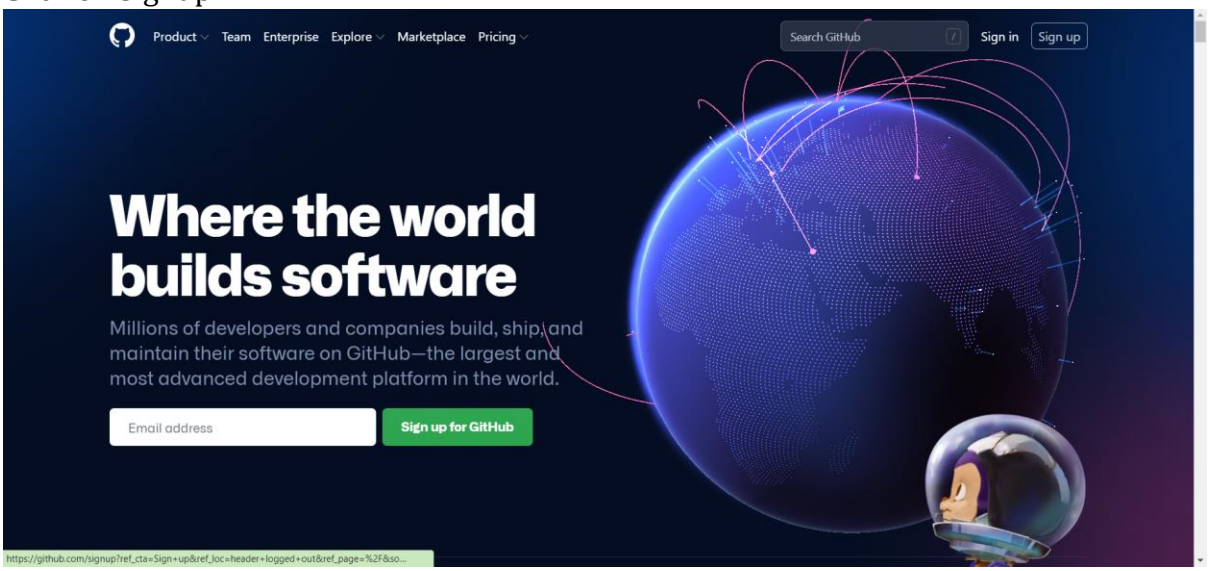
PRACTICAL 01

Aim: Creating account, repository on GitHub and Cloning repository in GitHub page.

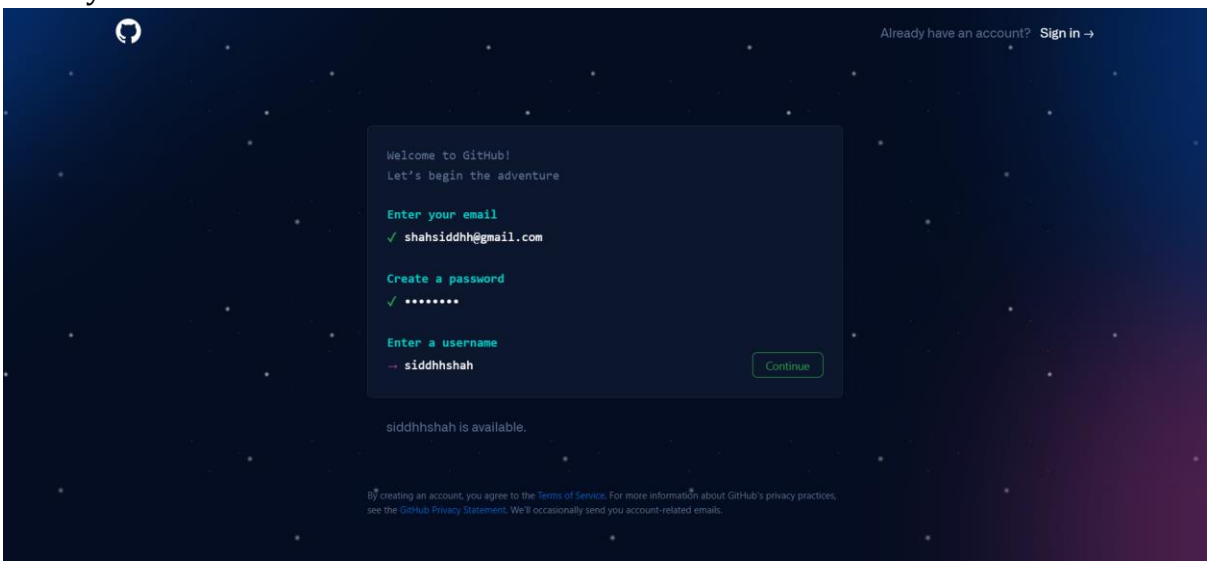
Creating Account

Steps:

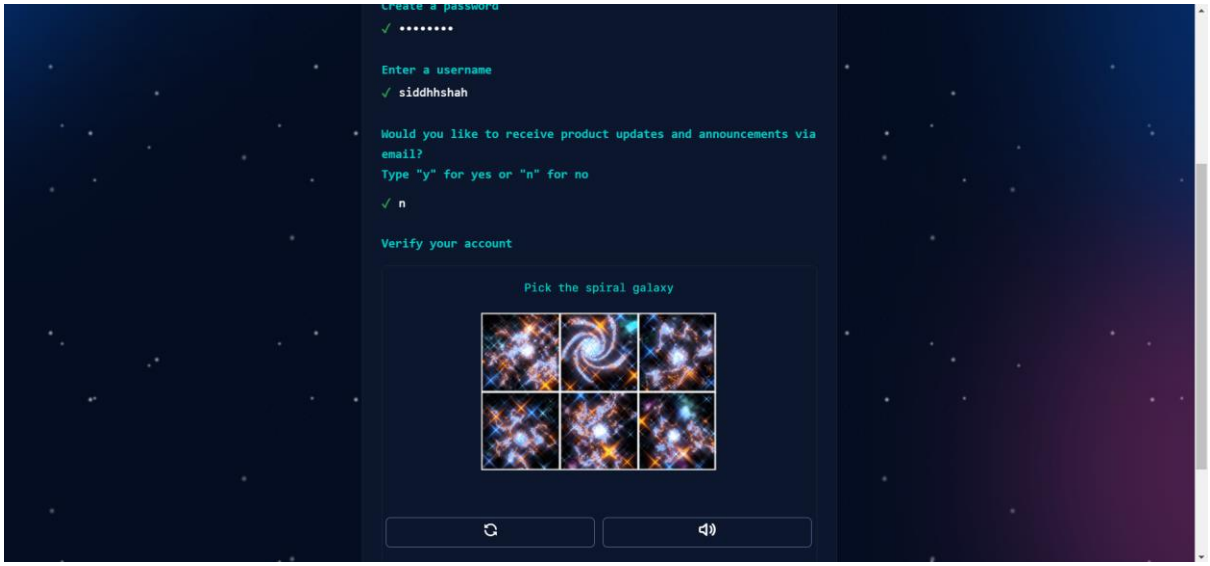
1. Click on Signup



2. Enter your details

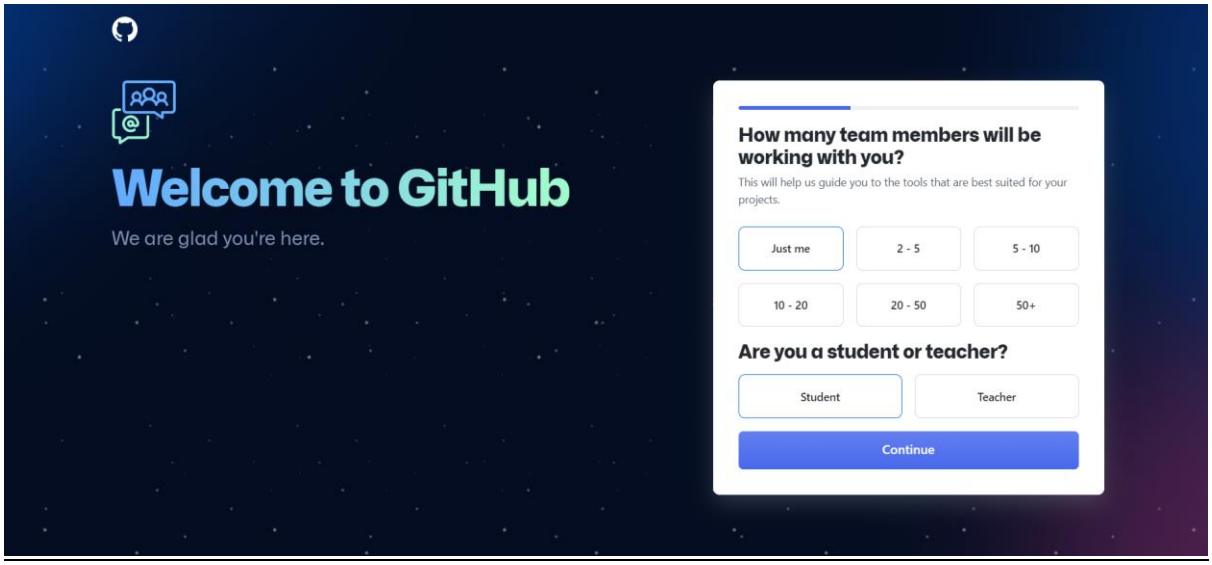


3. Answer Captcha



4. Click Create account & verify your email account using code received on registered email address.

5. Answer these Questions and click on continue

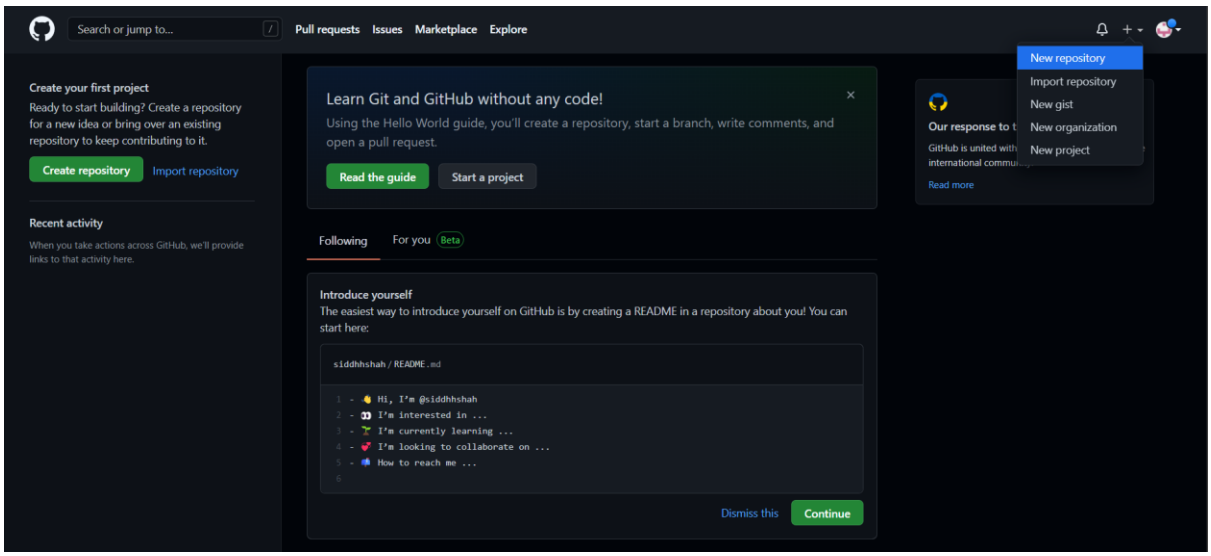


6. Account Successfully Opened

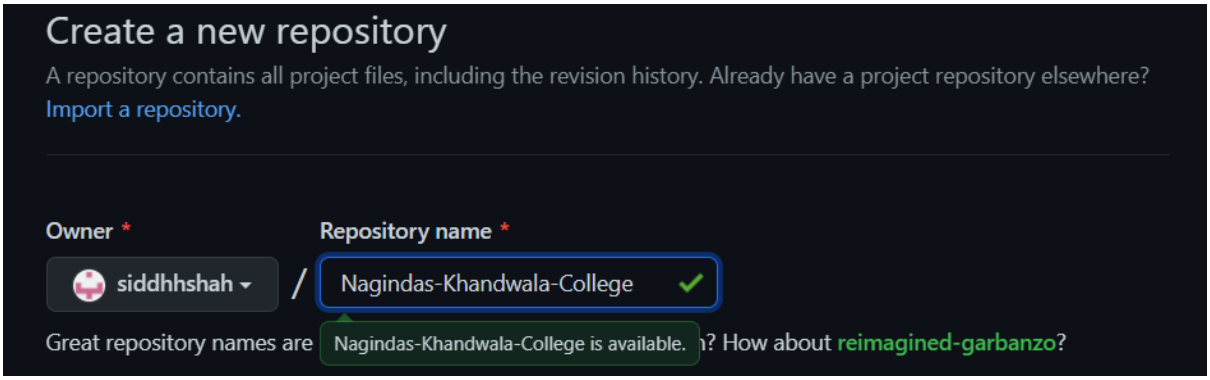
Creating a Repository

Steps:

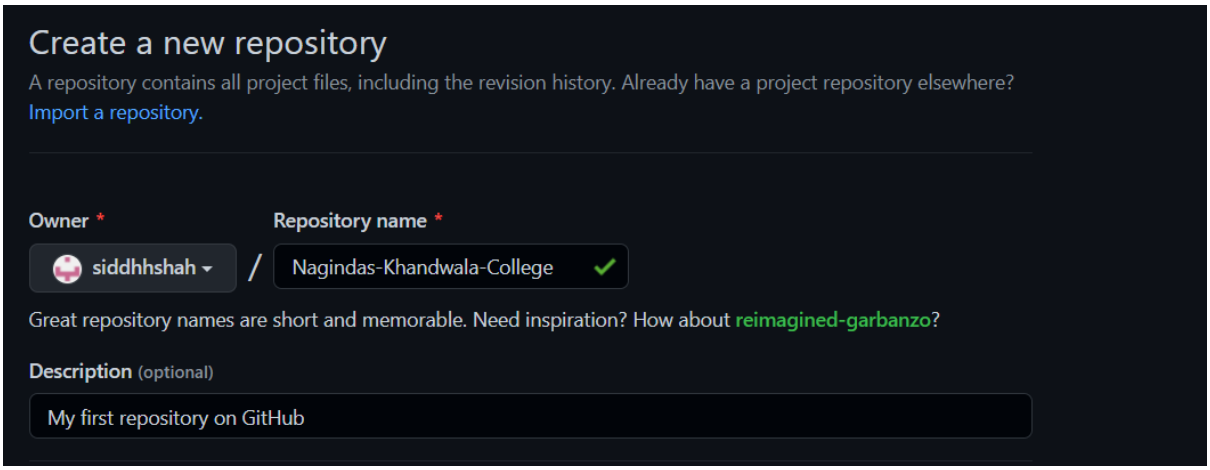
1. In the upper-right corner of any page, use the + drop-down menu, and select New repository.



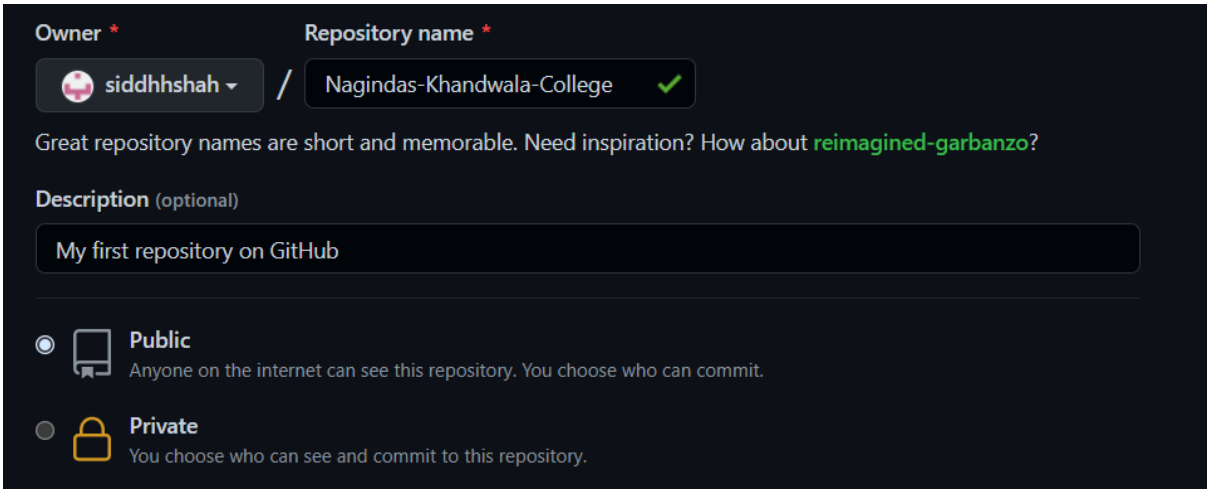
2. Type a short, memorable name for your repository. For example, "Nagindas-Khandwala-College".



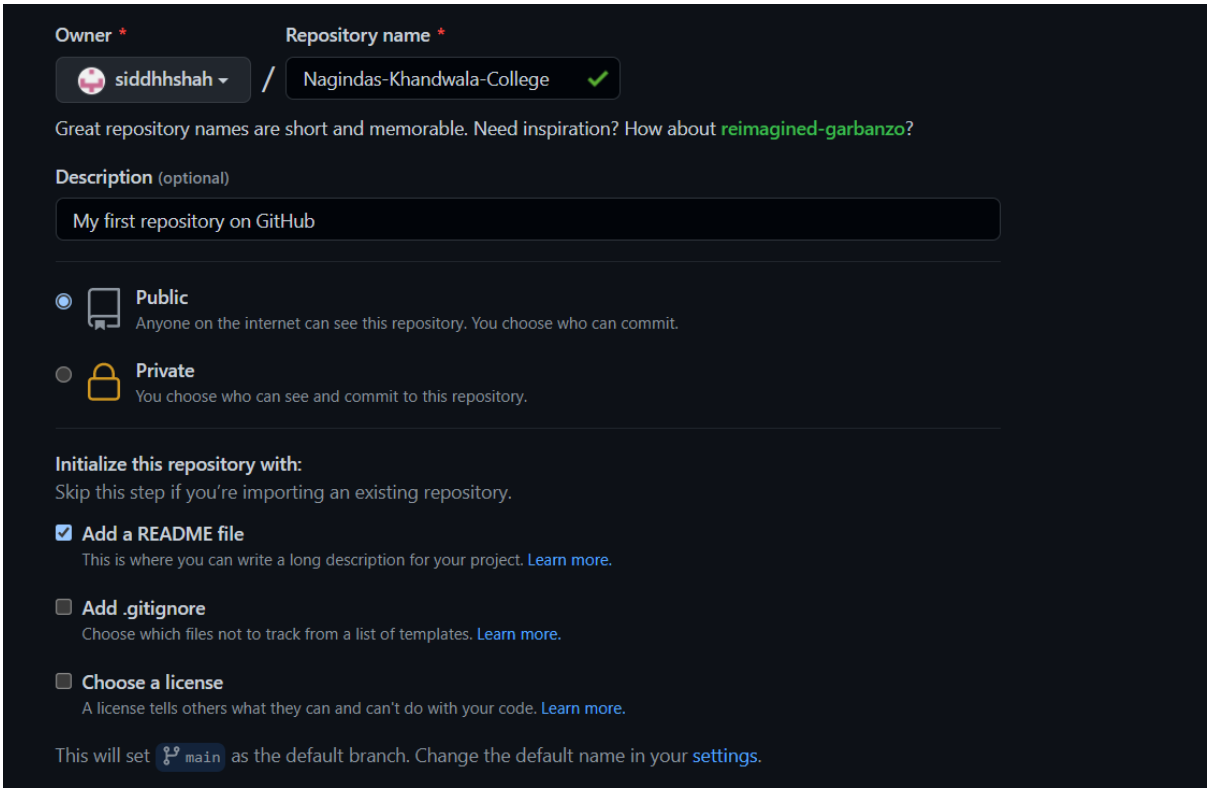
3. Optionally, add a description of your repository. For example, "My first repository on GitHub."



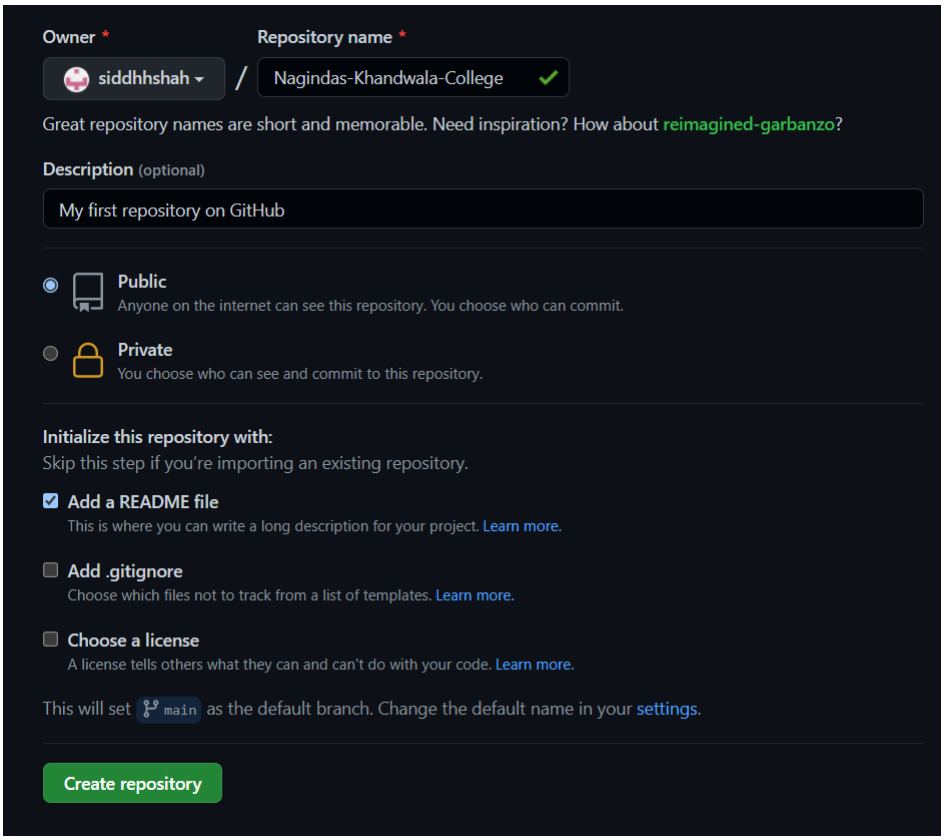
4. Choose a repository visibility. For more information, see "About repositories."



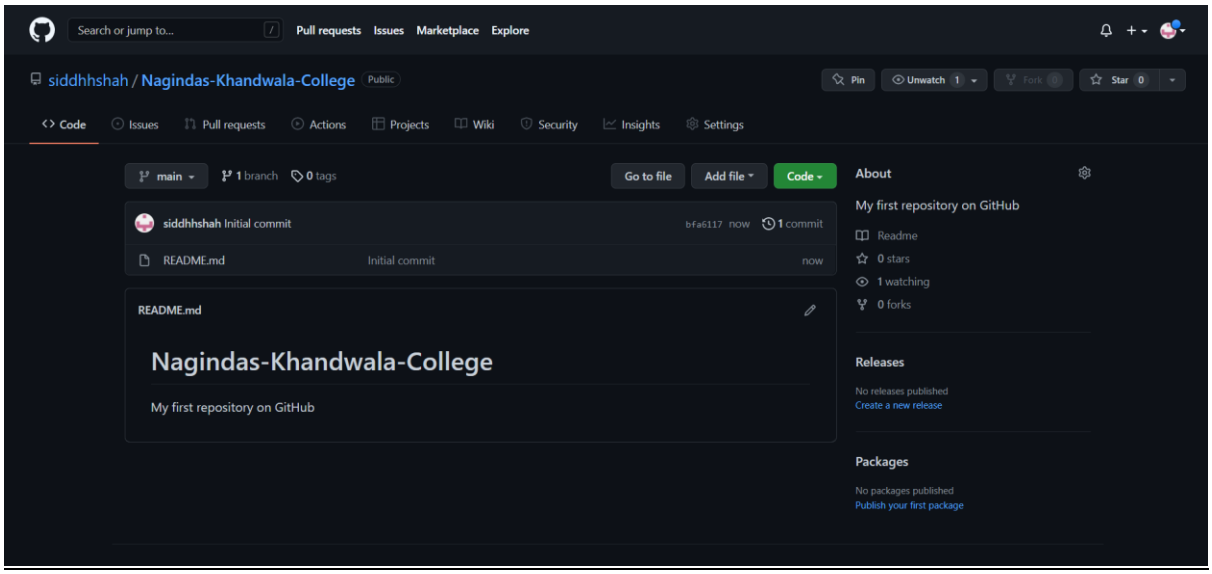
5. Select Initialize this repository with a README.



6. Click Create Repository



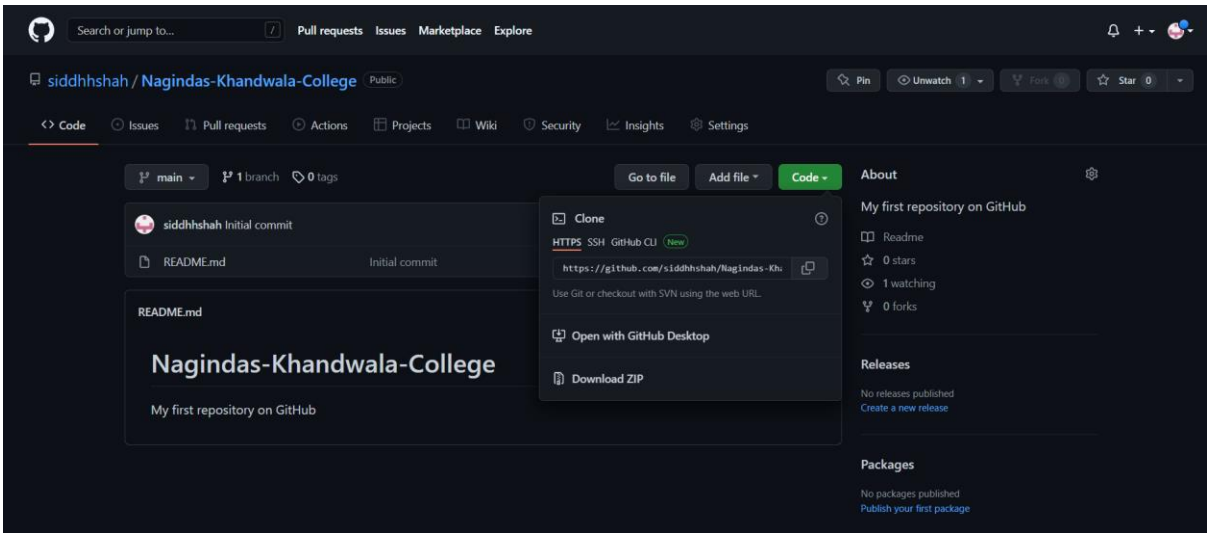
7. Repository is Created



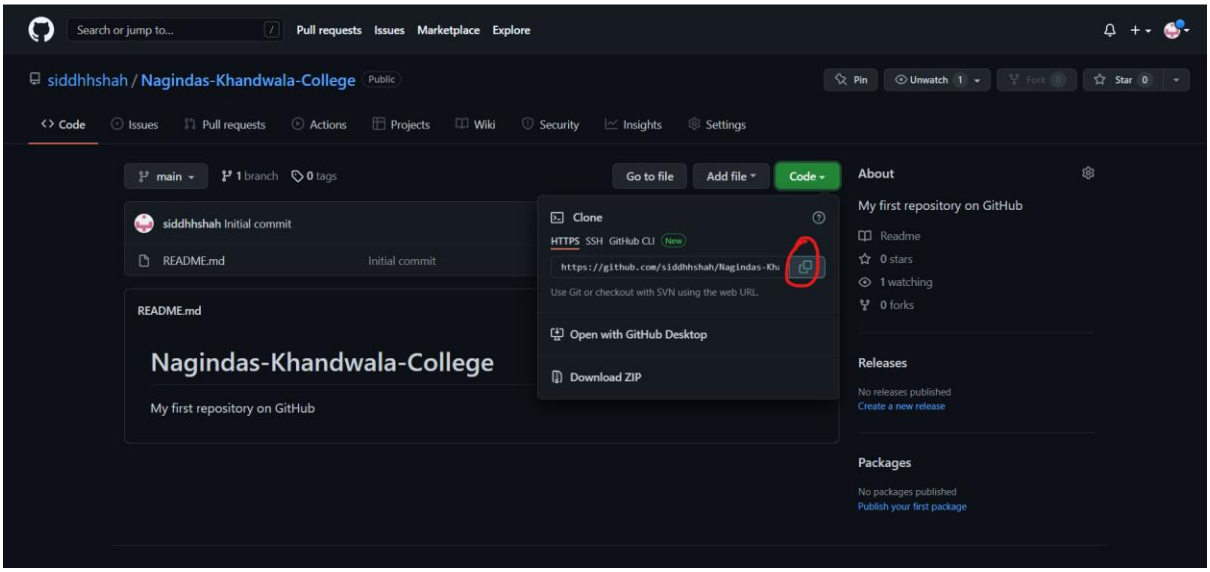
Cloning a Repository

Steps:

1. On GitHub.com, navigate to the main page of the repository.
2. Above the list of files, click Code.



3. To clone the repository using HTTPS, under "Clone with HTTPS", click . To clone the repository using an SSH key, including a certificate issued by your organization's SSH certificate authority, click Use SSH, then click . To clone a repository using GitHub CLI, click Use GitHub CLI, then click .



4. Open Git Bash.
5. Change the current working directory to the location where you want the cloned directory.
6. Type **git clone**, and then paste the URL you copied earlier.

   Syntax:
   $ git clone https://github.com/siddhhshah/Nagindas-Khandwala-College.git

7. Press Enter to create your local clone.

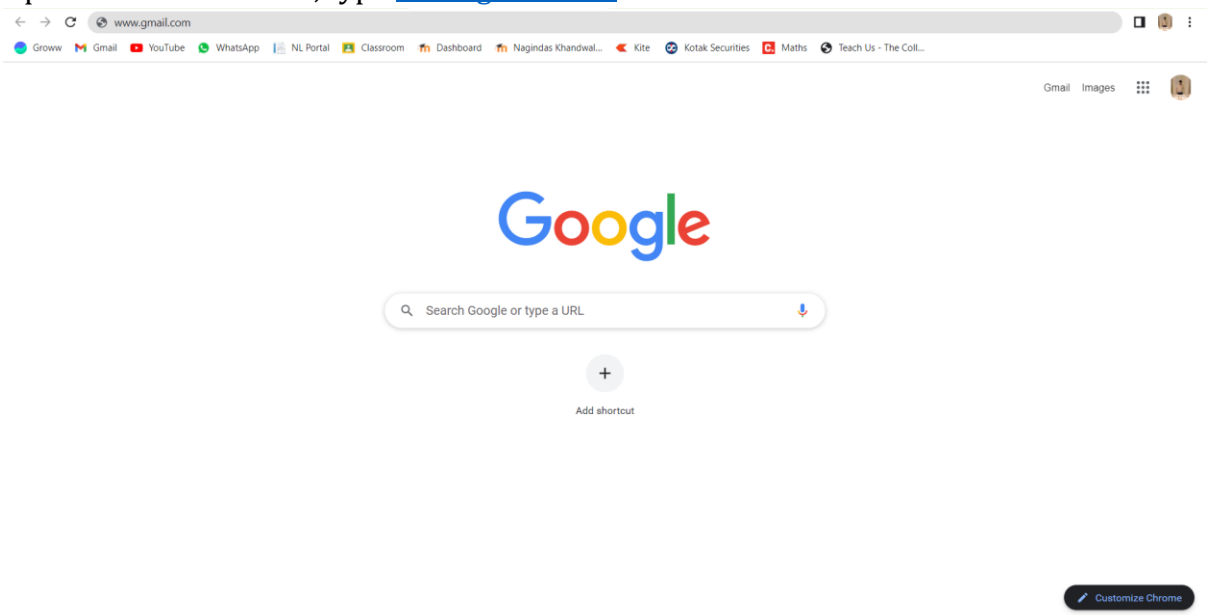
   $ git clone https://github.com/siddhhshah/Nagindas-Khandwala-College.git
   > Cloning into `Spoon-Knife`...
   > remote: Counting objects: 10, done.
   > remote: Compressing objects: 100% (8/8), done.
   > remove: Total 10 (delta 1), reused 10 (delta 1)
   > Unpacking objects: 100% (10/10), done.

PRACTICAL 02

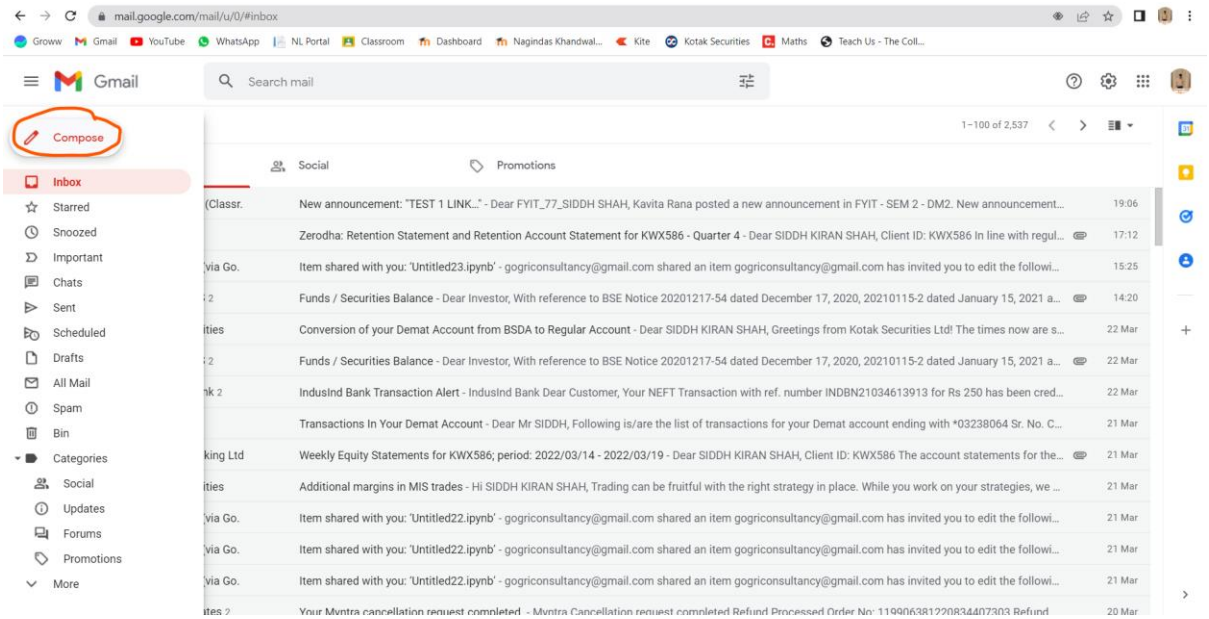
Aim: Writing Email

Solution:

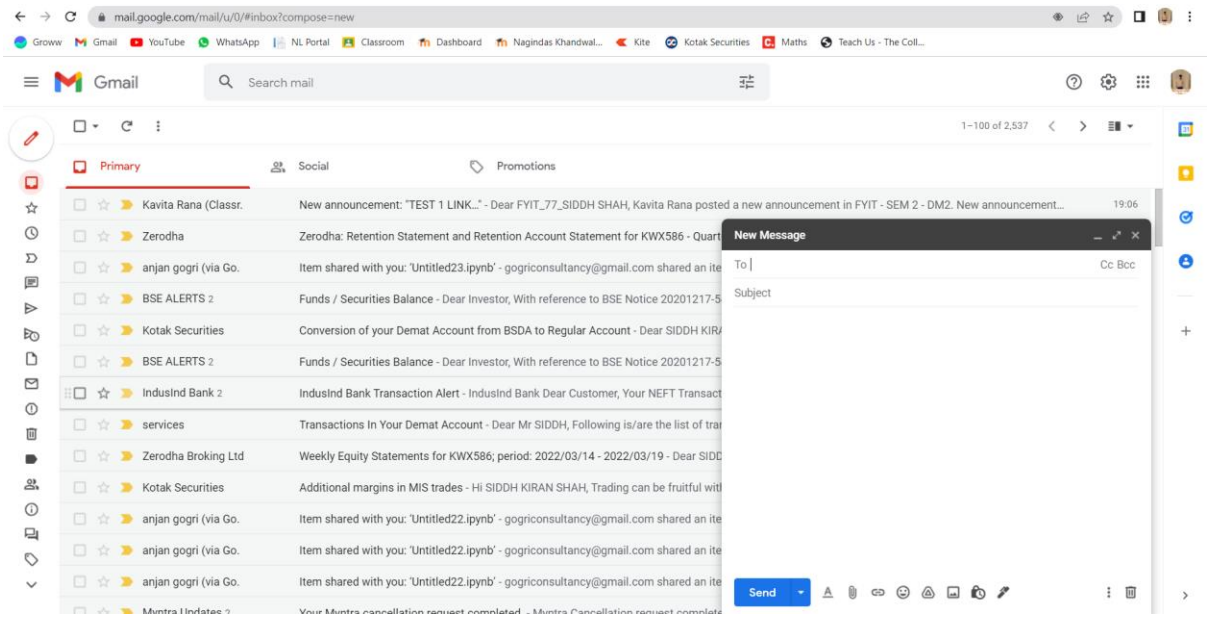
1. Open Chrome Browser, type www.gmail.com in search box.



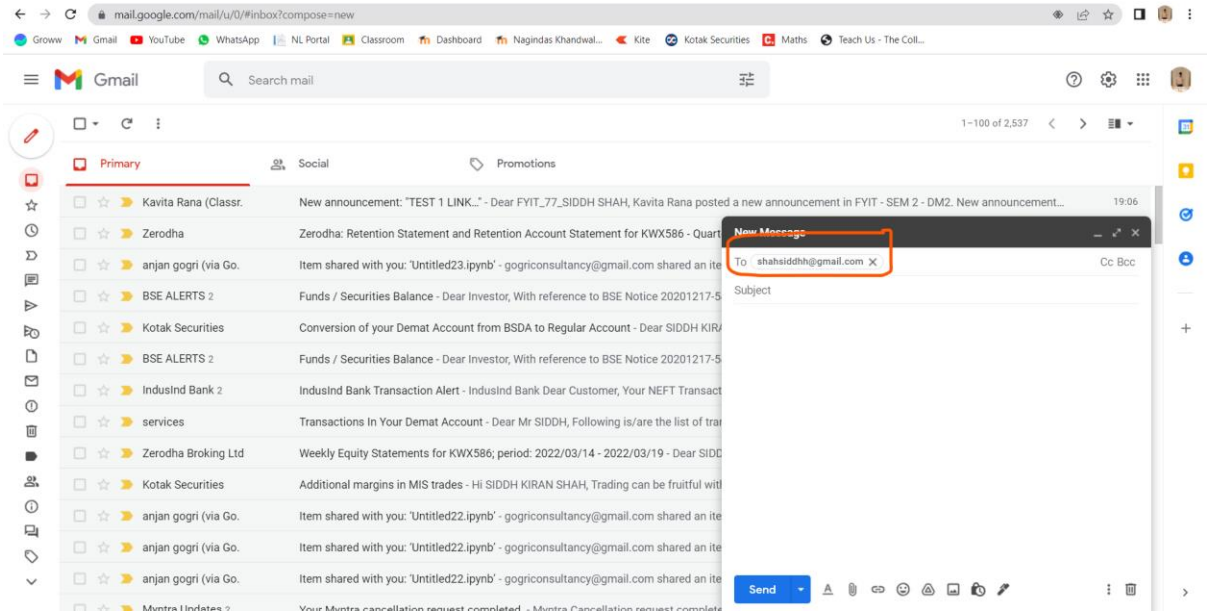
2. Login with your details, After Logging in click on COMPOSE on Left Side



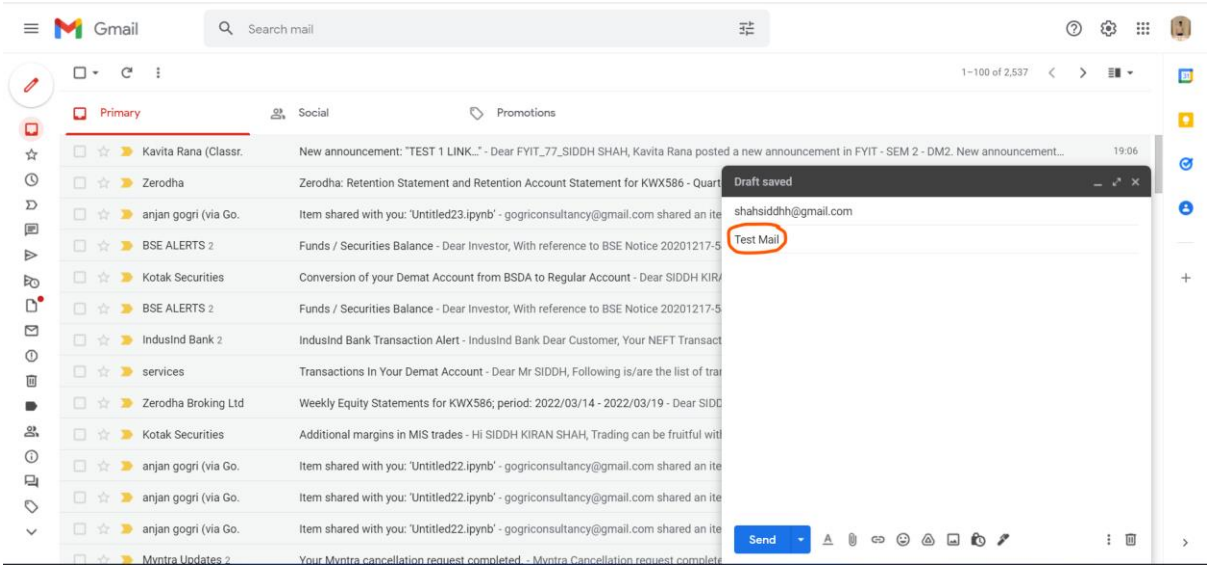
3. After Clicking on COMPOSE, Dialog Box will open



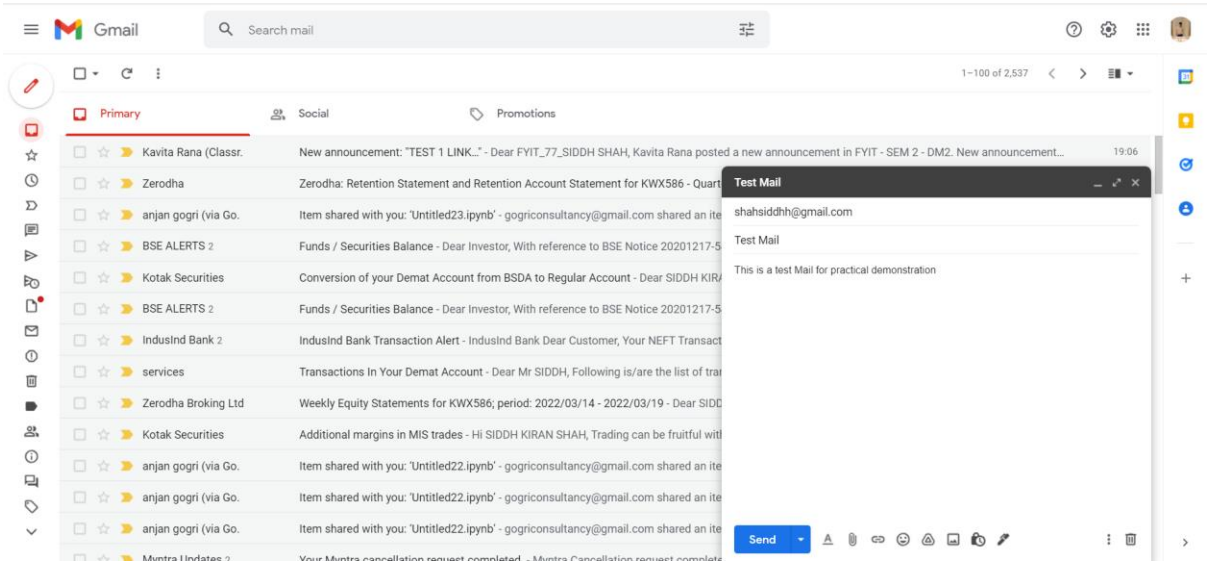
4. Enter the recipient email address, To whom you want to send mail



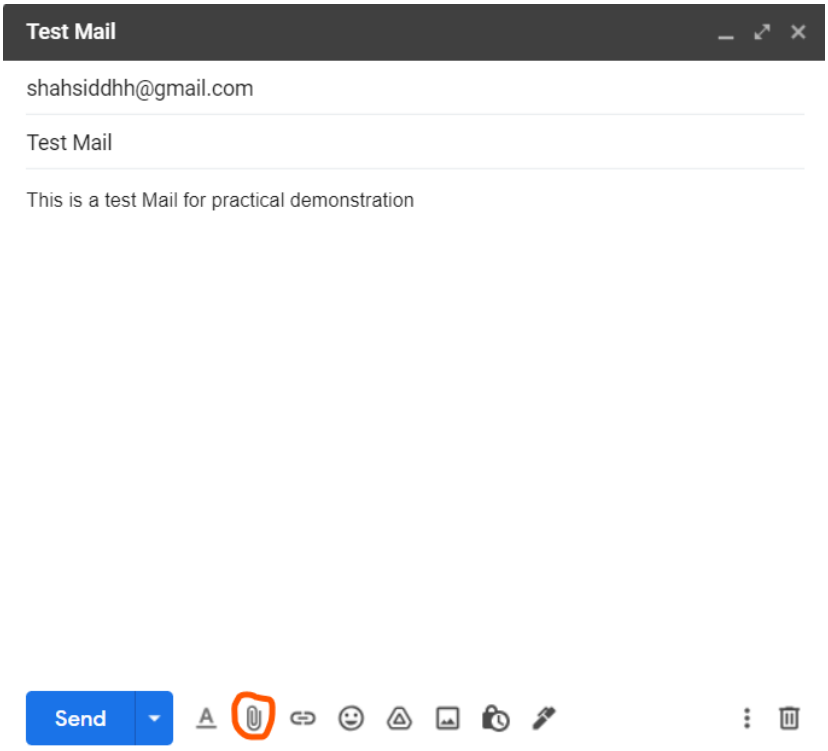
5. After entering the mail, Mention Subject of the mail. For ex. Test Mail



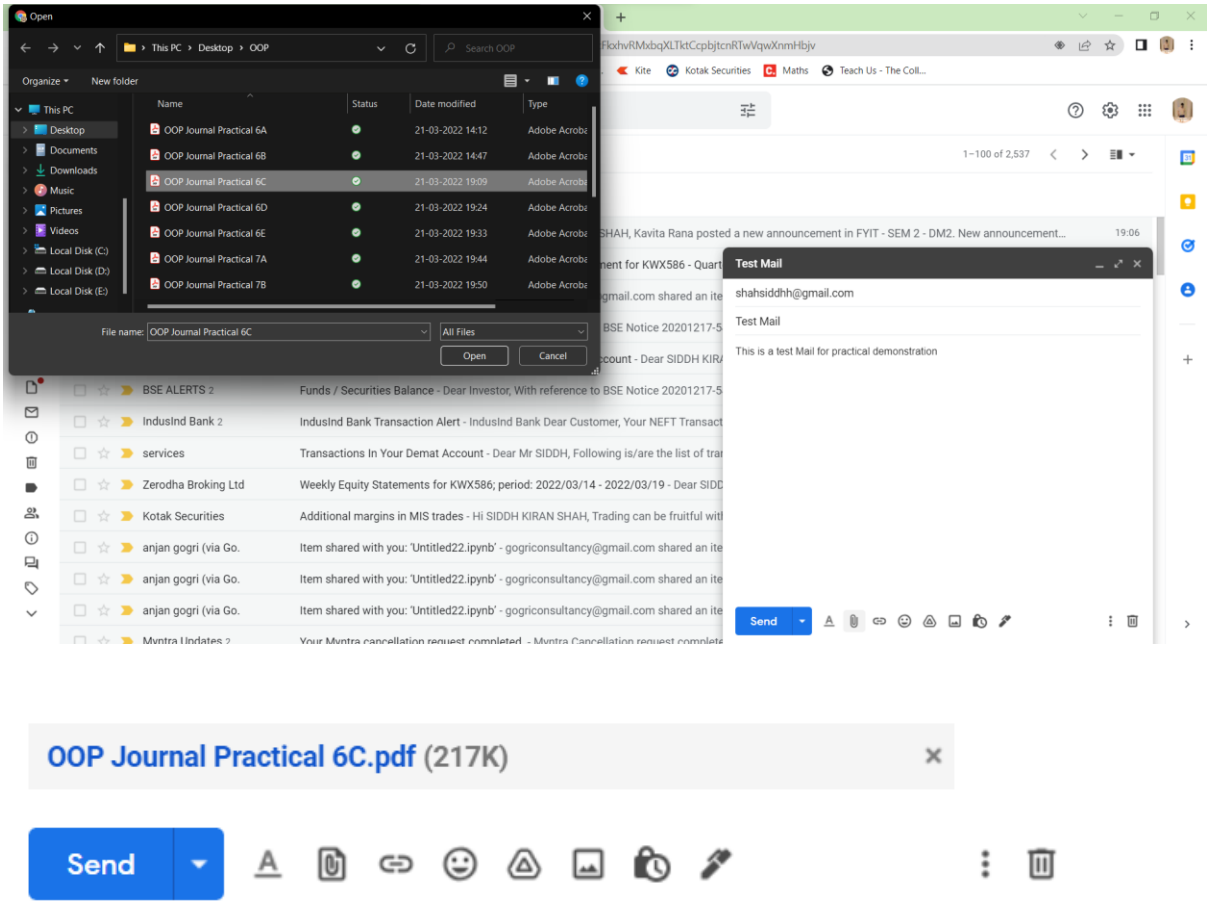
6. After entering Subject, write the body of mail



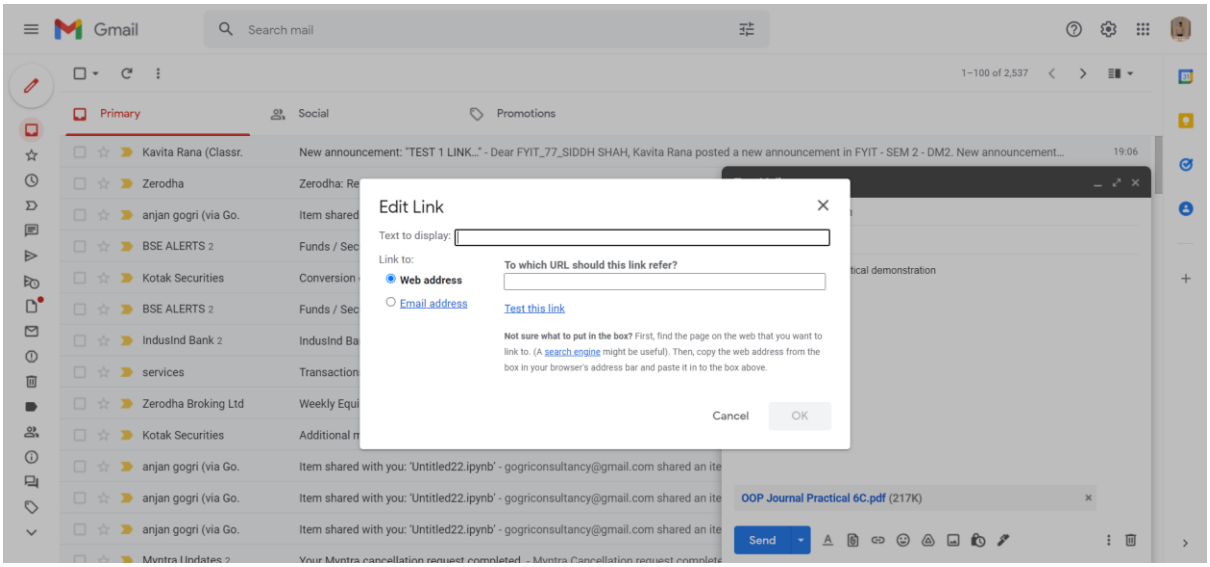
7. If you want to attach any file click on clip icon

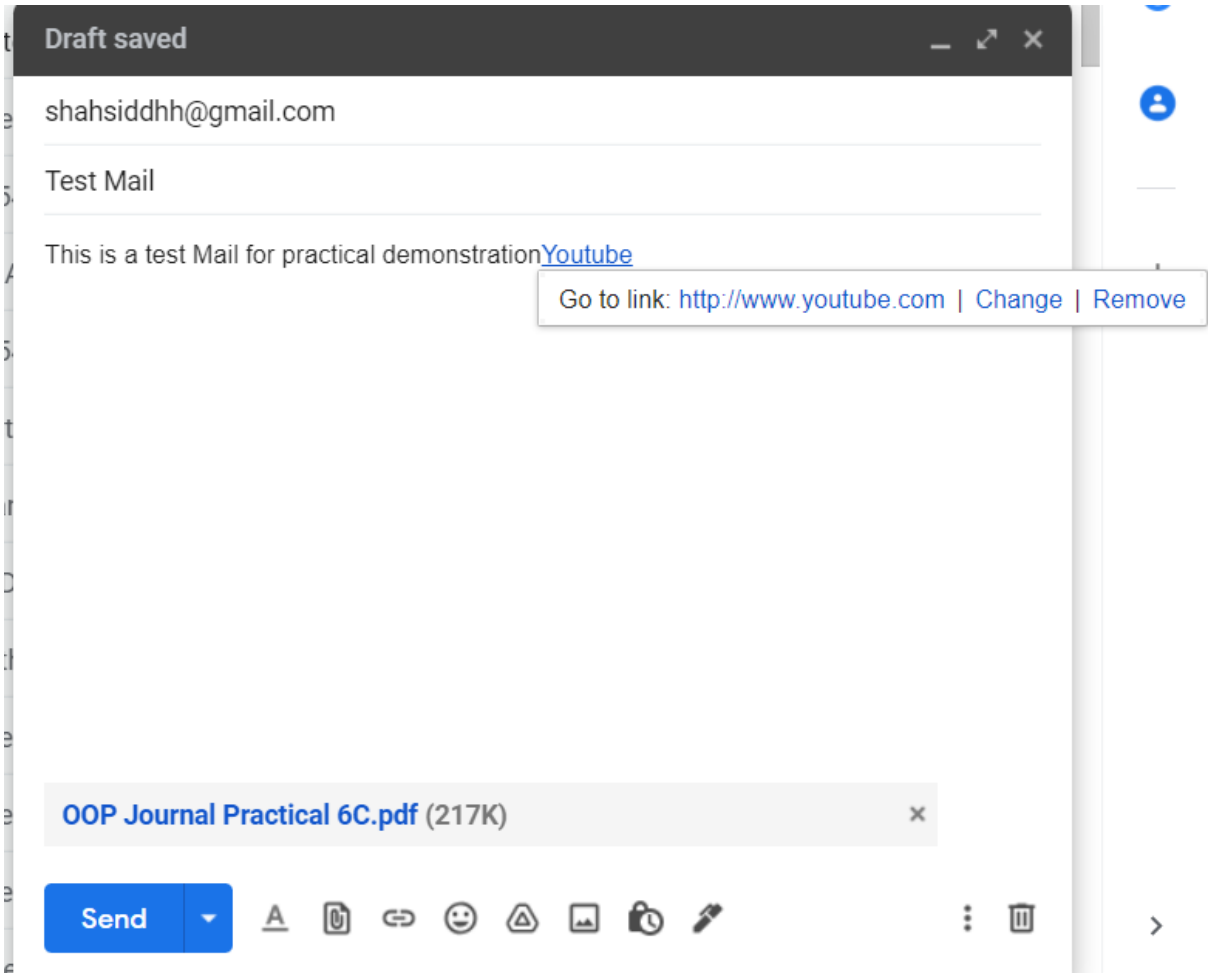


8. Select the file you want to send



9. (Optional) You can upload link if you want by clicking link icon.





10. To Send E-Mail, Click on SEND

PRACTICAL 03

Aim: Basic understanding on FREE & OPEN-SOURCE Software

A) Describe Open-Source Software with Example.

Ans:

The term Open-source is closely related to Open-source software (OSS). Open-source software is a type of computer software that is released under a license, but the source code is made available to all the users. The copyright holders of such software allow the users to use it and do some valuable modifications in its source code to add some new features, to improve the existing features, and to fix bugs if there are any. Because of this reason only Open-source software is mostly developed collaboratively.

Advantages:

- Open source software is free.
- Open source is flexible; developers can examine how the code works and freely make changes to dysfunctional or problematic aspects of the application to better fit their unique needs.
- Open source is stable; the source code is publicly distributed, so users can depend on it for their long-term projects since they know that the code's creators cannot simply discontinue the project or let it fall into disrepair.
- Open source fosters ingenuity; programmers can use pre-existing code to improve the software and even come up with their own innovations.
- Open source comes with a built-in community that continuously modifies and improves the source code.
- Open source provides great learning opportunities for new programmers.

Disadvantages:

- Open source can be harder to use and adopt due to difficulty setting it up and the lack of friendly user interfaces.
- Open source can pose compatibility issues. When attempting to program proprietary hardware with OSS, there is often a need for specialized drivers that are typically only available from the hardware manufacturer.
- Open source software can pose liability issues. Unlike commercial software, which is fully controlled by the vendor, open source rarely contains any warranty, liability, or infringement indemnity protection. This leaves the consumer of the OSS responsible for maintaining compliance with legal obligations.
- Open source can incur unexpected costs in training users, importing data, and setting up required hardware.

Examples of Open Source Software

- **Operating Systems-**
  Android, Ubuntu, Linux

- **Internet Browsers-**
  Mozilla Firefox, Chromium, Microsoft Edge

- **Integrated Development Environment (IDEs)-**
  VS Code (Virtual Studio), Android Studio, PyCharm, Xcode

B) Describe Free Software with Example.

Ans:

"Free software" means software that respects users' freedom and community. Roughly, it means that the users have the freedom to run, copy, distribute, study, change and improve the software.

The term "free software" is sometimes misunderstood—it has nothing to do with price. It is about freedom.

Advantages:

- Accessible: just by using a computer you can have full access to the software.
- Promotes technological growth: it adapts to any hardware, since the source code is independent. Likewise, it allows its development in groups that work together.
- Innovative: once you have greater access, there will also be an increase in collaborative technological innovation.
- Fewer errors: if you have the collaboration of other users and programmers, you will be able to correct errors at an essential speed.
- Independent: the user has the opportunity to adapt the software to his preference as well as to create his own functions.
- Low Cost: by having a community that supports the development, the software ends up being an economical option, ultimately impacting the user.
- Eliminate borders: Due to the great collaboration, this software encourages support with different private companies for the design of a better product.
- Security and privacy: with having the source code you can be sure that your information will be safe. In addition, it is much easier to obtain and adapts to any need.

Disadvantages:

- Variety of versions: being free, anyone can create the same version, which generates confusion for the user.
- There is no definition of guarantee: as the software is free, it practically belongs to the community. Therefore, there is no one responsible or a link with the company.
- It requires technical knowledge: although at present it is a bit simpler and more practical, previously, to use free software, users had to have advanced computer and programming knowledge.
- Quality control is provided by the community: this can be considered a double-edged sword, because if the community is not active and does not know programming, it will be difficult to solve the errors.
- Low advertising budget: being inexpensive: free software is characterized by having poor advertising, unlike private software that has a well-established budget.

Examples of Free Software

Adobe PDF, Yahoo Messenger, Google Talk, MSN Messenger

C) Difference between Free and Open-Source Software.

Ans:

S.No	Free Software	Open-Source Software
1.	**Software is an important part of people's lives.**	**Software is just software. There are no ethics associated directly to it.**
2.	**Software freedom translates to social freedom.**	**Ethics are to be associated to the people not to the software.**
3.	**Freedom is a value that is more important than any economic advantage.**	**Freedom is not an absolute concept. Freedom should be allowed, not imposed.**
4.	**Examples: The Free Software Directory maintains a large database of free-software packages. Some of the best-known examples include the Linux kernel, the BSD and Linux operating systems, the GNU Compiler Collection and C library; the MySQL relational database; the Apache web server; and the Sendmail mail transport agent.**	**Examples: Prime examples of open-source products are the Apache HTTP Server, the e-commerce platform osCommerce, internet browsers Mozilla Firefox and Chromium (the project where the vast majority of development of the freeware Google Chrome is done) and the full office suite LibreOffice.**

PRACTICAL 04

Aim: INTRODUCTION & CONTRIBUTING TO WIKIPEDIA

A) What is Wikipedia?

Ans:

Wikipedia is a free content, multilingual online encyclopaedia produced and maintained by a community of volunteers using a wiki-based editing system and an open collaboration approach. Wikipedians are individual contributors, often known as editors. Wikipedia is the world's most popular and widely read reference work. Wikipedia is consistently one of Alexa's top 15 most popular websites; as of 2021, it was the 13th most popular site. It is hosted by the Wikimedia Foundation, a non-profit organisation based in the United States that is mostly funded through donations.

History of Wikipedia:

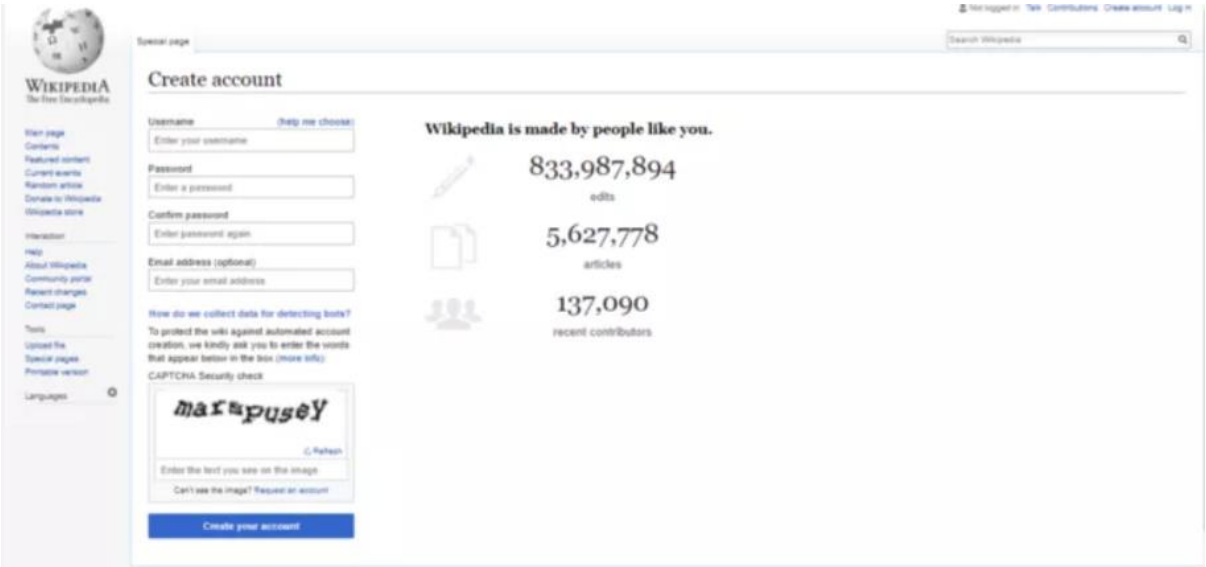
Jimmy Wales and Larry Sanger founded Wikipedia on January 15, 2001; Sanger proposed the name as a combination of "wiki" and "encyclopaedia." After being exposed to these concepts by Austrian economist and Mises Institute Senior Fellow Mark Thornton, Wales was affected by the "spontaneous order" theories connected with Friedrich Hayek and the Austrian School of economics. Versions in other languages were immediately developed after the English version was released. As of November 2020, it had more than 58 million articles in its combined editions, drawing about 2 billion unique device visits each month and more than 17 million revisions per month (1.9 edits per second). According to Time magazine in 2006, the philosophy of allowing anybody to edit Wikipedia had made it the "largest (and maybe finest) encyclopaedia in the world."

B) Steps to Create account on Wikipedia

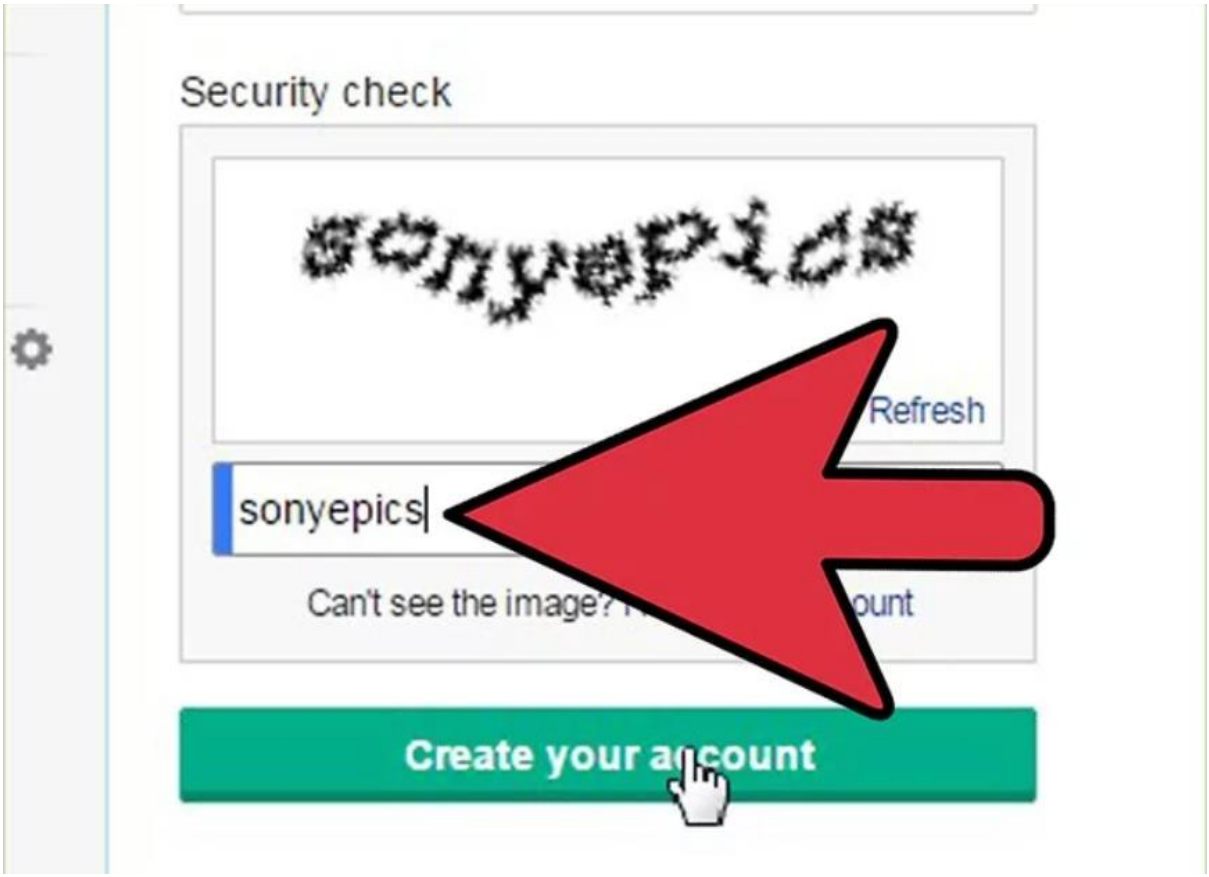
Ans:

1. Click the "Sign in/create account" link in the upper right corner on the Wikipedia website.

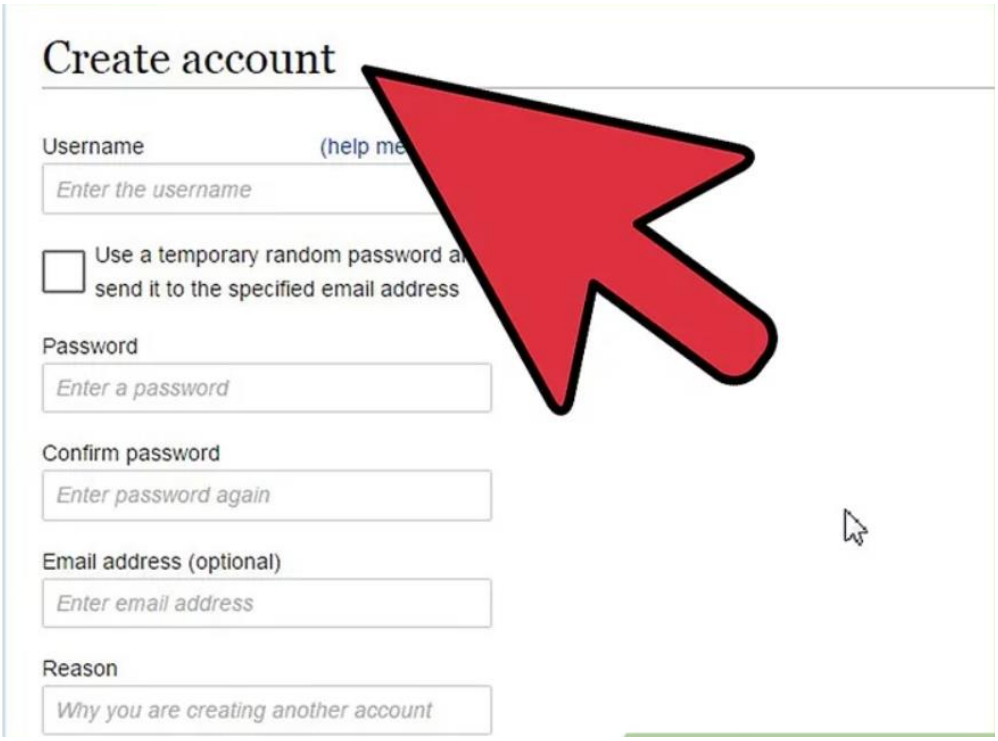
2. Click the link "Create One" above the boxes. This will take you to the account creation page (of course, if you are reading this on line, you could use this link directly instead of following step one and two).



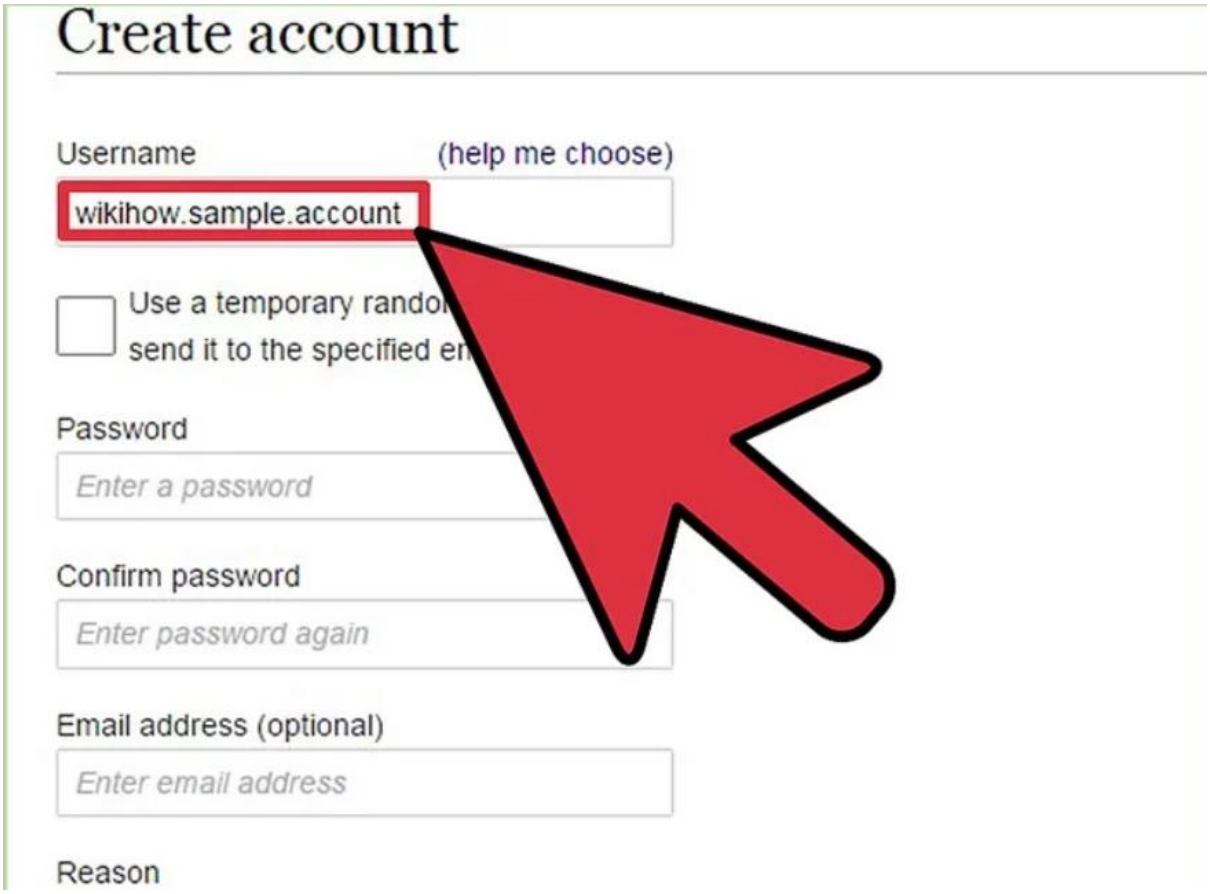
3. Type the captcha. Wikipedia now presents people with a simple captcha to solve to prevent against computer activated programs signing up. Type it in the box below (refresh the image if you must) and move on to the next step.



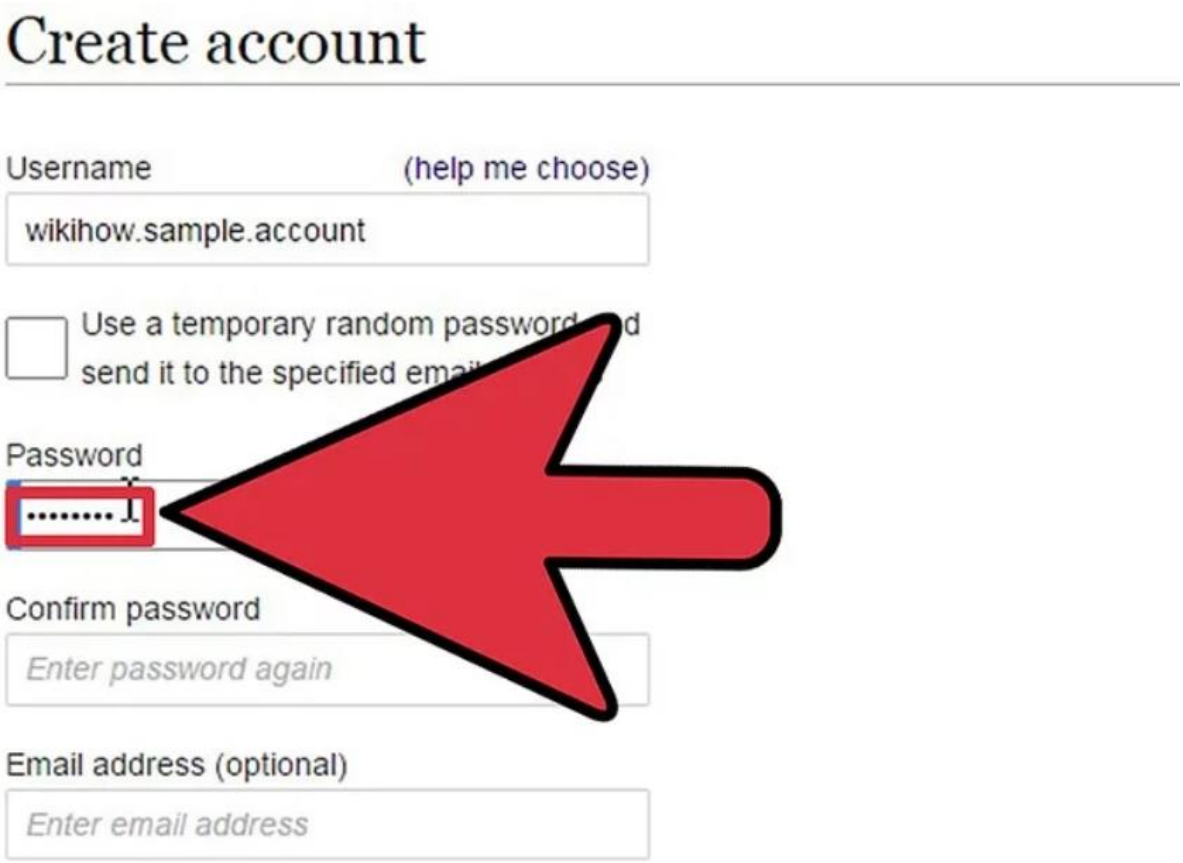
4. Read the text below all boxes.



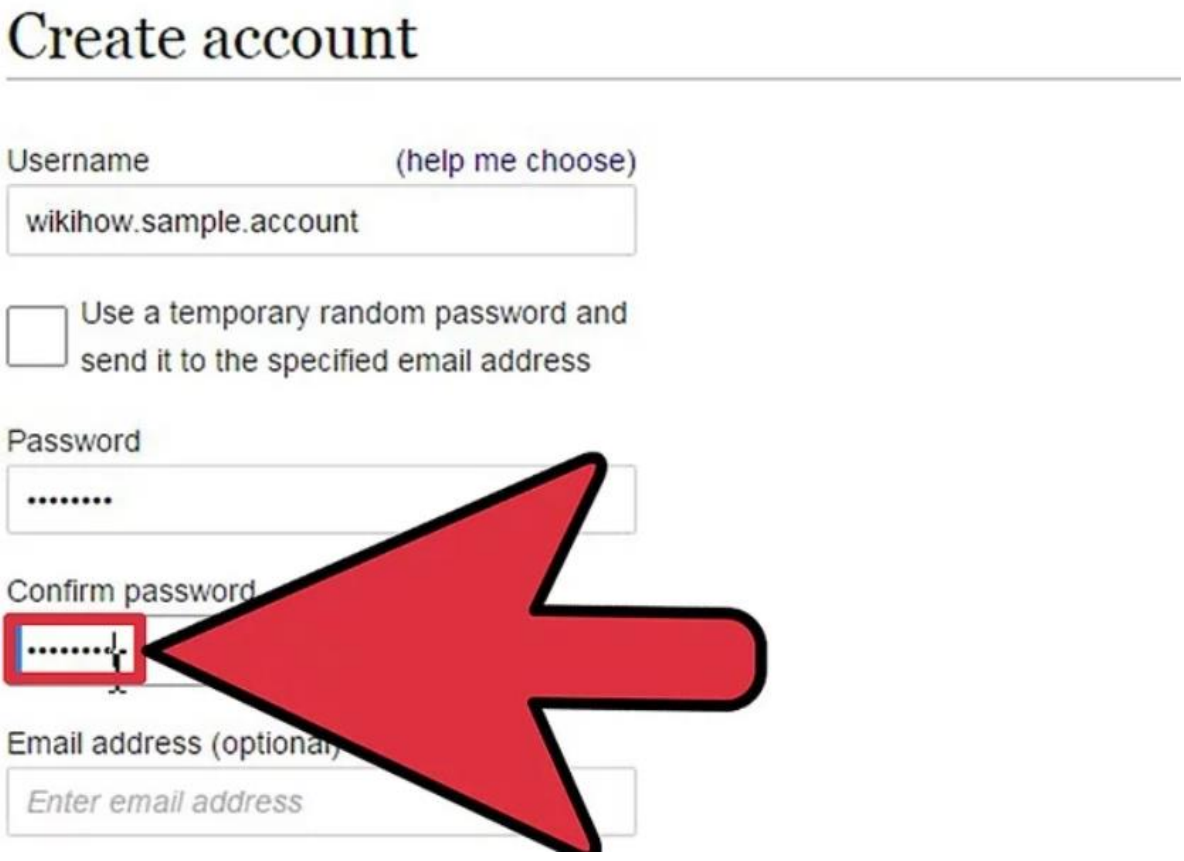
5. Enter your desired user name in the "Username:" box. This will be the name of your account. For suggestions for usernames, see below.
    - Scramble your real name. No one will know. Make it an anagram, meaning that they are words that can be rearranged to form, in this case, your real name.
    - Look to social media. If you have a social media account, you can use the same username as your social media username (if it is not taken), but you may not want to do so if you are a famous user.
    - Think creatively. Have any passions, including computers, languages, companies, etc.? Choose a username suitable for your interests.
    - Don't choose a username that promotes another business, flags you as a vandal, impersonates an admin, or is just plain annoying. Those get blocked quickly.



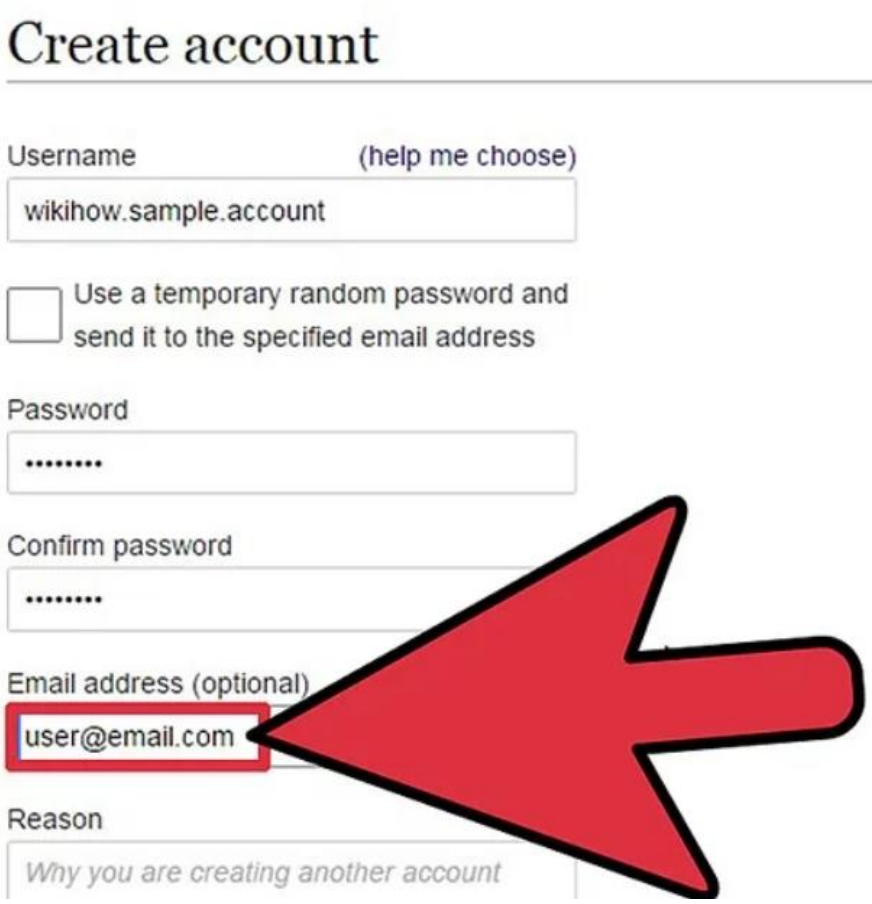
6. Enter a password in the "Password:" box. Make sure that you can remember your password, but for it to be hard for anyone else to guess.



7. Re-enter the same password as above in the "Confirm Password:" box.

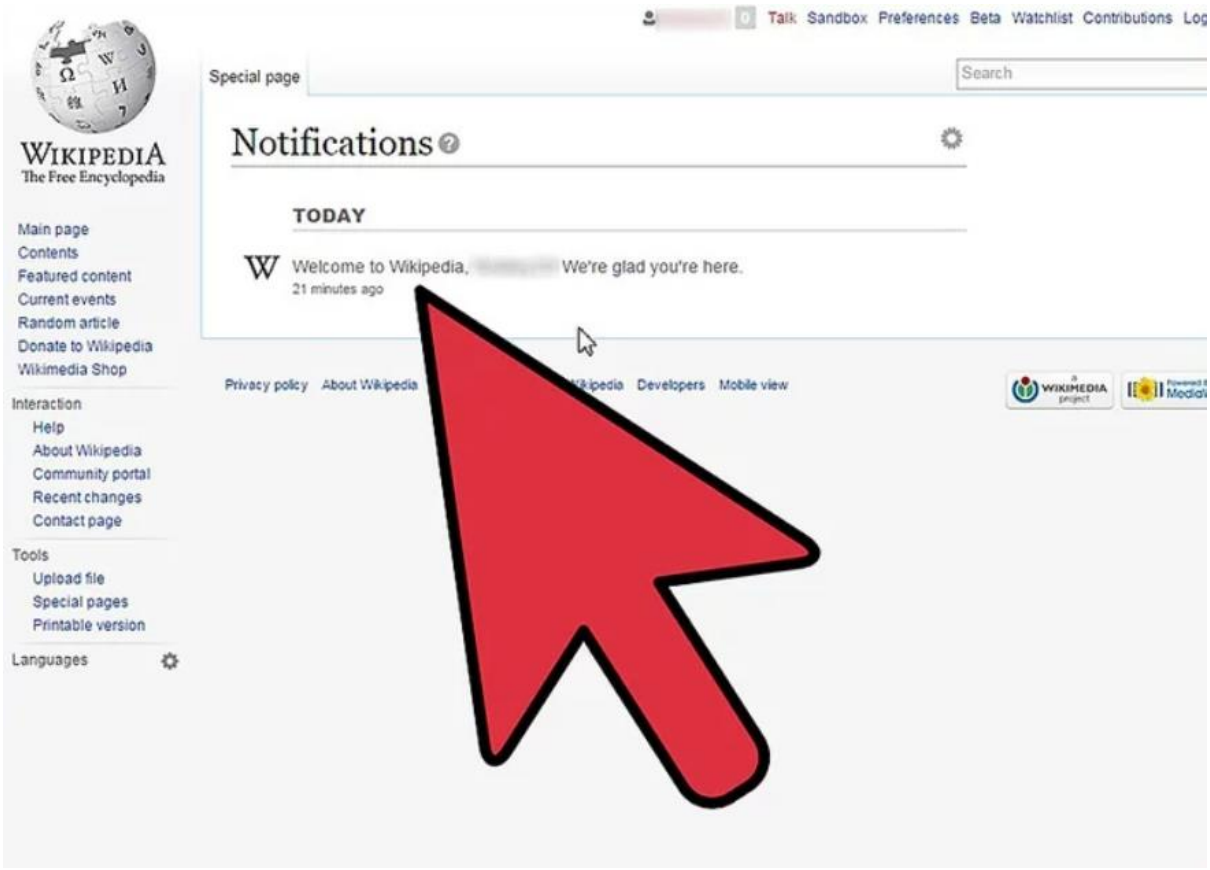


8. Enter your e-mail address in the "E-mail" box if you want to. For more information about this, see below in the "Tips" section.



9. Click the big "Create account" button.

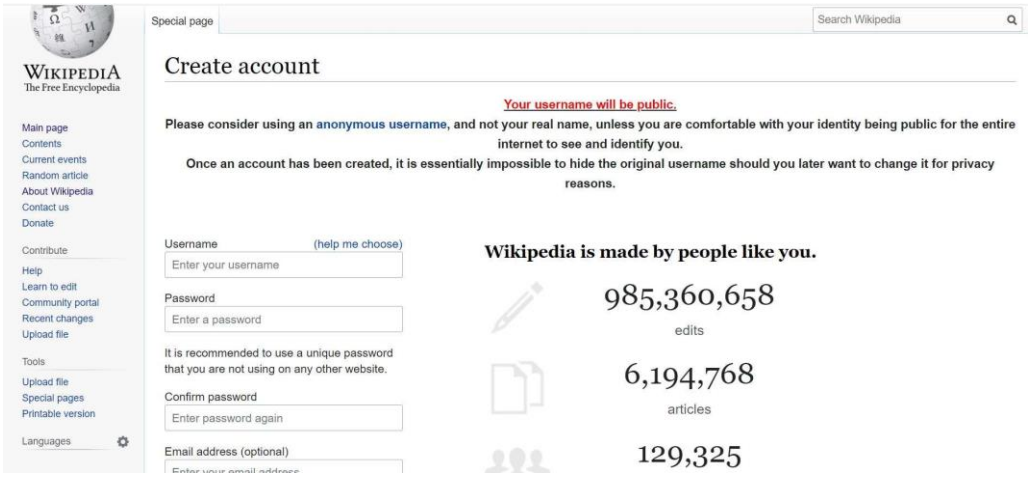
10. Congratulations! You are now a registered user in Wikipedia!



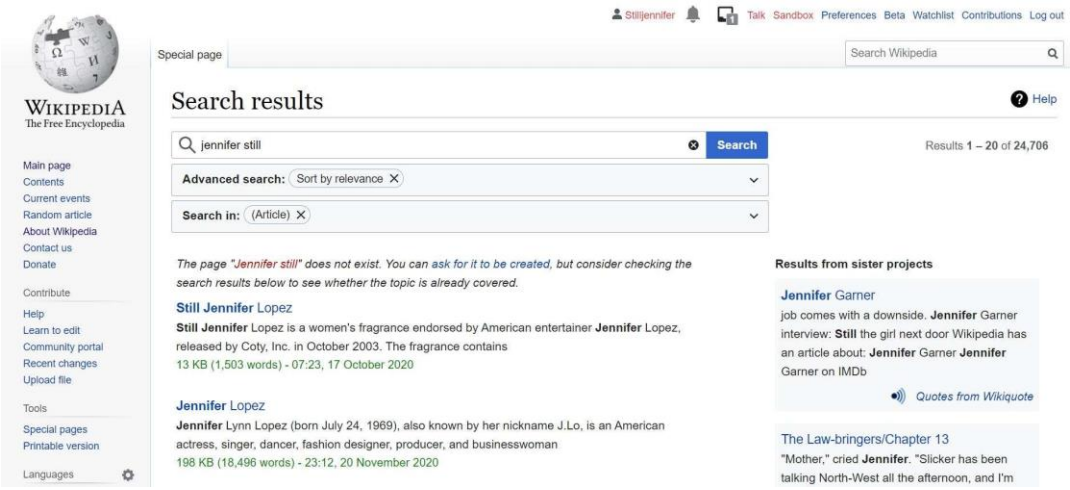
C) Creating Page on Wikipedia

<u>Steps:</u>

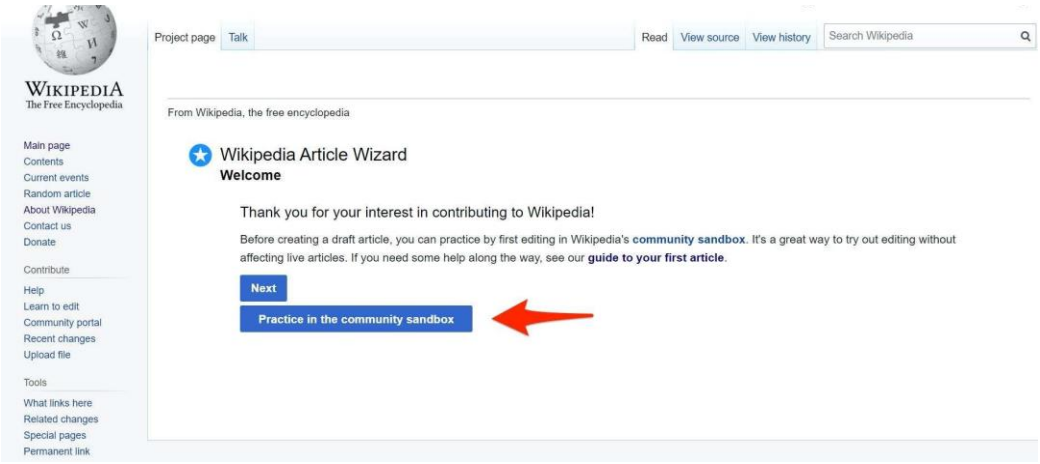
1. To create a Wikipedia.org page, you must have a registered account. Log in or create one.



2. Check to verify that the Wikipedia page you want to create doesn't already exist using the search bar.
3. On the search results page for the term you enter, the option to "ask for it to be created" will appear. Click on it to be taken to the Wikipedia article wizard.

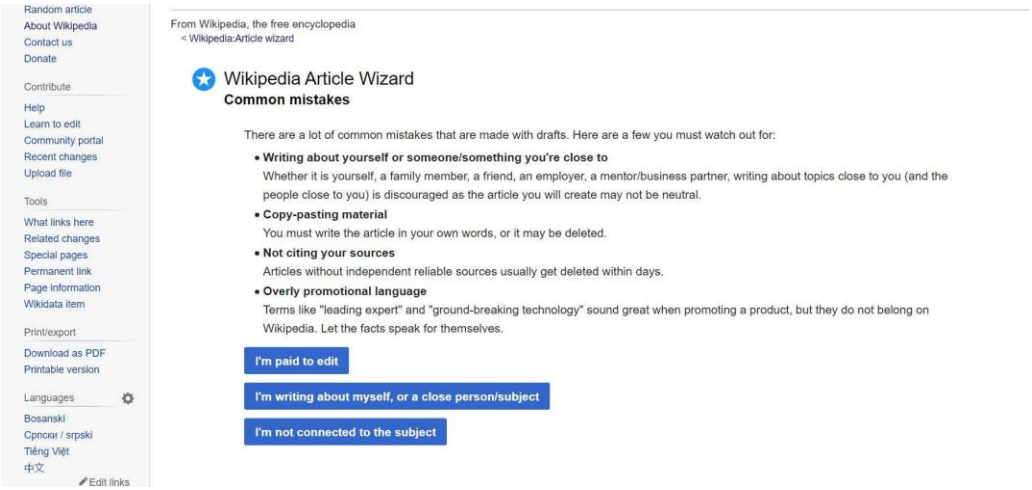


4. On the wizard, click "Next" to begin creating your page.



5. After reviewing and agreeing to notability and other publication requirements, click "Next."

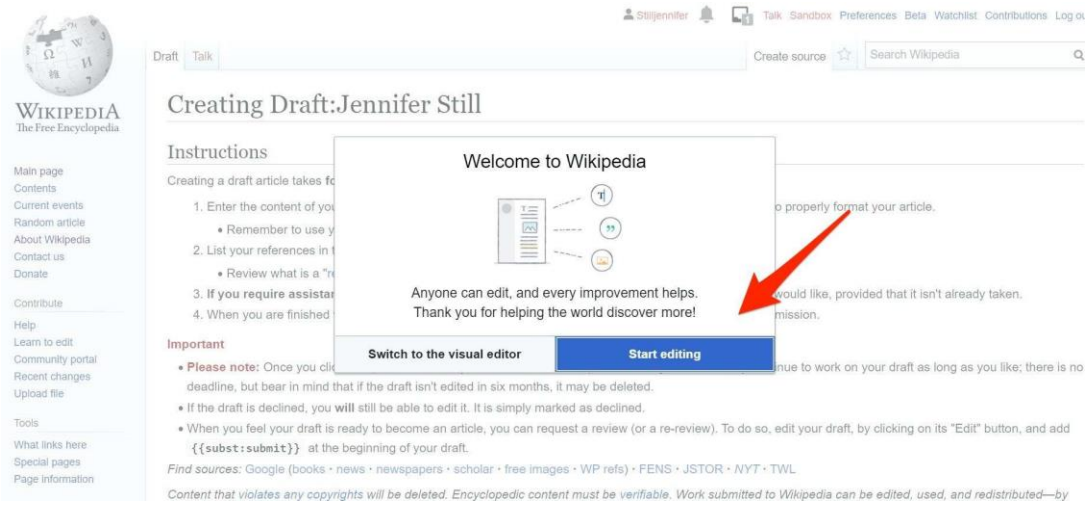
6. Select the appropriate option to let Wikipedia know if you're a paid editor, you're writing about yourself, or someone you know/are close to, or if you're writing about a subject to which you have no connection.



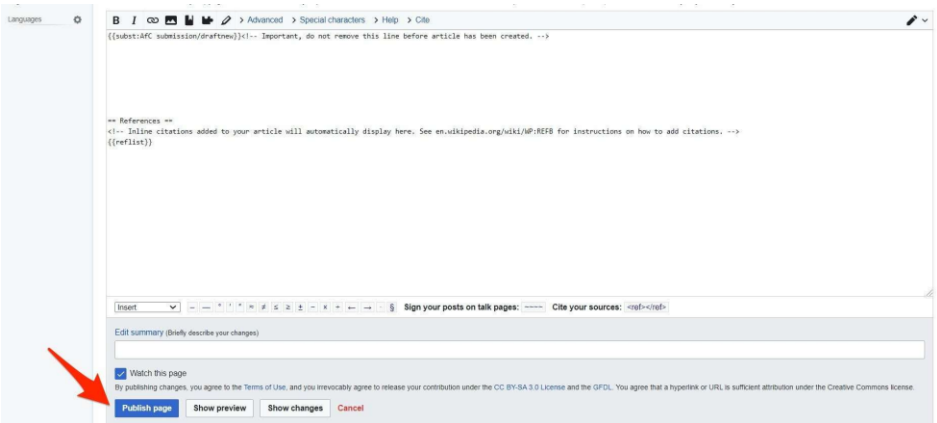
7. Enter a name for your draft, then click "Create new article draft."

D) Edit your Page

8. In the pop-up box that appears, select "Start editing" to begin writing your article in the appropriate field.



9. When finished with your edits, click "Publish" to save your article to draft.



PRACTICAL 05

Aim: Using practical examples, describe green computing. List and explain the steps that you take to contribute to green computing

Solution:

What is Green Computing?

- Green computing, also called green technology, is the environmentally responsible use of computers and related resources. Such practices include the implementation of energy-efficient central processing units (CPUs), servers and peripherals as well as reduced resource consumption and proper disposal of electronic waste (e-waste).
- Green computing" is the name attached to this movement, which represents an environmentally responsible way to reduce power and environmental waste.
- The goals of green computing are similar to green chemistry; reduce the use of hazardous materials, maximize energy efficiency during the product's lifetime, and promote the recyclability or biodegradability of defunct products and factory waste research continues into key areas such as making the use of computers as energy-efficient as possible, and designing algorithms and systems for efficiency-related computer technologies.

The following four complementary approaches are employed:

- **Green use**: Minimizing the electricity consumption of computers and their peripheral devices and using them in an eco-friendly manner
- **Green disposal**: Re-purposing an existing computer or appropriately disposing of, or recycling, unwanted electronic equipment
- **Green design**: Designing energy-efficient computers, servers, printers, projectors and other digital devices
- **Green manufacturing**: Minimizing waste during the manufacturing of computers and other subsystems to reduce the environmental impact of these activities

Why Go Green?

1. **Climate Change**

   First and foremost, conclusive research shows that CO2 and other emissions are causing global climate and environmental damage. preserving the planet is a valid goal because it aims to preserve life.

2. **Saving**

   Green computing can lead to serious cost saving overtime. Reduction in energy cost from server, cooling, and lighting are generating serious savings for many corporation.

3. **Reliability of power**

   As energy demands in the world go up, energy supply is declining or flat. Energy efficient systems help to ensure healthy power systems. Also, more companies are generating more go their own electricity, which further motivates them to keep power consumption low.

Five Simple Steps to Green Computing

1. Develop a sustainable green computing plan
2. Recycle
3. Make environmentally sound purchase decisions
4. Reduce Paper Consumption
5. Conserve energy

1. Develop a sustainable green computing plan

Discuss with your business leaders the elements that should be factored into such a plan, including organizational policies and checklists. Such a plan should include recycling policies, recommendations for disposal of used equipment, government guidelines and recommendations for purchasing green computer equipment. Green computing best practices and policies should cover power usage, reduction of paper consumption, as well as recommendations for new equipment and recycling old machines. Organizational policies should include communication and implementation

2. Recycle. Discard used or unwanted electronic equipment in a convenient and environmentally responsible manner. Computers have toxin metals and pollutants that can emit harmful emissions into the environment. Never discard computers in a landfill. Recycle them instead through manufacturer programs such as HP's Planet Partners recycling service or recycling facilities in your community. Or donate still-working computers to a non-profit agency.

3. Make environmentally sound purchase decisions. Purchase Electronic Product Environmental Assessment Tool registered products. EPEAT is a procurement tool promoted by the nonprofit Green Electronics Council to:

•Help institutional purchasers evaluate, compare and select desktop computers, notebooks and monitors based on environmental attributes

•Provide a clear, consistent set of performance criteria for the design of products

•Recognize manufacturer efforts to reduce the environmental impact of products by reducing or eliminating environmentally sensitive materials, designing for longevity and reducing packaging materials

4. Reduce Paper Consumption. There are many easy, obvious ways to reduce paper consumption: e-mail, electronic archiving, use the “track changes” feature in electronic documents, rather than redline corrections on paper. When you do print out documents, make sure to use both sides of the paper, recycle regularly, use smaller fonts and margins, and selectively print required pages.

5. Conserve energy. Turn off your computer when you know you won’t use it for an extended period of time. Turn on power management features during shorter periods of inactivity.

Power management allows monitors and computers to enter low-power states when sitting idle. By simply hitting the keyboard or moving the mouse, the computer or monitors awakens from its low power sleep mode in seconds. Power management tactics can save energy and help protect the environment.

PROBLEMS

- TOXINS
- POWER CONSUMPTION
- HEAT
- EQIUPMENT DISPOSAL

TOXINS

- According to the U.S. Environmental Protection Agency (EPA), Americans throw out more than 2 million tons of consumer electronics annually, making electronic waste (also known as *e-waste) one of the fastest growing components of the municipal waste stream. When* these electronics break down, they release mercury and other toxins.
- "E-Waste is a term used to cover items of all types of electrical and electronic equipment (EEE) and its parts that have been discarded by the owner as waste without the intention of re-use."

Toxic substances can include:

- Lead
- Mercury
- Cadmium
- Polychlorinated biphenyls (PCBs)

RECYCLING

Computer recycling, **electronic recycling** or **e-waste recycling** is the disassembly and separation of components and raw materials of waste electronics. Although the procedures of re-use, donation and repair are not strictly recycling, they are other common sustainable ways to dispose of IT waste.

RECYCLING STEPS

Structure and main steps in the recycling chain

The recycling chain (process) for e-waste consists of three main subsequent steps:

1. collection
2. sorting/dismantling and pre-processing
3. end-processing (incl. refining and disposal).

1. Collection: collection of e-waste is crusial important part of recycling chain. This is major responsibility of us to collect the e-waste and scrap material for every source such as individual, corporate, institution, government bodies, formal and informal sector to avoide landfill and to keep our environment clean and green. When no devices are collected, the feed material to dismantling, preprocessing and end-processing facilities is lacking and a recycling chain cannot be established. The collected equipment is sorted and then enters a pre-treatment step.

2. Dismantling and pre-processing: The aim of dismantling and pre-processing is to liberate the materials and direct them to adequate subsequent final treatment processes. To separate furious , non furious, hazardous and non hazardous. Hazardous substances have to be removed and stored or treated safely while valuable components/materials need to be taken out for reuse or to be directed to efficient recovery processes. This includes removal of batteries, capacitors etc. prior to further (mechanical) pre-treatment. For devices containing ODS such as refrigerators and air-conditioners, the de-gassing step is crucial in the pre-processing stage as the refrigerants used (CFC or HCFC in older models) need to be removed carefully to avoid air-emissions. For CRT containing appliances (e.g. monitors and TVs) coatings in the panel glass are usually removed as well before end-processing . LCD monitors with mercury-containing backlights need special care too, as the backlights need to be carefully removed before further treatment.

E-waste processing generally involves first dismantling the equipment into these different components:

• Metal frames

• Power supplies

• Circuit boards

• Plastics

3. Final metal recovery: from output fractions after pre-treatment takes place at three main destinations. Ferrous fractions are directed to steel plants for recovery of iron, aluminium fractions are going to aluminium smelters, while copper/lead fractions, circuit boards and other precious metals containing fractions are going to e.g. integrated metal smelters, which recover precious metals, copper and other non-ferrous metals, while isolating the hazardous substances.

- **Raw material / Capability**

  Our recycling plant is quite enough to handle and recycle 2000 metric tons of e-waste and scrap material per annual. Our basic raw material or e-waste (scrap) is as follows.

- **1. IT material:-** Computer, laptops, main frames, printer, monitor, server, LCD, mother board, PCB Boards,HDD, Ram, cd rom, cables, network product, switches, router ETC
- **2. UPS / Batteries: -** UPS, stabilizer, batteries (lead and acid), mobile and phone batteries ETC

3. Electronics equipment:- Electronics appliances, TV, washing machine, cooler, heater, video, air condition (A/C), refrigerator, Telephones, EPBX system, all other electronics and mechanical equipments ETC.

4. Metal scrap: - Wire, cables, Iron scrap, copper material, aluminium scrap, steel, stainless steel (SS), lamination ETC.

Recycling methods

1. Consumer recycling
2. Scrapping/recycling
3. Corporate recycling
4. Sale
5. Take back
6. Exchange
7. Donations/nonprofits
8. Junkyard Computing

CARBON FOOTPRINT

- A carbon footprint is the measure of the environmental impact of a particular individual or organization's lifestyle or operation, measured in units of carbon dioxide.
- A carbon footprint is composed of two parts, a primary and secondary footprint. The primary footprint is the sum of the direct carbon dioxide emissions of burning of fossil fuels, like domestic energy consumption by furnaces and waters heaters, and transportation, like automobiles and airplane travel. The secondary footprint is the sum of indirect emissions associated with the manufacture and breakdown of all products, services and food an individual or business consumes.

Four major steps are used to measure your carbon footprint:

•Define what is included in your carbon footprint.

• Set your baseline.

• Track, calculate, and analyze your footprint.

• Report your results to stakeholders.

STORAGE

- Tape is a popular method of green storage that is widely used. Tape has no moving parts that use up energy, is portable and has a longer shelf-life than other storage technology.
- Virtualized servers can host up to 20 virtualized servers on one physical server. This improves efficiency and cuts down on the need for expensive hardware.
- Not as widely used, but growing in popularity, are solid-state drives (SSDs), which are energy efficient and faster than mechanical hard disk drives. However, SSDs come at a higher cost than other methods.
- A massive array of idle disks (MAID) system only spins active drives, cutting down on energy use and prolonging shelf-life. This architecture has been around for a while but hasn't widely caught on largely because of performance limitations caused by making disks inactive.
- Green Drives: Green hard drives are drives that reduce the amount of power they use through a variety of mechanisms, including unloading the heads during idle time to reduce aerodynamic drag. The drives calculate the optimum seek speed to use just the amount of power necessary.
- Western Digital is a major producer of green hard drives and estimates that its green drives can shave off US$10 per drive, per year in electricity costs. For example, its 1TB WD Caviar GreenPower hard drive uses about 5 watts less power than drives of the same size, which typically consume 13.5 watts.

MAID

- MAID (massive array of idle disks) is a storage technology in which only those disk drives in active use are spinning at any given time. MAID reduces power consumption and prolongs the lives of the drives.
- A MAID, which can have hundreds, or even thousands of individual drives, offers mass storage at a cost per terabyte roughly equivalent to that of tape. MAID technology is offered as an option to high-volume tape libraries.

- A MAID is usually constructed with low-cost Serial Advanced Technology Attachment (SATA) drives, which have shorter mean time between failure (MTBF) ratings than more expensive drives.
- The advantages of MAID over tape are clear: Power consumption when the drives are spun down can be zero or close to it, depending on the type of spin down deployed, while access time remains relatively low, measured in seconds rather than the minutes, hours or days that tape typically provides. The savings can be large; for example, Copan claimed its MAID systems consumed 11 watts per terabyte compared with a standard array that uses 51 watts

RAID

- RAID is an acronym for Redundant Array of Independent (or Inexpensive) Disks. RAID is the way of combining several independent and relatively small disks into a single storage of a large size. The disks included into the array are called array members. The disks can be combined into the array in different ways which are known as RAID levels.
- Each of RAID levels has its own characteristics of:

  •Fault-tolerance which is the ability to survive of one or several disk failures.

  •Performance which shows the change in the read and write speed of the entire array as compared to a single disk.

  •The capacity of the array which is determined by the amount of user data that can be written to the array.

How Raid is Organized?

Two independent aspects are clearly distinguished in the RAID organization.

1. The organization of data in the array (RAID storage techniques: striping, mirroring, parity, combination of them).

2. Implementation of each particular RAID installation - hardware or software.

WIRELESS DEVICES

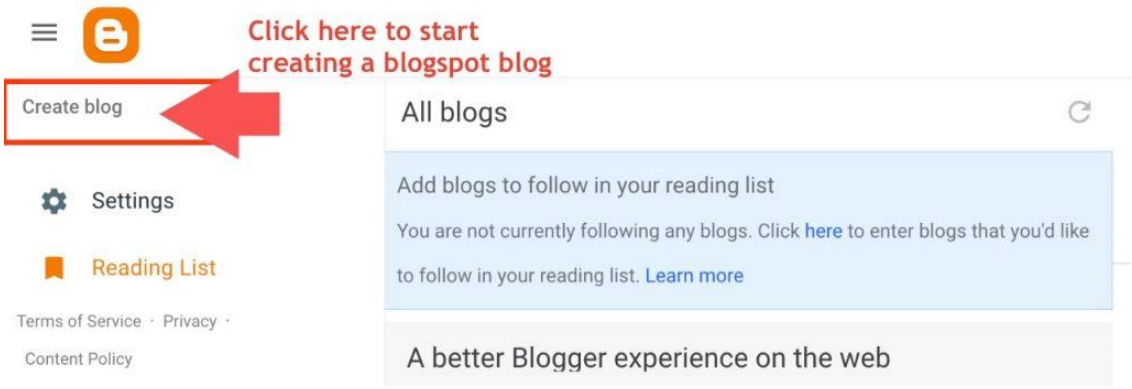
- WIFI
- BLUETOOTH

PRACTICAL 06

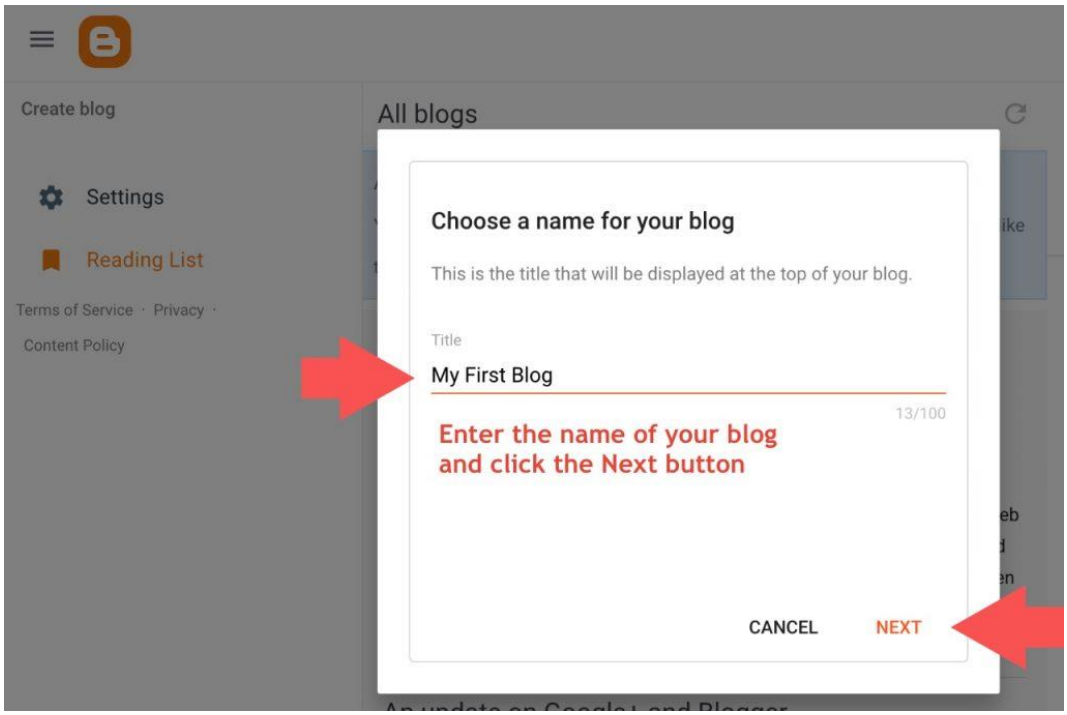
Aim: WRITING BLOGS

Solution:

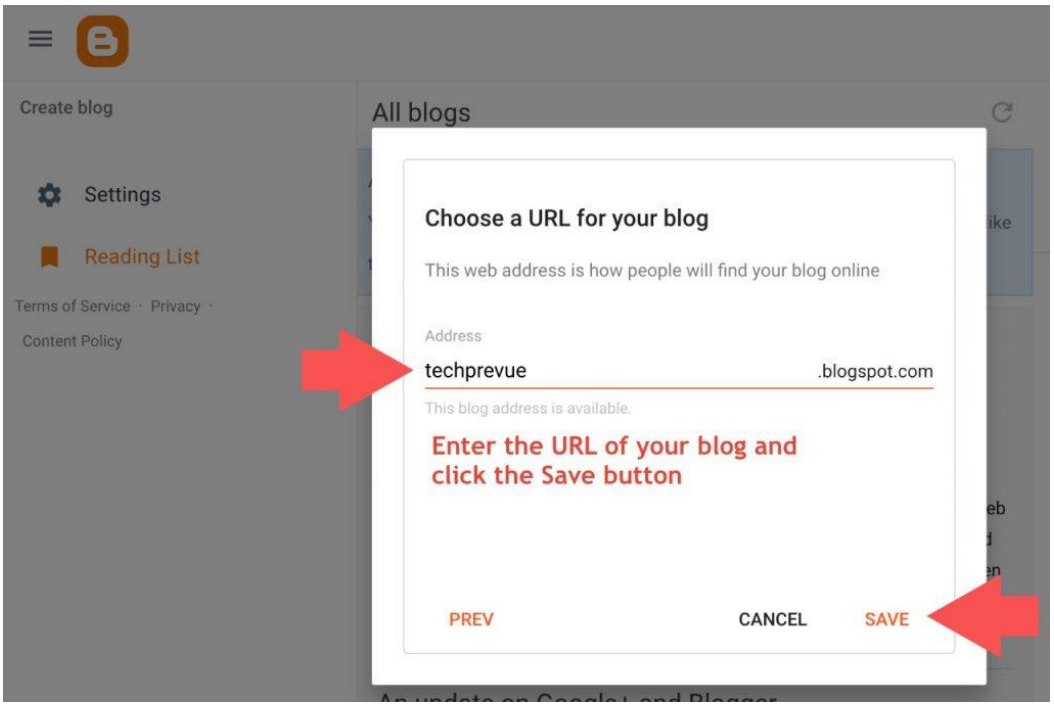
1. To create a blogspot blog, a Blogspot login is required. Visit blogger.com for this.
2. Click on the CREATE YOUR BLOG button and login with your Google account credentials.
3. After Blogspot sign in. You are now on the Blogger dashboard. On the top lift side, the Create blog option is given to you.



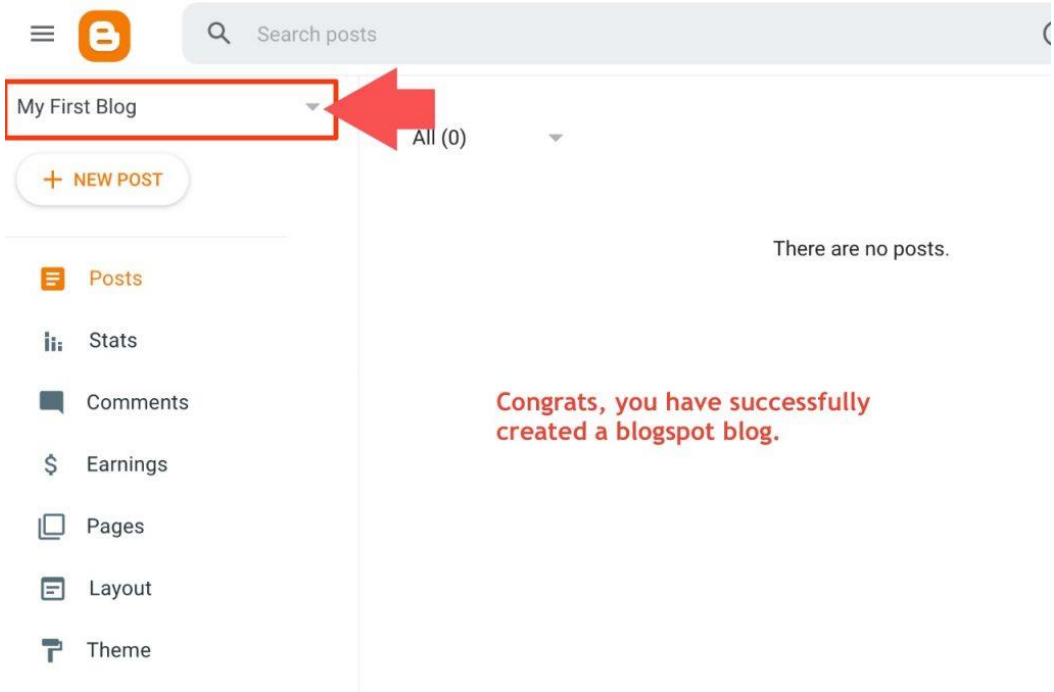
4. As you click on the Create blog option, you get a title box to choose a name for your blog. Enter the name of your new blog and click on the Next button. If you need help choosing a name for your blog, you can check out Satori Webmaster Academy's blog name generator.



5. The next option is given to choose a URL for your blog. Enter the blog URL in the address box. It will be checked for availability, and if it is available, then the SAVE button will be highlighted. You can also set up a Blogger custom domain on a blogspot blog.

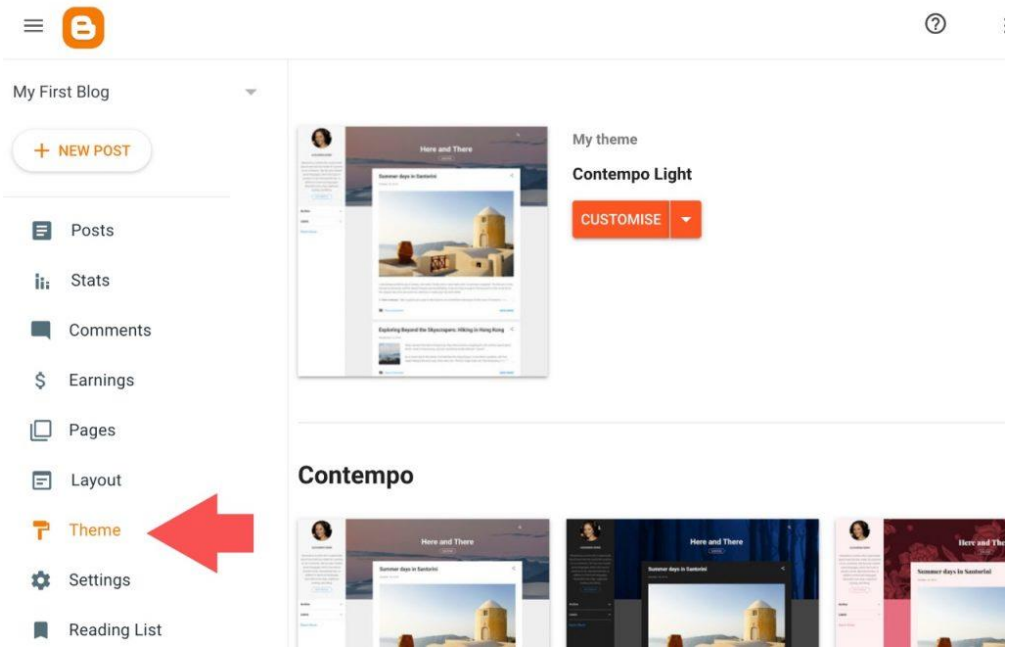


6. Congrats, you have successfully created a blogspot blog.

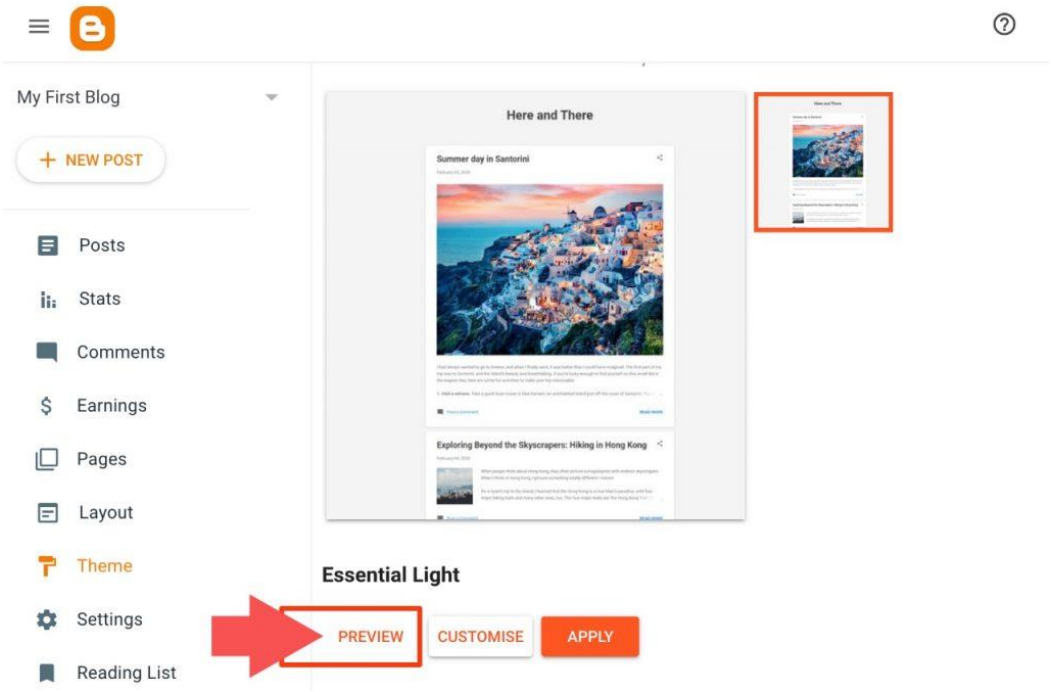


CHANGE A THEME ON BLOGSPOT

1. Click on the Theme menu item on the left side menu list. You see, the default theme is Contempo Light. You may change the Blogger theme at any time.



2. Just scroll down to choose the theme of your choice from the many available options. There are so many Blogspot themes, but we highly recommend using Contempo, Soho, Emporio, Notable, or Essential only. These themes are very fast. You can use Google's PageSpeed Insight to check the loading speed and other issues. You get an option to preview the theme before applying.



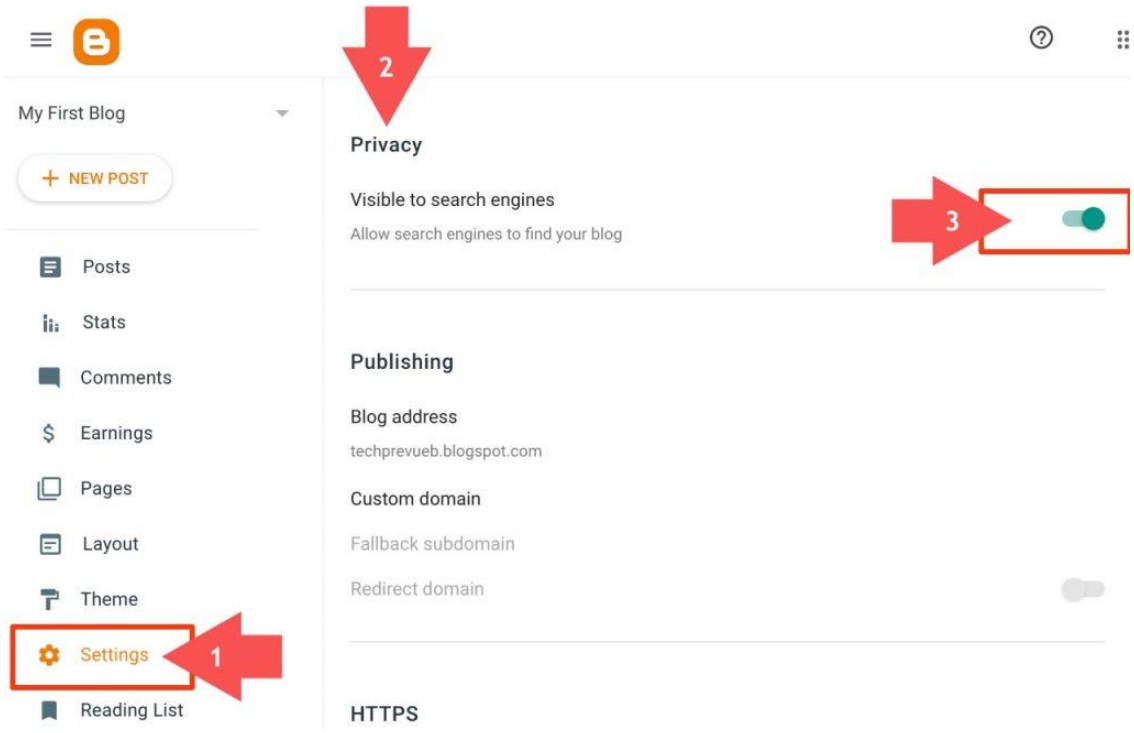
3. You need to click on the Apply button to use the selected theme.

Note: You can also buy premium themes for blogspot blog for beautiful design and customizations. Here's our guide on how to install a blogger theme. You should also know the basics of Blogger's HTML editor.

Is your Blog Visible to Search Engines?

Steps:

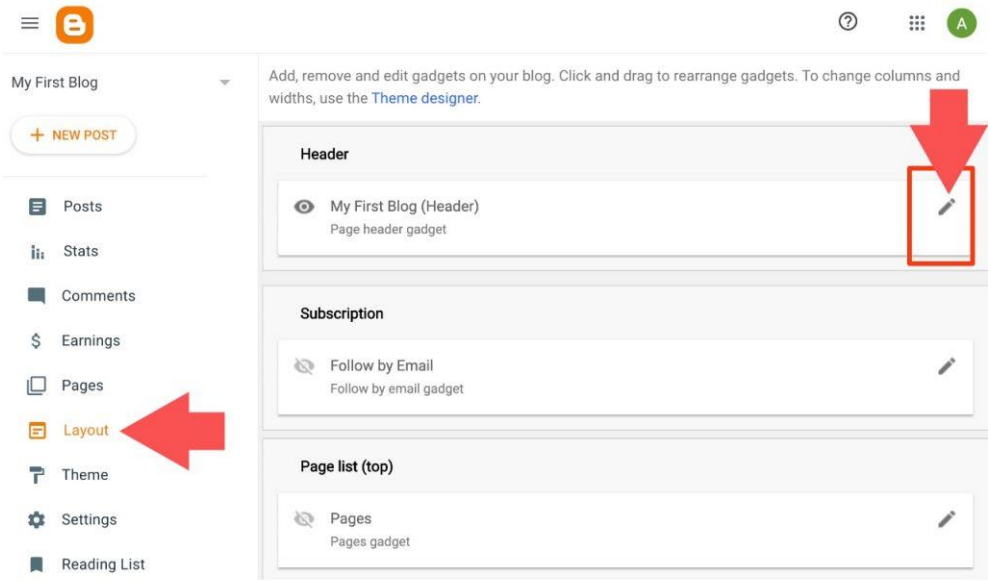
1. Click on the Settings menu item on the left sidebar.
2. Scroll your page to the Privacy section.
3. Double check the toggle button should be green.



How to upload a Logo on Blogspot Blog?

Steps:

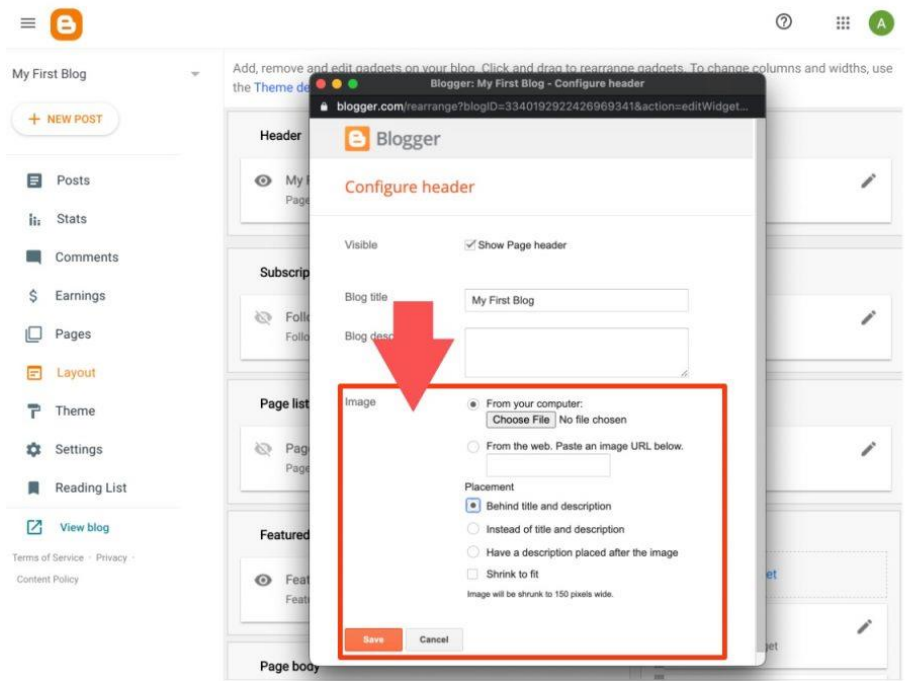
1. Click on the Layout menu item on the left side.
2. In the Header section, click on the edit pencil.



3. You can either choose a file from your computer or paste an image URL to upload a logo on your blog. You also have three options for logo placement; select the right for you.

    - Behind title and description
    - Behind title and description
    - Have a description placed after the image

    You can also tick the Shrink to fit option if the logo is bigger than the header.



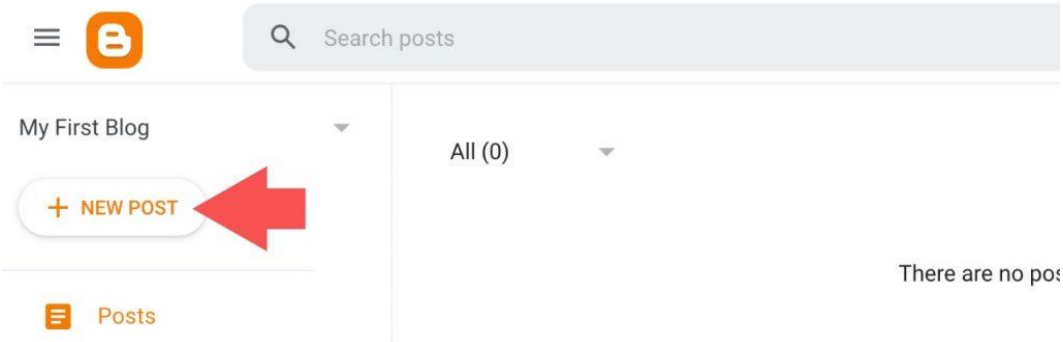
4. Click on the Save button to make changes.

Similar to a logo, a favicon also helps your blog to get identified among other blogs. You can also add a favicon on Blogspot blogs.

How to Publish a Blog Post on Blogspot?

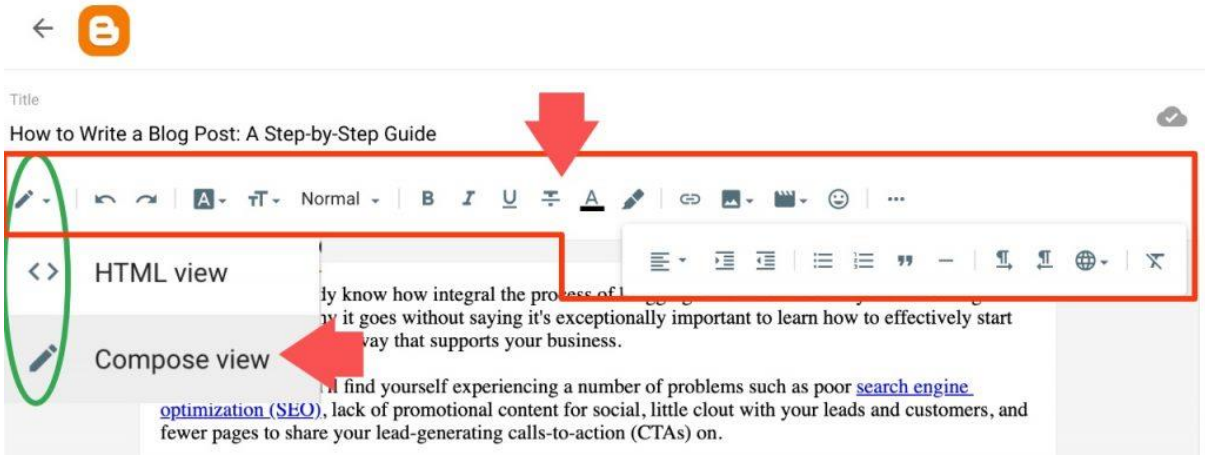
Publishing a blog post consists of different tasks. Hereunder we are discussing a few of them.

Compose a new post
Click the New Post button to create a new post.



The blog post editor and toolbar

A post editor will open. Post editor has HTML view and Compose view. Click on the pencil icon on the composer toolbar to get these options. I recommend the compose view for beginners.

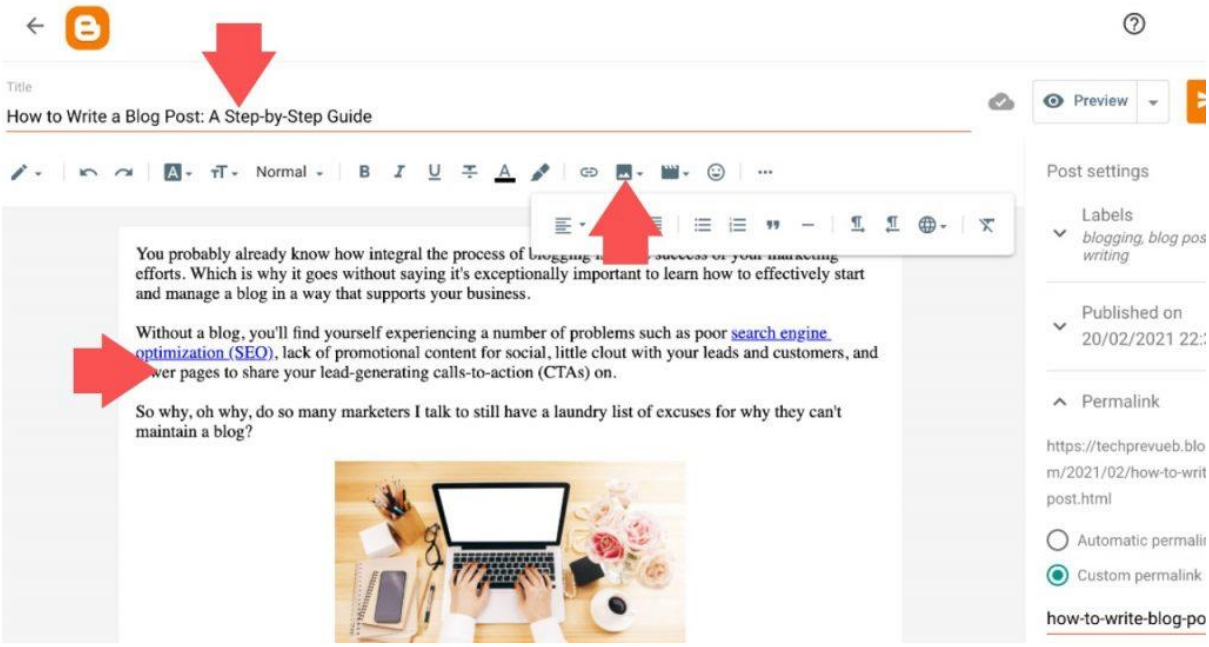


It has different sets of options-

- Toggle between HTML view and Compose view
- Undo and Redo
- Font type, font size, headings, and paragraph
- Bold, italics, underline, strikethrough, text color, and text background color
- Insert or edit links, insert image, insert video, and insert special characters
- Text alignment, increase indent, and decrease indent
- Bulleted list, numbered list, quoted text, and insert jump break
- Left to right layout, right to left layout, and input tools
- Clear formatting

Add Content to a Blog Post

Enter your blog post title, article, and add images just like you do with a word processing tool.

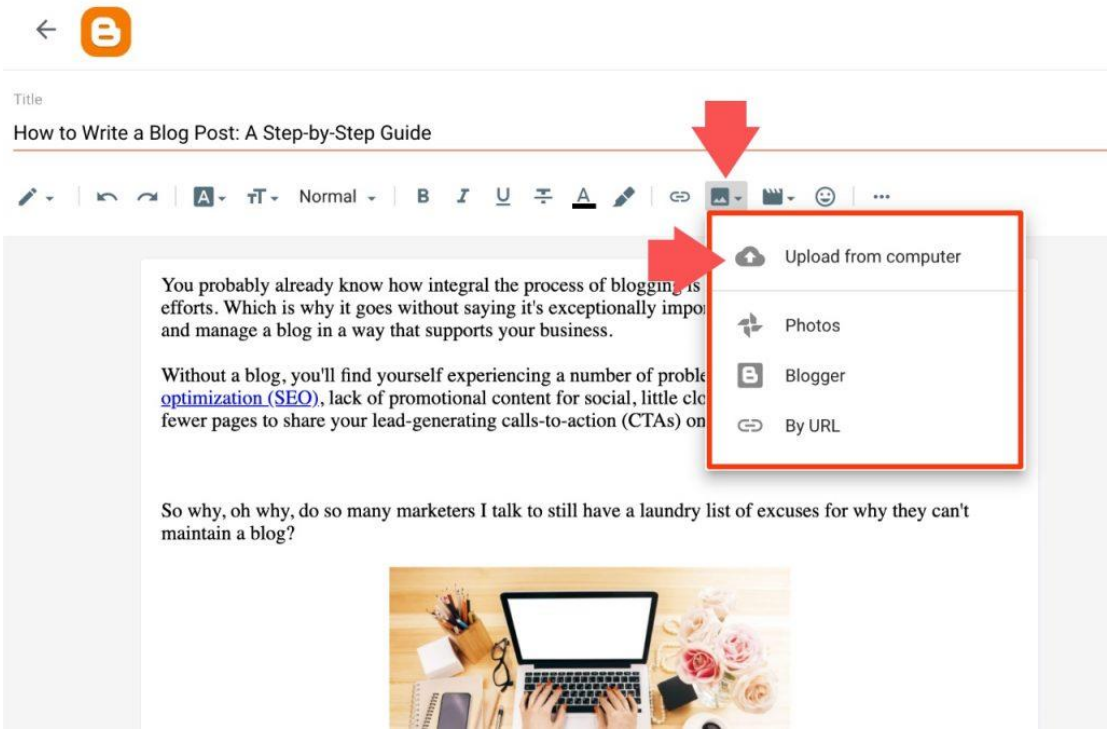


Insert an Image to a Blog Post

1. Place the cursor at the spot where you want the image in a blog post.
2. Click on the image icon in the toolbar.
3. You get four options to add an image to your blog post.

- Upload from computer
- Photos
- Blogger
- By URL

  If you are uploading images from your computer, click on the Choose files and select the required image file.

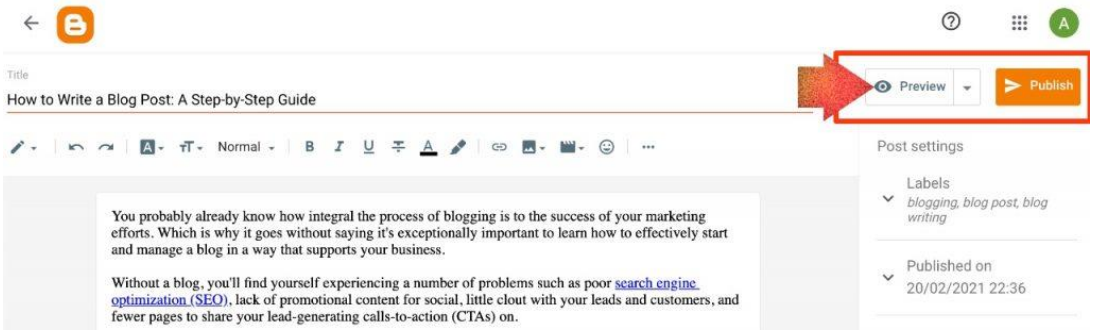


5. Click on the uploaded image to enter the Select button.
   The required image will be added to your blog post.

Preview & Publish a Blog Spot

You can see the preview of your blog post before publishing it. You can do so by clicking on the Preview button in the top right corner.

If the post preview looks perfect, then you can click on the Publish button.



PRACTICAL 07

Aim: Implementing Coding Practices in Python using PEP8.

Solution:

Indeed coding and applying logic is the foundation of any programming language but there's also another factor that every coder must keep in mind while coding and that is the coding style. Keeping this in mind, Python maintains a strict way of order and format of scripting.Following this sometimes mandatory and is a great help on the user's end, to understand. Making it easy for others to read code is always a good idea, and adopting a nice coding style helps tremendously for that.

For Python, PEP 8 has emerged as the style guide that most projects adhere to; it promotes a very readable and eye-pleasing coding style. Every Python developer should read it at some point; here are the most important points extracted for you:

1. **Use 4-space indentation and no tabs.**
   Examples:

```
# Aligned with opening delimiter.
grow = function_name(variable_one, variable_two,

                     variable_three, variable_four)

# First line contains no argument. Second line onwards
# more indentation included to distinguish this from
# the rest.
def function_name(
      variable_one, variable_two, variable_three,
      variable_four):
   print(variable_one)
```

   The 4 space rule is not always mandatory and can be overruled for continuation line.

   2. Use docstrings : There are both single and multi-line docstrings that can be used in Python. However, the single line comment fits in one line, triple quotes are used in both cases. These are used to define a particular program or define a particular function.
   Example:

```
def exam():

   """This is single line docstring"""
```

"""This is

a

multiline comment"""

3. Wrap lines so that they don't exceed 79 characters: The Python standard library is conservative and requires limiting lines to 79 characters. The lines can be wrapped using parenthesis, brackets, and braces. They should be used in preference to backslashes.
Example:

```
with open('/path/from/where/you/want/to/read/file') as file_one, \

    open('/path/where/you/want/the/file/to/be/written', 'w') as file_two:

  file_two.write(file_one.read())
```

4. Use of regular and updated comments are valuable to both the coders and users : There are also various types and conditions that if followed can be of great help from programs and users point of view. Comments should form complete sentences. If a comment is a full sentence, its first word should be capitalized, unless it is an identifier that begins with a lower case letter. In short comments, the period at the end can be omitted. In block comments, there are more than one paragraphs and each sentence must end with a period. Block comments and inline comments can be written followed by a single '#'.
Example of inline comments:

```
geek = geek + 1              # Increment
```

5. Use of trailing commas: This is not mandatory except while making a tuple.

Example:

```
tup = ("geek",)
```

6. **Use Python's default UTF-8 or ASCII encodings and not any fancy encodings, if it is meant for international environment**

7. **Use spaces around operators and after commas, but not directly inside bracketing constructs:**

a = f(1, 2) + g(3, 4)

8. **Naming Conventions:** There are few naming conventions that should be followed in order to make the program less complex and more readable. At the same time, the naming conventions in Python is a bit of mess, but here are few conventions that can be followed easily.

There is an overriding principle that follows that the names that are visible to the user as public parts of API should follow conventions that reflect usage rather than implementation.

Here are few other naming conventions:
b (single lowercase letter)

B (single upper case letter)

lowercase

lower_case_with_underscores

UPPERCASE

UPPER_CASE_WITH_UNDERSCORES

CapitalizedWords (or CamelCase). This is also sometimes known as StudlyCaps.

Note: While using abbreviations in CapWords, capitalize all the letters

of the abbreviation. Thus HTTPServerError is better than HttpServerError.

mixedCase (differs from CapitalizedWords by initial lowercase character!)

Capitalized_Words_With_Underscores

In addition to these few leading or trailing underscores are also considered.

Examples:

single_leading_underscore: weak “internal use” indicator. E.g. from M import * does not import objects whose name starts with an underscore.

single_trailing_underscore_: used to avoid conflicts with Python keyword.

Example:

Tkinter.Toplevel(master, class_='ClassName')

__double_leading_underscore: when naming a class attribute, invokes name mangling.

(inside class FooBar, __boo becomes _FooBar__boo;).

__double_leading_and_trailing_underscore__: “magic” objects or attributes that live in user-controlled namespaces. E.g. __init__, __import__ or __file__. Only use them as documented.

8. **Characters that should not be used for identifiers:** ‘l’ (lowercase letter el), ‘O’ (uppercase letter oh), or ‘I’ (uppercase letter eye) as single character variable names as these are similar to the numerals one and zero.

9. **Don’t use non-ASCII characters in identifiers if there is only the slightest chance people speaking a different language will read or maintain the code.**

10. **Name your classes and functions consistently:** The convention is to use CamelCase for classes and lower_case_with_underscores for functions and methods. Always use self as the name for the first method argument.

11. **While naming of function of methods always use self for the first argument to instance methods and cls for the first argument to class methods. If a functions argument name matches with reserved words then it can be written with a trailing comma. For e.g., class_**

You can refer to this simple program to know how to write an understandable code:

```
# Python program to find the
# factorial of a number provided by the user.

# change the value for a different result
num = 7

# uncomment to take input from the user
#num = int(input("Enter a number: "))

factorial = 1

# check if the number is negative, positive or zero
if num < 0:
    print("Sorry, factorial does not exist for negative numbers")
elif num == 0:
    print("The factorial of 0 is 1")
else:
    for i in range(1,num + 1):
        factorial = factorial*i

print("The factorial of",num,"is",factorial)
```

Output:

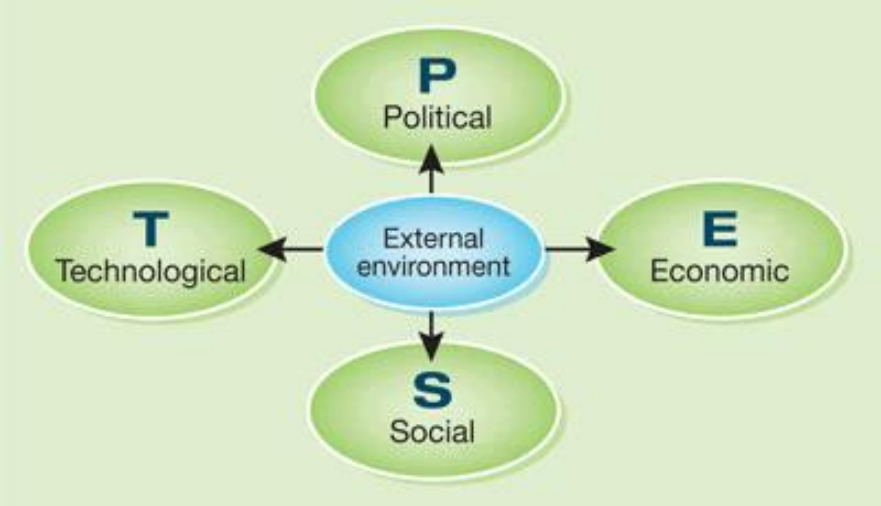
```
The factorial of 7 is 5040
```

PRACTICAL 8

Aim: Importance of The Multidisciplinary Nature of Environmental Studies

The word environment is derived from the French word 'environner' which means to 'encircle or surround'. Thus our environment can be defined as "the Social, Cultural and Physical conditions that surround, affect and influence the survival, growth and development of people, animals and plants". This broad definition includes the natural world and the technological environment as well as the cultural and social contexts that shape human lives.

EVS is a multidisciplinary academic field that is involved with the exploration, research, and expansion of an understanding of the living and physical environment. It also helps in a better understanding of the natural, political, technological, economic, social, and cultural aspects of environments. It can also be said that Environmental Studies or EVS is the science of physical phenomena in the environment.



The word 'disciplinary' means to have a disciplined study in a particular field. On the contrary, multidisciplinary refers to the combination of more than one discipline or field of study. It defines the multi-sectoral, and multi-dimensional study in various fields. For instance, when you study various subjects such as Science, Social Science, Mathematics, English, etc., then it is considered a multidisciplinary course of study.

What do you understand by the Multidisciplinary Nature of Environmental Studies?
Environmental Study is a vast subject to be studied upon. It has all the aspects of various subjects such as anthropology, science, social science, statistics, economics, computers, geology, health, and sociology. It illustrates the multi-sectoral and multi-dimensional study in various fields. It also educates us about the Physical, Social, Cultural, and Biological aspects.

It brings our natural environment and human impacts altogether. It is a multidisciplinary approach that deals with every issue that affects an organism. It covers the impacts of environmental science and social aspects of the environment as well.

Why is EVS known as the Multidisciplinary Nature of Environmental Studies?
Environmental Studies consist of different components. They are listed below**:**

- Anthropology – It is the study of human characteristics, their biological and psychological wellbeing, their societies and cultures, their development and evolution. EVS is related to anthropology as it deals with the study of humans and their environment as well across space and time.
- Biology – It is a branch of science that is concerned with the study of living organisms. It includes their physical structure, chemical processes, molecular interactions, development, and evolution. EVS is related to biology as it deals with the natural habitat of the living organisms.
- Chemistry – It is a branch of science that studies chemicals and the substances of which matter is composed of. In EVS, for the understanding of natural phenomena, we require knowledge of chemistry.
- Computers – With the advancing world, computers have become everyone's requirement. The Environmental Protection Agency uses computers to maintain a record and to investigate chemicals that are used in soil and water.
- Economics – It is a branch of knowledge that is concerned with the production, consumption, and distribution of goods and services. To protect the environment from pollution, global warming, and climate change, various economic policies have been developed in analysing and finding solutions or remedies for environmental issues.
- Geology – It is the study of physical structures and the substances that are present on earth, their history, and the processes they go through. EVS also deals with the study of the earth and the environment.
- Physics – It is a branch of science that studies the energy and matter in space and time and their relationship with each other. Physics works on energy conservation, atmospheric models, and various issues related to the **environment.**
- Sociology – It is the study of social life, social change, social causes, and the social consequences of human behavior. It also deals with the relationship between modern societies and the environment.
- Statistics – It is the study of collecting, analysing, interpreting, and presenting quantitative data. It is also used to analyze data to discover patterns and suggest the best growth of the environment.

Importance of Multidisciplinary nature of Environmental Studies

Environmental Studies is essential as it helps us to understand our surrounding environment and natural phenomena. Numerous points provide us the importance of the Multidisciplinary nature of Environmental Studies. They are:

- It helps in gaining knowledge about the current environmental issues. It provides us with the necessary skills to obtain solutions for various environmental issues such as pollution, global warming, and climate change.

- It helps in maintaining the ecological balance through fundamental knowledge of environmental systems and processes.
- It provides us information about the changes in the environment due to anthropogenic factors. It also provides us the skills for analysing different environmental systems and changes in the environment because of human activities.
- It aims to preserve and protect biodiversity. It makes us familiar with the various species of flora and fauna. It provides us with different ways to preserve and protect them.
- It provides us the consciousness about our duties towards the environment. It additionally educates us about the various environmental issues which need to be resolved at a faster pace. Environmental issues such as conservation of energy, toxic emissions, water conservation, proper disposal of wastes, rising global temperature, and many more are also explained to us by environmental studies.
- Various more issues such as the depletion of natural resources, growing human population, rising numbers of natural calamities, for instance, earthquakes, tsunamis, floods, drought, are all serious concerns that need to be taken seriously. EVS makes us understand the harmful and drastic effects of these issues on the environment, and humans as well.
- By studying Environmental Studies, people can explore and connect with their natural and surrounding environment. It helps people in developing their insights for understanding human processes, natural phenomena, and various changes in the environment.

What is the Scope of Multidisciplinary Nature of Environmental Studies?

The scope of Multidisciplinary Nature of Environmental Studies consists of various aspects such as biological, cultural, social, and physical. It is also related to other subjects such as science, geography, economics, statistics, health, technology, population, and ecology.

- Biological aspects – This is one of the most essential aspects of environmental studies. It is the solution of an organism, or a population, or a community to changes in its environment. Human beings, plants, animals, microorganisms, birds, insets are all included in the biological aspects.
- Cultural aspects – The environment gives knowledge about different customs, laws, dresses, values, and religious beliefs. They all are included under cultural aspects. Environmental studies help us in understanding these diverse aspects.
- Physical aspects – The environment which is shaped by human activities are considered as physical aspects, for example, bridges, roads, buildings, industries, etc. Apart from them, natural resources such as land, air, water, minerals, vegetation, landforms like hills, oceans, mountains, forests, etc.
- Social aspects – It illustrates the standard of living, tastes, preferences, educational status, and etiquettes of individuals living in society. Environmental Studies give acquaintance about people who have linguistic, cultural, and educational differences in societies.

How the Multidisciplinary Nature of Environmental Studies helps in solving environmental problems?

Environmental Studies deals with various areas – conservation of natural resources, controlling pollution, the impact of the growing human population on the environment. A multidisciplinary nature is required to address these complex environmental problems. These problems are connected with different sectors like agriculture, land degradation, economic loss, contamination of natural resources, forestry, habitat fragmentation, ozone layer depletion, solid waste management, etc.

The emerging climatic and environmental concerns need multidisciplinary solutions. Environmental issues are an alarming indication of upcoming disasters. Therefore, to gain knowledge about these issues, the Multidisciplinary Nature of Environmental Studies is a must.

There are various ways in which our environment can be conserved. Some of them are listed below:

- Replacing disposal items with reusable ones.
- Proper disposal of wastes
- Recycling of paper, plastics, etc.
- Neutralizing the poisonous emissions by the factories
- Conserve resources like water and electricity
- Support eco-friendly products more
- Afforestation and reforestation
- Enhancement of the use of public transport
- Limit the use of paper
- By spreading awareness about the importance of the environment

A pure, harmless, and pollution-free environment is every individual's right. These issues can be solved when people acquaintance with the need of conserving the environment. For this, knowledge of Environmental Studies is needed.

Conclusion

EVS is a multidisciplinary academic field that is involved with the exploration, research, and expansion of an understanding of the living and physical environment. It has all the aspects of various subjects such as anthropology, science, social science, statistics, economics, computers, geology, health, and sociology. It brings our natural environment and human impacts altogether. Environmental Studies is essential as it helps us to understand our surrounding environment and natural phenomena.

It provides us with the necessary skills to obtain solutions for various environmental issues such as pollution, global warming, and climate change. It aims to preserve and protect biodiversity. Environmental Studies deals with various areas – conservation of natural resources, controlling pollution, the impact of the growing human population on

the environment. Environmental issues such as conservation of energy, toxic emissions, water conservation, proper disposal of wastes, rising global temperature, and many more are also explained to us by environmental studies.

The emerging climatic and environmental concerns need multidisciplinary solutions. Environmental issues are an alarming indication of upcoming disasters. Therefore, to gain knowledge about these issues, the Multidisciplinary Nature of Environmental Studies is a must. The scope of Multidisciplinary Nature of Environmental Studies consists of various aspects such as biological, cultural, social, and physical. It is also related to other subjects such as science, geography, economics, statistics, health, technology, population, and ecology.

PRACTICAL 9

Aim: Importance of Going Paperless

"Going Paperless" is a term that was coined not so long ago to describe the processes of "reducing the amount of paper used in a business context, exchanging printed pages for digital documents especially in internal processes."

Common paperless areas of choice by companies include receipts, invoices, tax returns and pay checks, among others. Areas that manual work adds no real value to the company and the steps required to have its work done are too time-consuming.

It should not be a surprise that, once this wave started, it was only a matter of time for it to become bigger. This happened mainly because of the rise of modern technology that is taking over companies worldwide, digitalising several processes that were previously made with tons of paper.

Seven reasons why going paperless may be beneficial for your small business:

1. Document organization

The ability to quickly locate and disseminate information may enhance your company's efficiency and professional image. Spending time hunting through piles of paper slows down response time in an age when most answers are only a few keystrokes away. By scanning electronic copies of receipts and invoices, documents can be sorted, filed, and organized for quick retrieval when it matters most.

2. Client communication is faster and less expensive

By maintaining a customer email list, you can instantaneously communicate sales and special offers without incurring postage and printing expenses. With the advanced technology of smart devices, most people have immediate access to emails. While it increases efficiency, electronic communication also decreases storage costs as the amount of paper copies littering your office will begin to dwindle.

3. Paperless files are easily saved and retrieved on the go

With the advent of photo-scanning apps, business travellers can easily back up expense reports without needing to save a pile of papers to bring back to the office. Electronic files can also be shared with co-workers over a network or via email. Shifting to paperless documentation also makes the transportation of data more efficient, without the need for cumbersome fax machines or document couriers.

4. Automatic backups

When you accidentally throw out an important paper, it's usually gone forever. However, maintaining electronic files allows for multiple backup points. Data can be saved on flash drives, in the cloud, or to an external hard drive. For vitally important financial data, cloud-based accounting systems provide automatic backups on a pre-scheduled basis, which eliminates the need for small business owners to set aside time for manual backups.

5. Data security

Customers will always be concerned about privacy and data protection, which requires companies to respond by implementing proper data security procedures beyond locked filing cabinets and paper shredders. Many of today's cloud-based accounting systems offer bank-level data security to protect financial and customer information, which is more than most small companies with limited technology staff can afford to build in-house.

6. Environmental friendliness

According to the Environmental Paper Network's most recent State of the Paper Industry report, paper usage in North America is decreasing while the amount of paper recovered for recycling is increasing. Companies are striving to recycle, yet office copy paper alone still accounts for over 20 percent of the total paper usage in the United States. But being green is more than just reducing paper production. A paperless environment may also mean less energy consumption. Small businesses use less energy when printers, faxes, and copiers are inactive.

7. Financial benefits

The savings of going paperless extends beyond just the cost of the paper, which can be substantial. The cost of other office supplies like ink cartridges also decreases. Additional upgrades or replacements to expensive office equipment such as copiers and fax machines may also decrease in a paperless office.

The shift toward a paperless environment increases each year as new technology becomes available to improve data storage and electronic communication. Taking action to reduce paper usage may help your business be more efficient and enhance the level of security that guards your most valuable information.

PRACTICAL 10:

Aim: Define the terms renewable resource and non-renewable and give examples of each resource type that are related to forage production

A **natural resource** is something supplied by nature that helps support life. When you think of natural resources, you may think of minerals and fossil fuels. However, ecosystems and the services they provide are also natural resources. **Biodiversity** is a natural resource as well.

Renewable Resources

Renewable resources can be replenished by natural processes as quickly as humans use them. Examples include sunlight and wind. Metals and other minerals are renewable too. They are not destroyed when they are used and can be recycled.

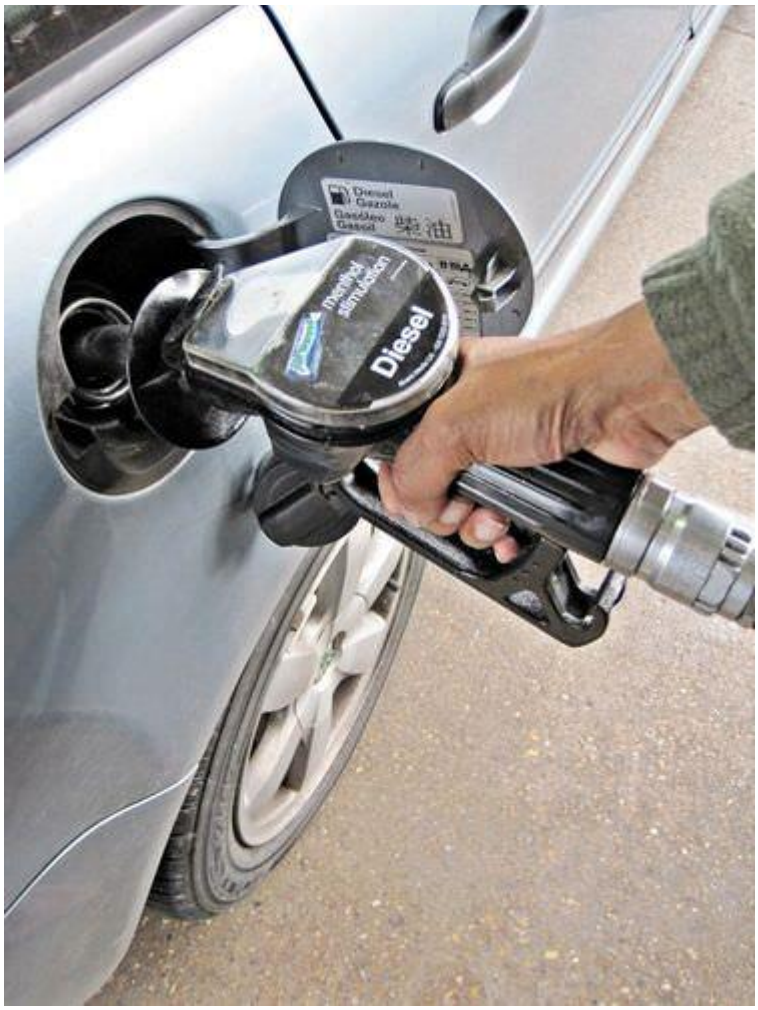
Wind is a renewable resource. Wind turbines like this one harness just a tiny fraction of wind energy.

Living things are considered to be renewable. This is because they can reproduce to replace themselves. However, they can be over-used or misused to the point of extinction. To be truly renewable, they must be used sustainably. **Sustainable use** is the use of resources in a way that meets the needs of the present and also preserves the resources for future generations.

Non-renewable Resources

Non-renewable resources are natural resources that exist in fixed amounts and can be used up. Examples include fossil fuels such as petroleum, coal, and natural gas. These fuels formed from the remains of plants over hundreds of millions of years. We are using

them up far faster than they could ever be replaced. At current rates of use, petroleum will be used up in just a few decades and coal in less than 300 years. Nuclear power is also considered to be a non-renewable resource because it uses up uranium, which will sooner or later run out. It also produces harmful wastes that are difficult to dispose of safely.



Gasoline is made from crude oil. The crude oil pumped out of the ground is a black liquid called petroleum, which is a non-renewable resource.

Coal is another non-renewable resource.

One environmental issue that has been of prominent concern in the 20th century has been the growth in human population. The chart below, from the population reference bureau, illustrates the dramatic growth in human population beginning around the year 1750. As human population has grown the demand for resources of all kinds has also grown. Supporting more people means producing more food, which in turn requires greater amounts of energy, soil nutrients, water, and other resources associated with agricultural production

There are many types of resources that go into producing food and producing forages. In general these resources have been grouped into two types: renewable resources and non-renewable resources. Renewable resources may be defined as resources that have the potential to be replaced over time by natural processes. The renewal process may be relatively quick, as with sunshine which comes on a daily basis. Or, the renewal process may be very slow, as in the formation of soil which may take hundreds of years. Non-renewable resources may be defined as resources whose stock or reserves is limited or fixed. The available supply of non-renewable resources may be replenished through recycling (e.g. recycling aluminium cans), but the overall supply remains relatively constant. The table below gives several examples of each type of resource.

Renewable Resources	Non-renewable resources
Solar Energy	Oil
Soil	Steel
Trees	Aluminium

Grass	Coal
Groundwater	Phosphates

Examining the resources listed in the table above suggests that modern agricultural production, including forage production, is dependent on a number of resources that are considered non-renewable. Farm equipment contains steel and aluminium parts and uses oil based fuels. The energy to manufacture fertilizer and other agrichemicals is derived from oil, coal, and natural gas. Phosphate fertilizers are widely used on crops. The realization of this dependence on non-renewable resources has led to increased interest in developing and implementing so called sustainable agricultural production systems.