MALAD KANDIVALI EDUCATION SOCIETY'S
NAGINDAS KHANDWALA COLLEGE OF COMMERCE,
ARTS & MANAGEMENT STUDIES & SHANTABEN NAGINDAS
KHANDWALA COLLEGE OF SCIENCE
MALAD [W], MUMBAI – 64
(AUTONOMOUS)

(Reaccredited 'A' Grade by NAAC)
(AFFILIATED TO UNIVERSITY OF MUMBAI)
(ISO 9001:2015)

CERTIFICATE

Name: Mr./Ms._____YAJAT R. DALVI_____

Roll No: _08____ **Programme**: BSc IT/CS **Semester**: II

This is certified to be a bonafide record of practical works done by the above student in the college laboratory for the course **IT platforms, Tools and Practices** (Course Code: **2026UISTP**) for the partial fulfillment of Second Semester of BSc IT/CS during the academic year 2020-2021.

The journal work is the original study work that has been duly approved in the year 2020-2021 by the undersigned.

_____ _____

External Examiner **Subject-In-Charge**
(Ms.Sweety Garg)

Date of Examination: (College Stamp)

Name: Yajat R Dalvi **Roll No: 08**

Sr. No.	DATE	TITLE	SIGN
1.		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	
2.		Creating account, repository on GitHub and Cloning repository in GitHub Page	
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.		WRITING EMAIL	
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.		PRESENTATION: GREEN DATA STORAGE	

Practical 1

a) Description about wikipedia and its features :

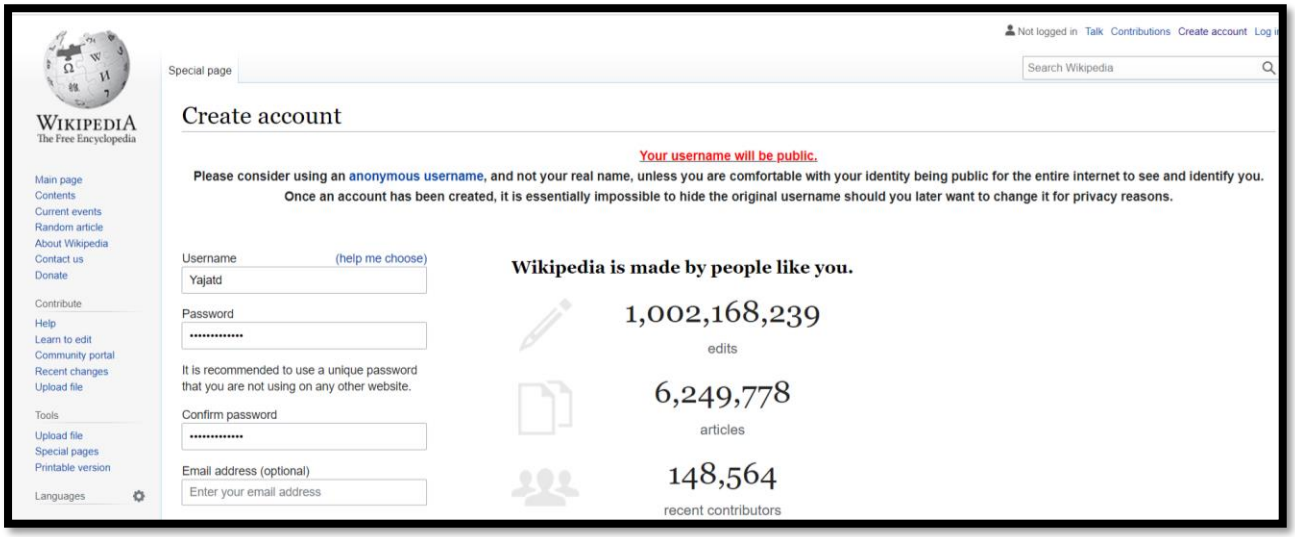
Description:

Wikipedia is a free, multilingual open-collaborative online encyclopedia created and maintained by a community of volunteer editors using a wiki-based editing system. It is one of the 15 most popular websites as ranked by Alexa, as of January 2021 and *The Economist* newspaper placed it as the "13th-most-visited place on the web". Featuring no advertisements, it is hosted by the Wikimedia Foundation, an American non-profit organization funded primarily through donations.

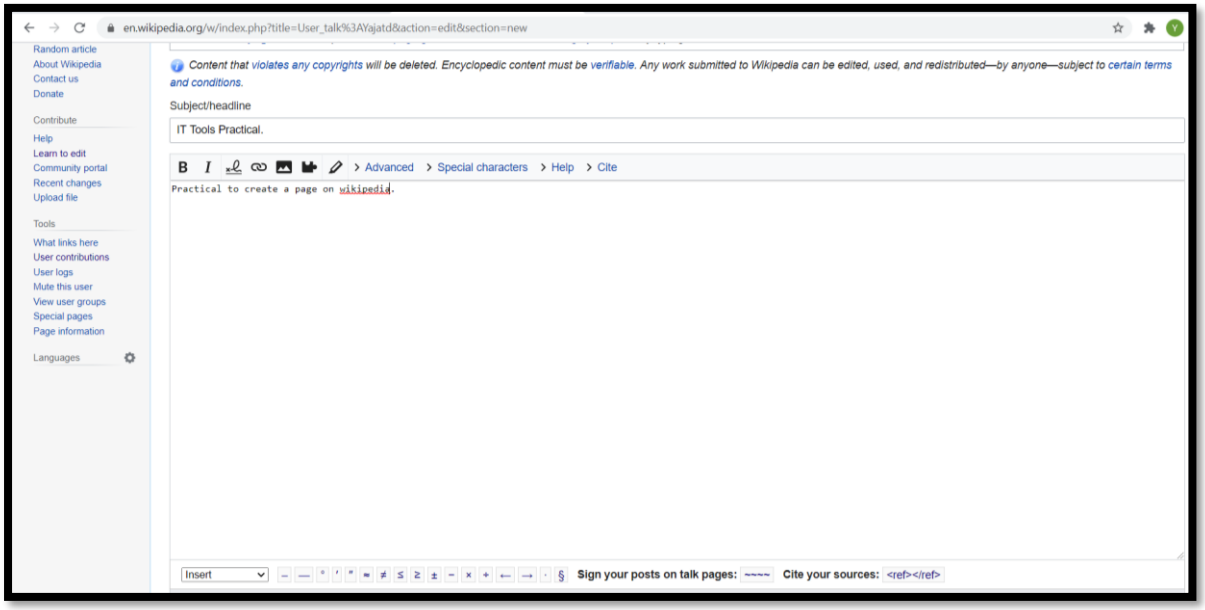
Features:

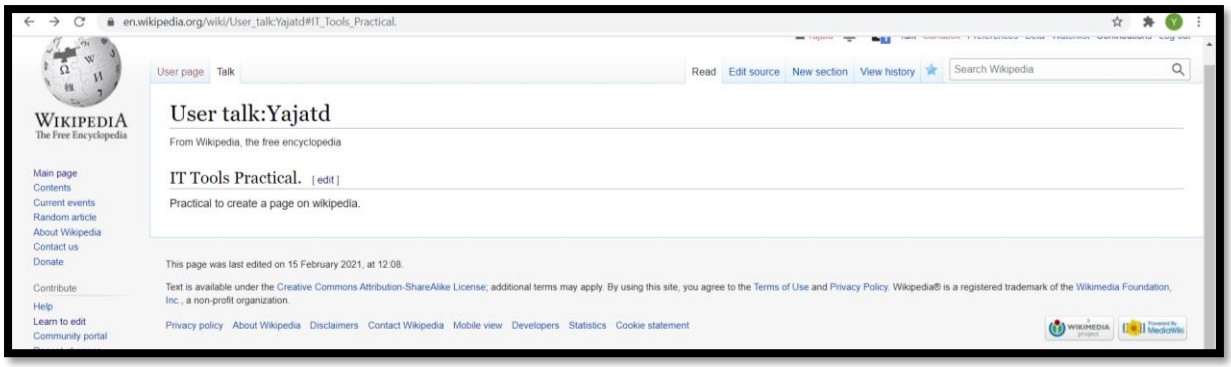
- Creating a page
- Editing a page
- Linking between pages
- Full page search
- Hierarchical page display
- A list of the most recently edited pages
- Searching with tags

b) Creating account on wikipedia

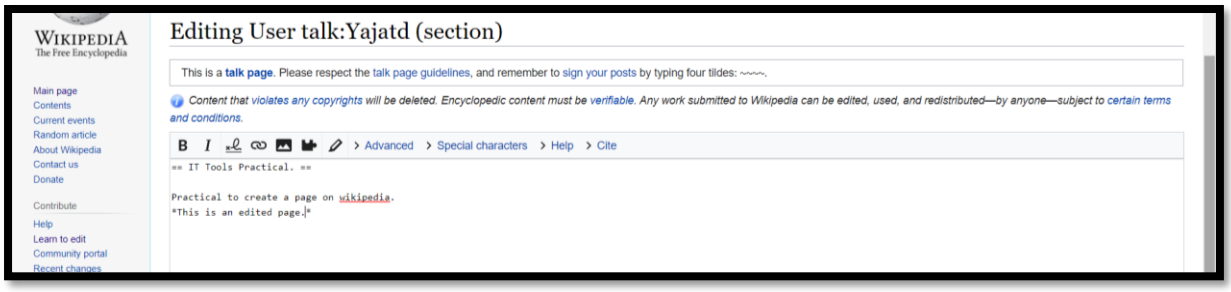


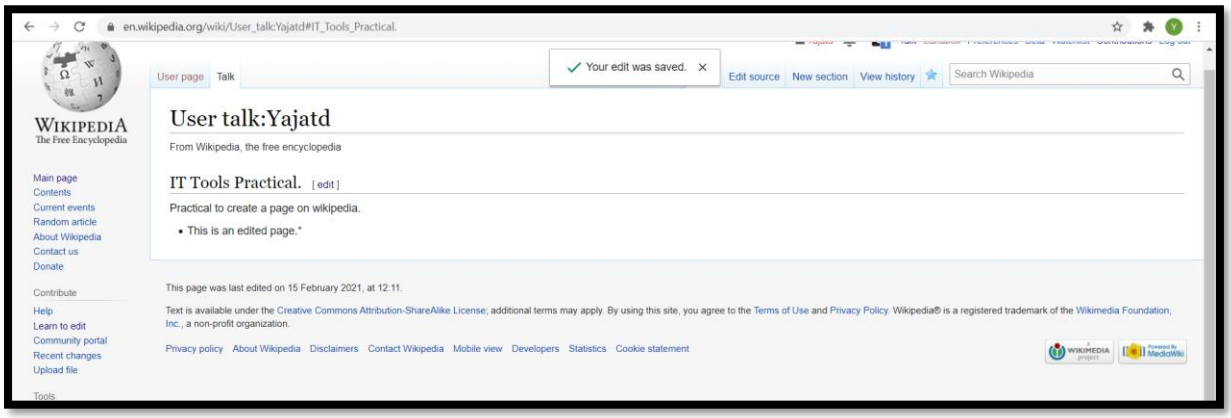
c) Creating a page on wikipedia:





d) Editing a page on wikipedia:

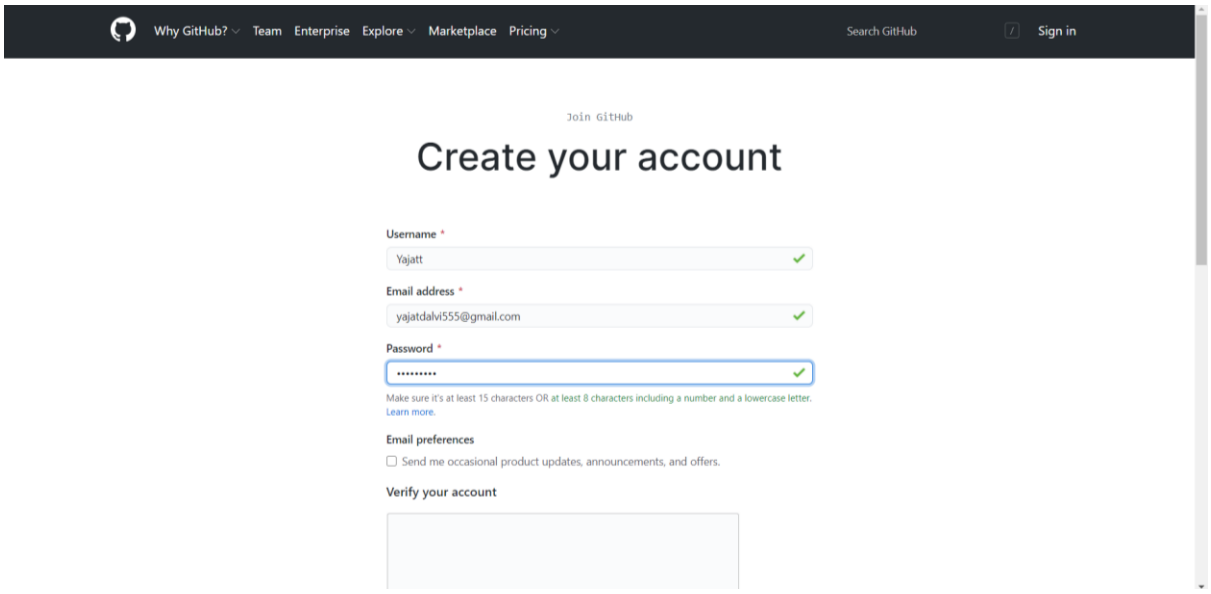




Practical-2

A) Creating account on Git-Hub :

i)Creating account:



ii) Choosing interests:

Welcome to GitHub

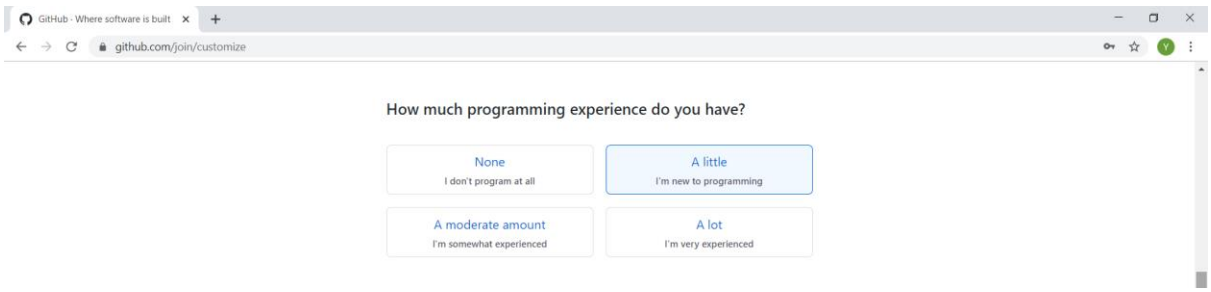
Woohoo! You've joined millions of developers who are doing their best work on GitHub. Tell us what you're interested in. We'll help you get there.

What kind of work do you do, mainly?

- Software Engineer — I write code
- Student — I go to school
- Product Manager — I write specs
- UX & Design — I draw interfaces
- Data & Analytics — I write queries
- Marketing & Sales — I look at charts
- Teacher — I educate people
- Other — I do my own thing

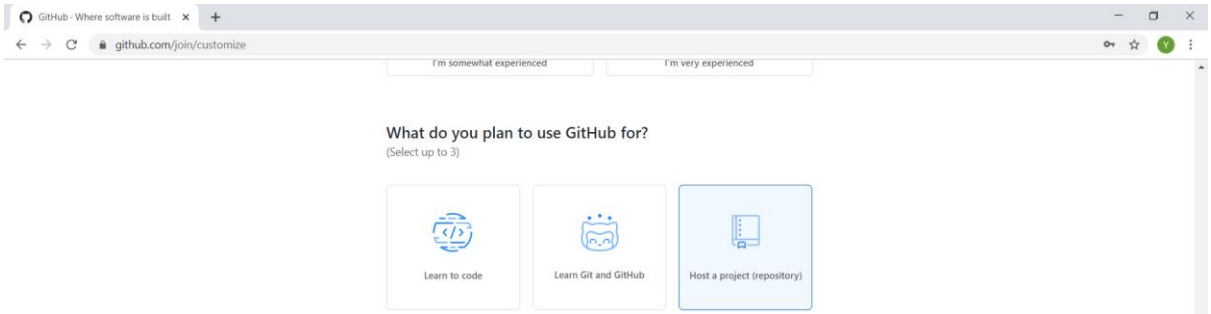
How much programming experience do you have?

- None
- A little



How much programming experience do you have?

- None — I don't program at all
- A little — I'm new to programming
- A moderate amount — I'm somewhat experienced
- A lot — I'm very experienced

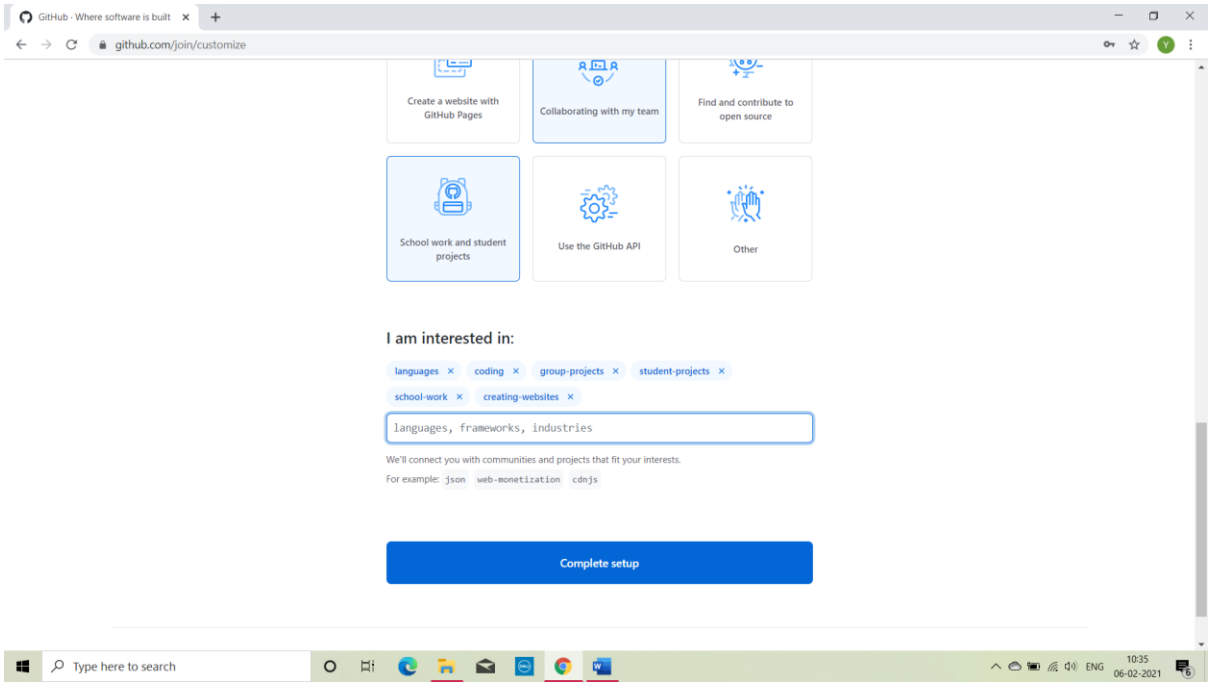


I'm somewhat experienced — I'm very experienced

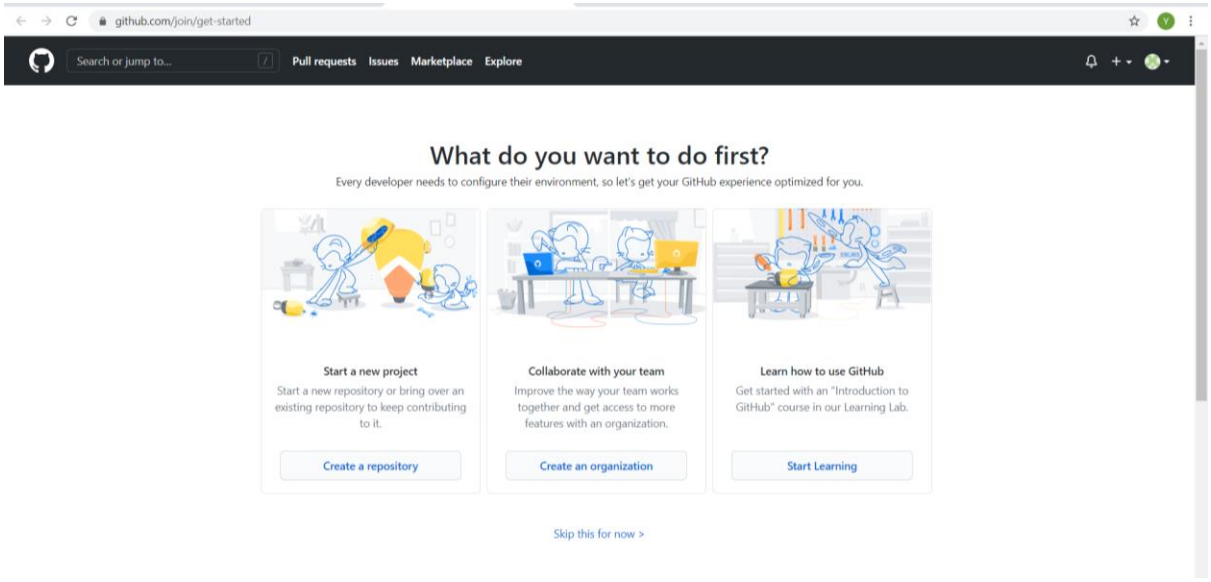
What do you plan to use GitHub for?

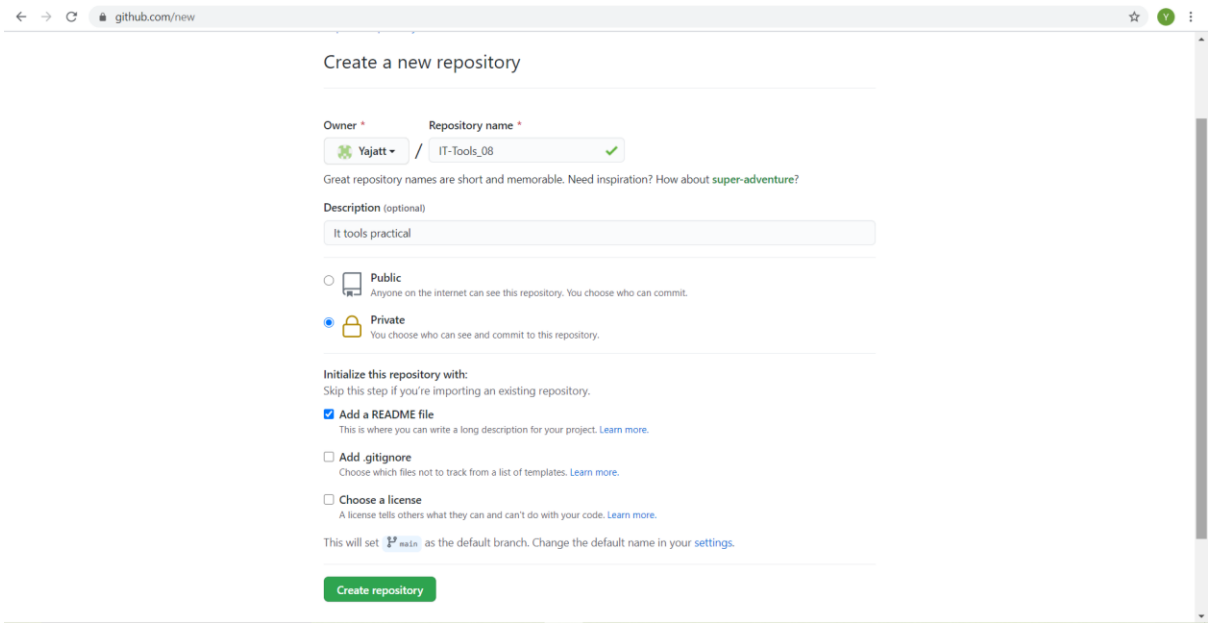
(Select up to 3)

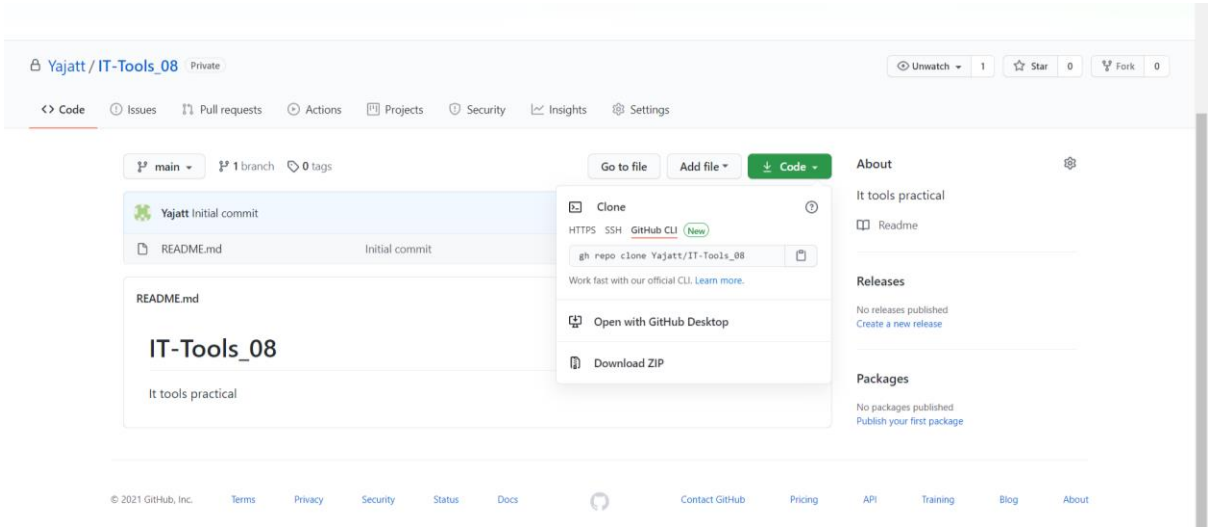
- Learn to code
- Learn Git and GitHub
- Host a project (repository)
- Create a website with GitHub Pages
- Collaborating with my team
- Find and contribute to open source
- School work and student projects
- Use the GitHub API
- Other



B) Creating a repository




github.com/new
Create a new repository
Owner *
Repository name *
Yajatt
IT-Tools_08
Great repository names are short and memorable. Need inspiration? How about super-adventure?
Description (optional)
It tools practical
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.
This will set main as the default branch. Change the default name in your settings.
Create repository


Yajatt / IT-Tools_08
Private
Unwatch 1
Star 0
Fork 0
Code
Issues
Pull requests
Actions
Projects
Security
Insights
Settings
main
1 branch
0 tags
Go to file
Add file
Code
Yajatt Initial commit
README.md
Initial commit
README.md
IT-Tools_08
It tools practical
Clone
HTTPS SSH GitHub CLI New
gh repo clone Yajatt/IT-Tools_08
Work fast with our official CLI. Learn more.
Open with GitHub Desktop
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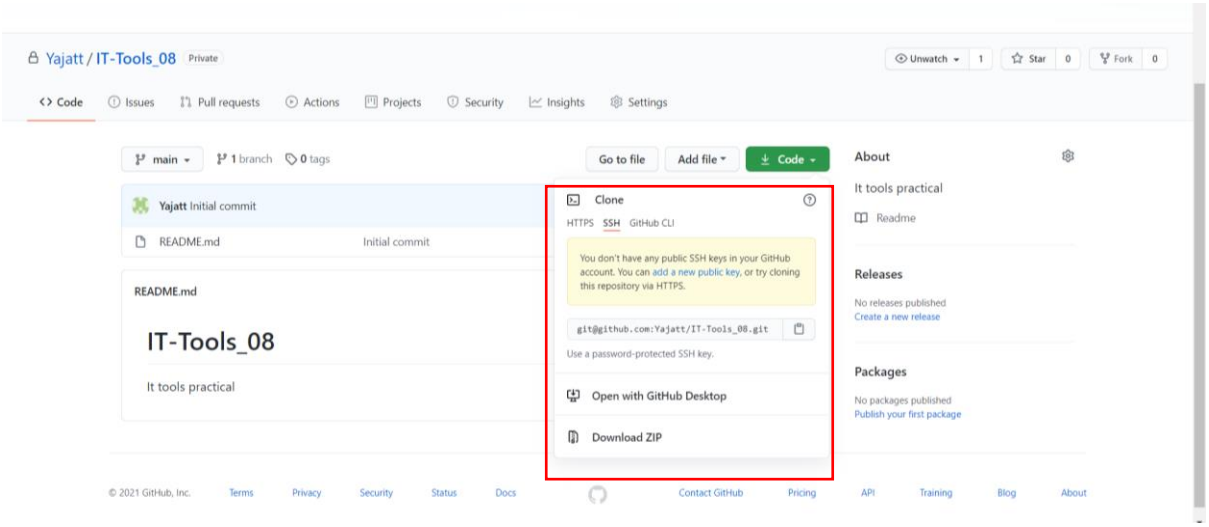
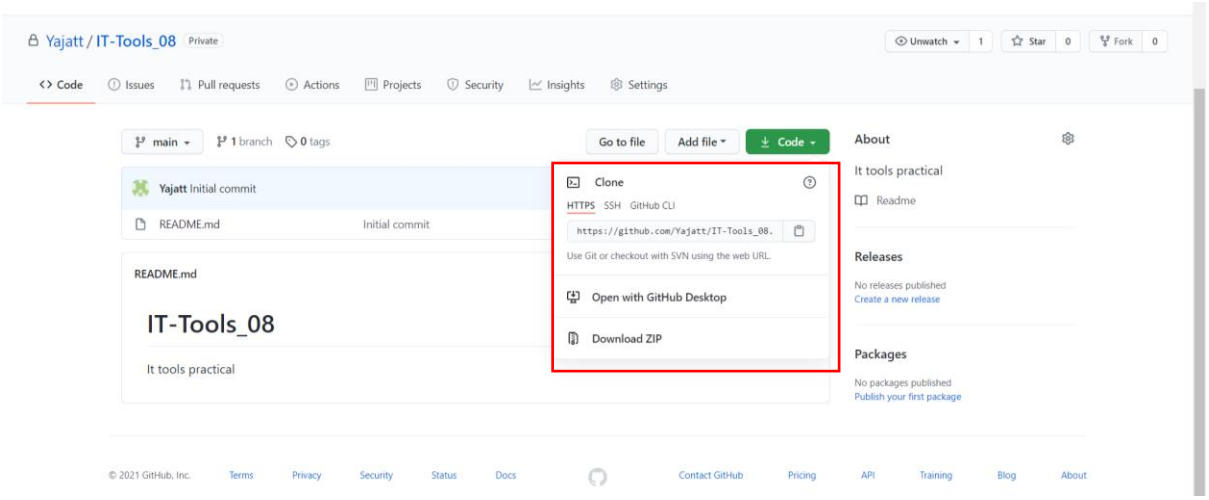
C) Cloning the repository:





Practical – 3

A) Describe Open-source software with example.

Open-source software (OSS) is software that is distributed with its source code, making it available for use, modification, and distribution with its original rights. Source code is the part of software that most computer users don't ever see; it's the code computer programmers manipulate to control how a program or application behaves. Programmers who have access to source code can change a program by adding to it, changing it, or fixing parts of it that aren't working properly. OSS typically includes a license that allows programmers to modify the software to best fit their needs and control how the software can be distributed.

Some examples are –

- GNU/Linux
- Mozilla Firefox
- VLC media player
- SugarCRM
- GIMP
- VNC
- Apache web server
- LibreOffice
- jQuery

B) Describe free software with example.

"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**. Thus, "free software" is a matter of liberty, not price. To understand the concept, you should think of "free" as in "free speech," not as in "free beer". We sometimes call it "libre software," borrowing the French or Spanish word for "free" as in freedom. A program is free software if it gives users adequately all of these freedoms. Otherwise, it is non-free.

Some Examples of free software are-

- WordPress
- LibreOffice
- Blender

C) Difference between Free and Open-source Software.

Open Source is applied to any product that has a freely accessible source code. Anyway, the License may not permit changes to be dispersed and may forestall unmodified dissemination too.

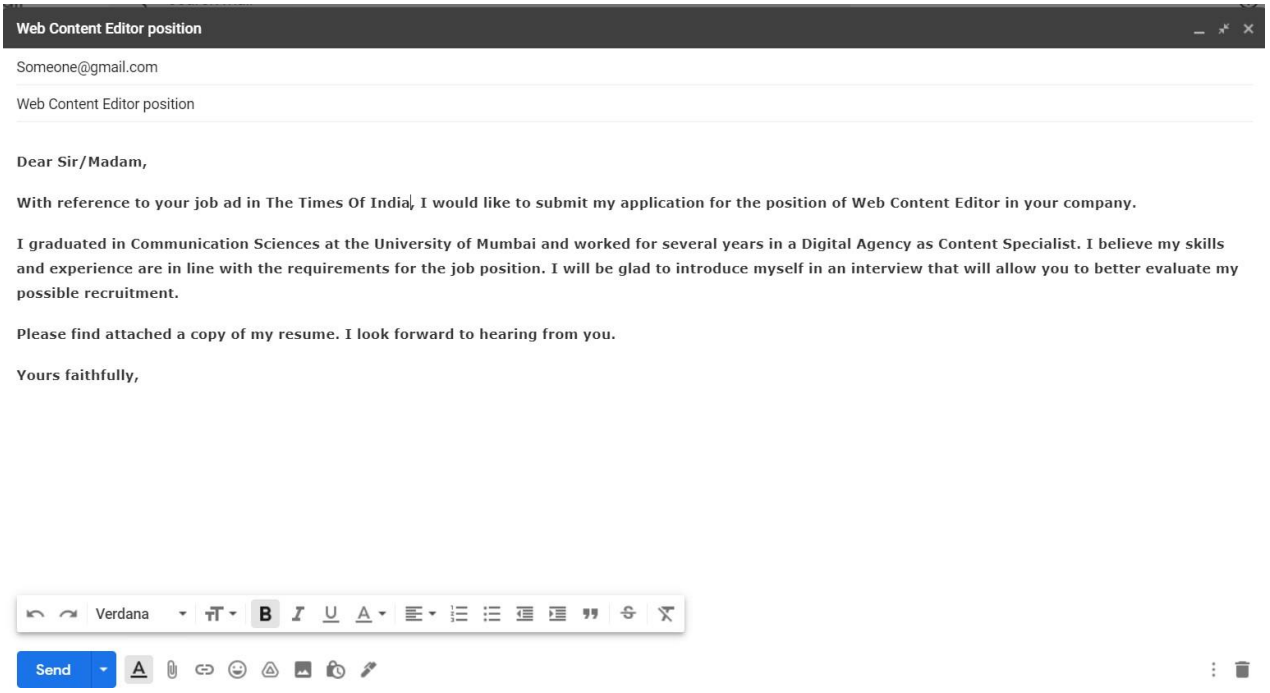
Examples: Prime examples of open-source products are the Apache HTTP Server, the e- commerce platform osCommerce, internet browsers Mozilla Firefox and Chromium (the project where the vast majority of development of the freeware Google Chrome is done) and the full office suite LibreOffice.

Free software tends to mean that the License permits, at any rate, the accompanying utilize the product for any reason.

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 Send mail transport agent.

Writing an Email.

Writing an Email for the position of a web content editor in response to an advertisement in the newspaper.



Using practical examples, describe green computing.

Green Computing and its advantages:

Green computing is very much related to other similar movements like reducing the use of environmentally hazardous materials like CFCs, promoting the use of recyclable materials, minimizing use of non-biodegradable components, and encouraging use of sustainable resources.

- Green Computing can save energy
- Waste reduction
- Less pollution
- Sustainable IT practice
- Reduction of health risks for customers

Practical Examples.

1. Buy "Energy Star" labelled monitors, desktops, laptops, and printers. The "Energy Star" devices can be programmed to "power-down" to a low power state when they are not in use, helping you save energy and run cooler which helps them last even longer.

2. Put laptops in "sleep" mode when not in use. The EPA has estimated that this reduces their energy use by 60 to 70 percent – and ultimately could save enough electricity to power a city.

3. Even better, turn OFF computers and other equipment when not in use. Despite the debate over whether it's better for your computer to be left on or shut off, the fact is it's better for the environment to shut it off.

4. E-cycle used computer equipment. Find a recycler in your area. Smaller items like keyboards, mice and speakers are free to drop off.

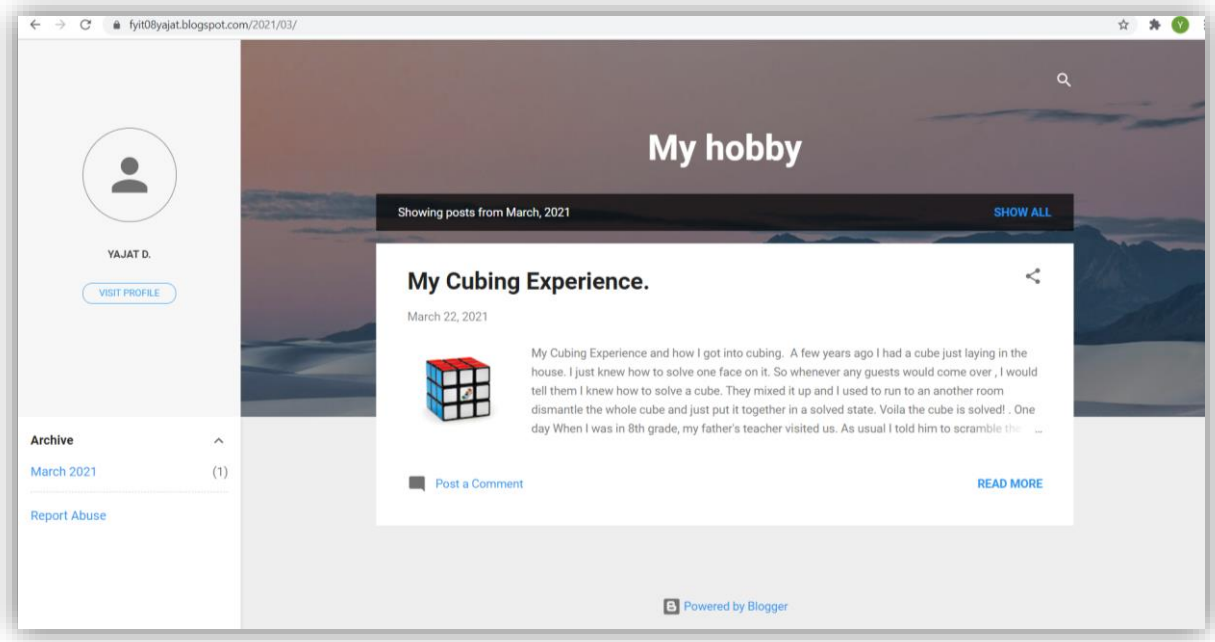
5. Buy the new "Smart Strip" power strip. The Smart Strip actually senses how much power your computer peripherals use. And when the Smart Strip senses that you've turned your computer off, it automatically shuts off your peripherals, too, preventing them from drawing an idle current, which is the current drawn even after equipment is shut off.

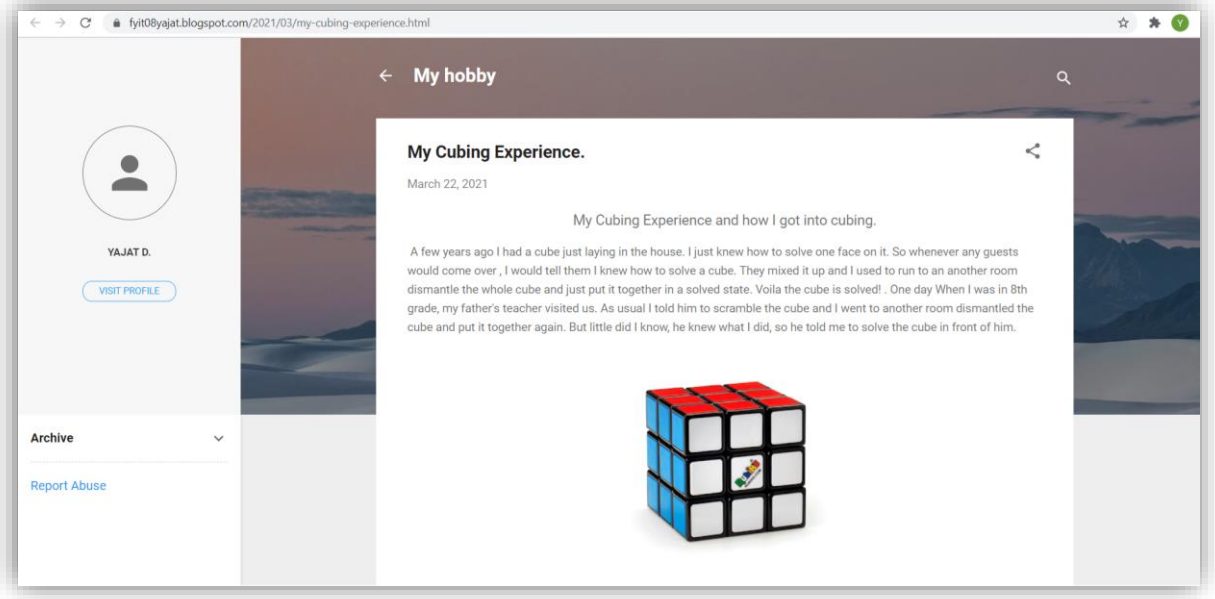
List and explain the steps that you take to contribute to green computing

1) Data Centers :
Data center is a warehouse for the storage, management and circulation of data where electrical and computer systems are designed for more energy efficiency and less environmental impact.
2) Green Networking:
Green Networking refers to selecting of energy-efficient networking technologies and optimizes resource usage. It reduces energy, conserves bandwidth and indirectly reduces cost.
3) Virtualization:
Virtualization is defined as hardware reducing, energy and cost saving technology that rapidly transforms the IT landscape. It allows multiple operating systems and multiple applications to execute/ run on a single computer.

4) Cloud Computing:
Cloud Computing refers to delivery of hosted services over Internet. Cloud computing when included in Green Computing addresses two major challenges – energy usage and resource consumption.

Writing Blogs





Implementing Coding Practices in python using pep 8

1. What is PEP 8?

   PEP 8, sometimes spelled PEP8 or PEP-8, is a document that provides guidelines and best practices on how to write Python code. The primary focus of PEP 8 is to improve the readability and consistency of Python code. PEP stands for Python Enhancement Proposal, and there are several of them.

2. Need for PEP 8.

   PEP 8 adds a logical meaning to your code by making sure your variables are named well, sufficient whitespaces are there or not and also by commenting well. If you're a beginner to the language, PEP 8 would make your coding experience more pleasant.

   Following PEP 8 would also make your task easier if you're working as a professional developer. People who are unknown to you and have never seen how you style your code will be able to easily read and understand your code

3. Features of PEP 8.

Features

- Plugin architecture: Adding new checks is easy.
- Parseable output: Jump to error location in your editor.
- Small: Just one Python file, requires only stdlib. You can use just the pep8.py file for this purpose.
- Comes with a comprehensive test suite.

4. Rules followed while Using PEP 8

- Indentation
- Spaces
- Maximum Line Length
- Line Break Before and After an Operator is permissible
- Blank Lines
- Source File Encoding
- Imports
- Module Level Dunder Names

Sample Example:
Code written using PEP 8:

style_script.py

```
1  def list_sum(my_list):
2      # First method
3      sum = 0
4      for i in my_list:
5          sum += i
6      return sum
7
8
9  my_list = [1, 2, 3, 4]
10 output = list_sum(my_list)
11 if output >= 10:
12     print("You have reached the threshold.")
13
```

GREEN DATA STORAGE

INTRODUCTION

What is green data storage?

- Green storage is the practice of using a variety of "clean energy" storage methods and products to cut down on a data centre's Carbon Footprint as well as the cost.

A green data center is an enterprise classcomputing facility that is entirely managed and operated on the principles of green computing. It comes with the same features and capabilities of a typical data center but uses less energy and space, and also its design and operation are environment friendly

What exactly is Carbon Footprint ?

- A carbon footprint is the amount of greenhouse gases—primarily carbon dioxide—released into the atmosphere by a particular human activity.

It is usually measured as tons of CO_2 emitted per year, a number that can be supplemented by tons of CO_2-equivalent gases, including methane, nitrous oxide, and other greenhouse gases.

So, what is the relation between storing data and **Carbon footprint**?

- Producing electricity consumed by data centers will result in the release of 100 million metric tons of carbon dioxide (CO_2) by 2020.
In 2018, Google estimated that one month of a typical individual's emailing and searching adds up to about the same greenhouse gas emissions as driving a car 1.6 km.

Fun Fact:
Every Google search comes at a cost to the planet. In processing 3.5 billion searches a day, the world's most popular website accounts for about 40% of the internet's carbon footprint.

ADVANTAGES

Reduced Impact on Environment

- The green or sustainable data centers reduce the energy consumption and exert less impact on environment as compared to the traditional ones.

Decreased Capital Expenditure

- Green or environment-friendly data centers use the minimum amount of power thanks to continuous monitoring and effective data management services.

Effectiveness

- The green data center can offer up to 60% savings in hardware cost and a 32% increase in PUE (Power Usage Effectiveness).

Turning Off Unused Servers

- The green data centers can turn these servers off and reduces the energy consumption and cost.

IMPORTANCE

- Green storage protect the environment like mentioned above
- The service utilizes environmentally friendly solar panels meeting optimal energy efficient standard.
- Green units use smart technologies to keep your items safe and dry no matter what season it is because of that system

- They usually incorporate a self sustainable power system that save money so other benefits.they usually incorporate a self sustainable power system that save money so other benefits.

- A number of technologies had been recognised as effective ways to adapt energy

- The use of cloud storage improve capacity system better performance oriented technology

PROBLEM SOLVED BY G.D.S

- Reduced cooling requirements

There are a number of factors for improving power and cooling efficiency by reducing the heat generated in the data center with water or refrig-errant heat exchangers

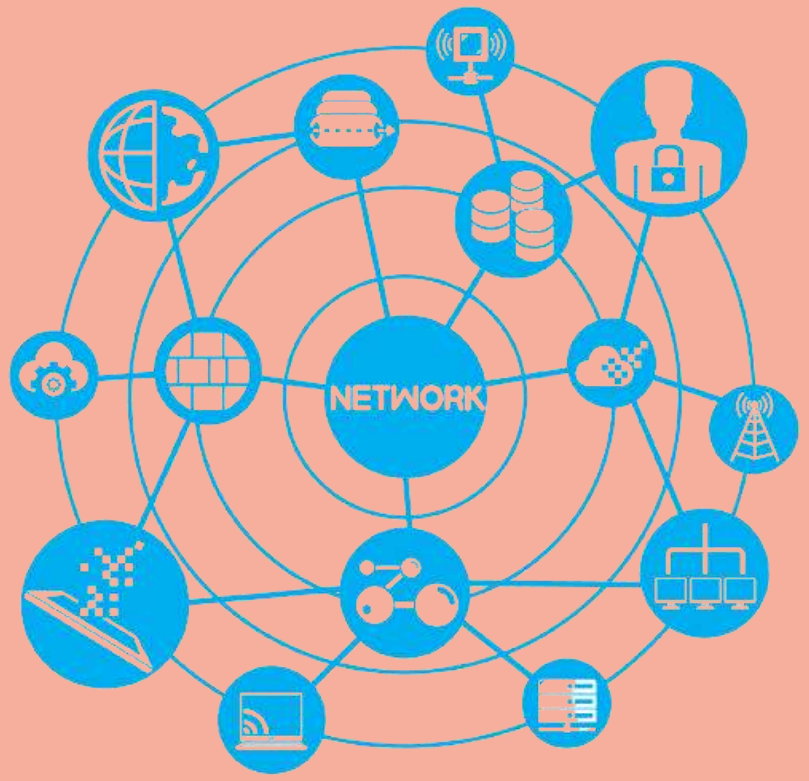
- Increasing facilities system efficiency

Replacing chiller or UPS systems that have been in service for 15 years or more can result in substantial savings.

- Reduced power consumption with innovative technologies

replacing older IT equipment with newer models can significantly reduce

overall power and cooling requirements reduced by 25 to 40 percent over older(1U) technologies.



- Virtualization

This eliminates the approach
of dedicating a single workload to a single server—a practice that yields low
utilization rates—and allows virtualized servers to function near maximum

- Power management in IT systems

Ideally, power usage in a data center should be proportional to the workload.
The amount of
power used by a single server or groups of servers can be capped

TECHNOLOGY

- Data centers throughout Europe are leading the charge in efficient energy practices and renewable energy.

- When you think of spring, you think of good weather and the color green. But today, the color green has taken on a brand-new significance as the symbol of the booming green energy movement. That has become a vital component of Europe's economy.

- Data centers throughout Europe are leading the charge in both efficient energy practices and the use of renewable energy, showing that being green is a crucial way to win customers in Europe.

- Demonstrating green practices can be a notable business differentiator for service providers looking to sell services to the European market.

- Europeans care strongly about sustainability: slightly more than eight in ten EU citizens felt that environmental impact was an important element when deciding which products to buy.

- So, data centers have been implementing energy-saving designs and harnessing everything from arctic winds to underground aquifers to the Baltic Sea to reduce energy use and thus reduce their carbon footprint.

- .So, for US companies trying to take advantage of the European market, colocating in data centers committed to both using green technology and innovating new efficiency measures is a way to distinguish themselves from their competitors.

CONCLUSION

- Green storage is the practice of using a variety of "clean energy" storage methods and products to cut down on a data centre's Carbon Footprint as well as the cost.

- A carbon footprint is the amount of greenhouse gases—primarily carbon dioxidereleased into the atmosphere by a particular human activity.

- Green storage protect the environment like mentioned above

- Increasing facilities system efficiency, Reduced power consumption with innovative technologies

BSCIT

- YAJAT DALVI – 08
- DEEPAK YADAV – 105
- GAURAV THAKUR – 94
- BHAVIN NOR – 54
- SAEED SHAIKH – 131
- RAJ NAIK - 56

THANKYOU!