

1. Write code for a simple user registration form for an event.

Step 1:

- ✓ Install Python from <http://python.org>
- ✓ Open powershell in windows
- ✓ Install Flask and MySQL with following commands
 - pip install flask
 - pip install flask-mysqldb

Step 2:

- ✓ Install xampp in windows
- ✓ Run xampp control panel then run apache and mysql
- ✓ Create database "mydb" in <http://localhost/phpmyadmin>
- ✓ Create a table

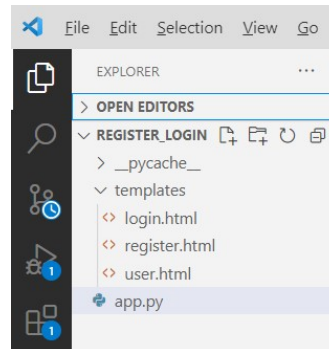
```
CREATE TABLE `user` (  
    `userid` int(11) NOT NULL,  
    `name` varchar(100) NOT NULL,  
    `email` varchar(100) NOT NULL,  
    `password` varchar(255) NOT NULL  
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;  
  
ALTER TABLE `user`  
  
    ADD PRIMARY KEY (`userid`);
```

Step 3:

- ✓ Create a project (in powershell)
 - >md Register_Login
- ✓ Change to Project
 - >cd Register_Login
- ✓ Code . (it opens VS Code)

Step 4:

- ✓ Create app.py and write below code in the file
- ✓ Create templates folder under project
- ✓ Create register.html, login.html and user.html
- ✓ Write below code in respective files
- ✓ Project Structure:



app.py

```
from flask import Flask, render_template, request, redirect, url_for, session
```

```
from flask_mysqlldb import MySQL
```

```
import MySQLdb.cursors
```

```
import re
```

```
app = Flask(__name__)
```

```
app.secret_key = 'xyzsdfg'
```

```
app.config['MYSQL_HOST'] = 'localhost'
```

```
app.config['MYSQL_USER'] = 'root'
```

```
app.config['MYSQL_PASSWORD'] = ''
```

```
app.config['MYSQL_DB'] = 'mydb'
```

```
mysql = MySQL(app)
```

```
@app.route('/')
```

```
@app.route('/login', methods =['GET', 'POST'])

def login():

    mesage = "

    if request.method == 'POST' and 'email' in request.form and 'password' in
request.form:

        email = request.form['email']

        password = request.form['password']

        cursor = mysql.connection.cursor(MySQLdb.cursors.DictCursor)

        cursor.execute('SELECT * FROM user WHERE email = % s AND password = % s',
(email, password, ))

        user = cursor.fetchone()

        if user:

            session['loggedin'] = True

            session['userid'] = user['userid']

            session['name'] = user['name']

            session['email'] = user['email']

            mesage = 'Logged in successfully !'

            return render_template('user.html', mesage = mesage)

        else:

            mesage = 'Please enter correct email / password !'

            return render_template('login.html', mesage = mesage)

@app.route('/logout')

def logout():
```

```
session.pop('loggedin', None)

session.pop('userid', None)

session.pop('email', None)

return redirect(url_for('login'))

@app.route('/register', methods =['GET', 'POST'])

def register():

    message = ""

    if request.method == 'POST' and 'name' in request.form and 'password' in
request.form and 'email' in request.form :

        userName = request.form['name']

        password = request.form['password']

        email = request.form['email']

        cursor = mysql.connection.cursor(MySQLdb.cursors.DictCursor)

        cursor.execute('SELECT * FROM user WHERE email = % s', (email, ))

        account = cursor.fetchone()

        if account:

            message = 'Account already exists !'

        elif not re.match(r'^@]+@^[^@]+\.[^@]+', email):

            message = 'Invalid email address !'

        elif not userName or not password or not email:

            message = 'Please fill out the form !'

        else:
```

```
        cursor.execute('INSERT INTO user VALUES (NULL, % s, % s, % s)', (userName,  
email, password, ))
```

```
        mysql.connection.commit()
```

```
        mesage = 'You have successfully registered !'
```

```
    elif request.method == 'POST':
```

```
        mesage = 'Please fill out the form !'
```

```
    return render_template('register.html', mesage = mesage)
```

```
if __name__ == "__main__":
```

```
    app.run()
```

login.html:

```
<html>

<head>

<meta charset="utf-8">

<meta name="viewport" content="width=device-width, initial-scale=1">

<title>User Login Form</title>

<link rel="stylesheet"
href="https://cdn.jsdelivr.net/npm/bootstrap@4.6.1/dist/css/bootstrap.min.css">

</head>

<body>

<div class="container">

    <h2>User Login</h2>

    <form action="{{ url_for('login') }}" method="post">

        {% if message is defined and message %}

            <div class="alert alert-warning">{{ message }}</div>

        {% endif %}

        <div class="form-group">

            <label for="email">Email:</label>

            <input type="email" class="form-control" id="email"
name="email" placeholder="Enter email" name="email">

        </div>

        <div class="form-group">

            <label for="pwd">Password:</label>
```

```
        <input type="password" class="form-control" id="password"
name="password" placeholder="Enter password" name="pswd">
```

```
    </div>
```

```
    <button type="submit" class="btn btn-primary">Login</button>
```

```
    <p class="bottom">Dont't have an account? <a class="bottom"
href="{{url_for('register')}}"> Register here</a></p>
```

```
    </form>
```

```
</div>
```

```
</body>
```

```
</html>
```

register.html:

```
<html>

<head>

<meta charset="utf-8">

<meta name="viewport" content="width=device-width, initial-scale=1">

<title>User Registration Form</title>

<link rel="stylesheet"
href="https://cdn.jsdelivr.net/npm/bootstrap@4.6.1/dist/css/bootstrap.min.css">

</head>

<body>

<div class="container">

    <h2>User Registration</h2>

    <form action="{{ url_for('register') }}" method="post">

        {% if message is defined and message %}

            <div class="alert alert-warning">{{ message }}</div>

        {% endif %}

        <div class="form-group">

            <label for="name">Name:</label>

            <input type="text" class="form-control" id="name" name="name"
placeholder="Enter name" name="name">

        </div>

        <div class="form-group">

            <label for="email">Email:</label>
```



```
        <input type="email" class="form-control" id="email"
name="email" placeholder="Enter email" name="email">
```

```
    </div>
```

```
    <div class="form-group">
```

```
        <label for="pwd">Password:</label>
```

```
        <input type="password" class="form-control" id="password"
name="password" placeholder="Enter password" name="pswd">
```

```
    </div>
```

```
    <button type="submit" class="btn btn-primary">Register</button>
```

```
    <p class="bottom">Already have an account? <a class="bottom"
href="{{url_for('login')}}"> Login here</a> </p>
```

```
    </form>
```

```
</div>
```

```
</body>
```

```
</html>
```

user.html:

```
<html>

<head>

<meta charset="utf-8">

<meta name="viewport" content="width=device-width, initial-scale=1">

<title>User Account</title>

<link rel="stylesheet"
href="https://cdn.jsdelivr.net/npm/bootstrap@4.6.1/dist/css/bootstrap.min.css">

</head>

<body>

<div class="container">

    <div class="row">

        <h1>User Profile</h1>

    </div>

    <br>

    <div class="row">

        Logged in : <strong>{{session.name}} | <a href="{{ url_for('logout') }}">
Logout</a>

    </div>

    <br> <br>

    <div class="row">

        <h2>Welcome to the user profile page...</h2>
```

</div>

</div>

</body>

</html>

Step5:

- ✓ Select app.py then run it.
- ✓ Open <http://127.0.0.1:5000/> in browser

Output:



The screenshot shows a web browser window with the title "User Login Form". The address bar displays "127.0.0.1:5000". The page content includes a heading "User Login", followed by an "Email:" label and a text input field with the placeholder "Enter email". Below this is a "Password:" label and a text input field with the placeholder "Enter password". A blue "Login" button is positioned below the password field. At the bottom, there is a link that says "Don't have an account? [Register here](#)".

User Registration Form

127.0.0.1:5000/register

User Registration

Name:

Email:

Password:

[Register](#)

Already have an account? [Login here](#)

User Registration Form

127.0.0.1:5000/register

User Registration

You have successfully registered !

Name:

Email:

Password:

[Register](#)

Already have an account? [Login here](#)

User Login Form

127.0.0.1:5000/login

User Login

Email:

Password:

Login

Don't have an account? [Register here](#)

User Account

127.0.0.1:5000/login

User Profile

Logged in: **SRITW** | [Logout](#)

Welcome to the user profile page...

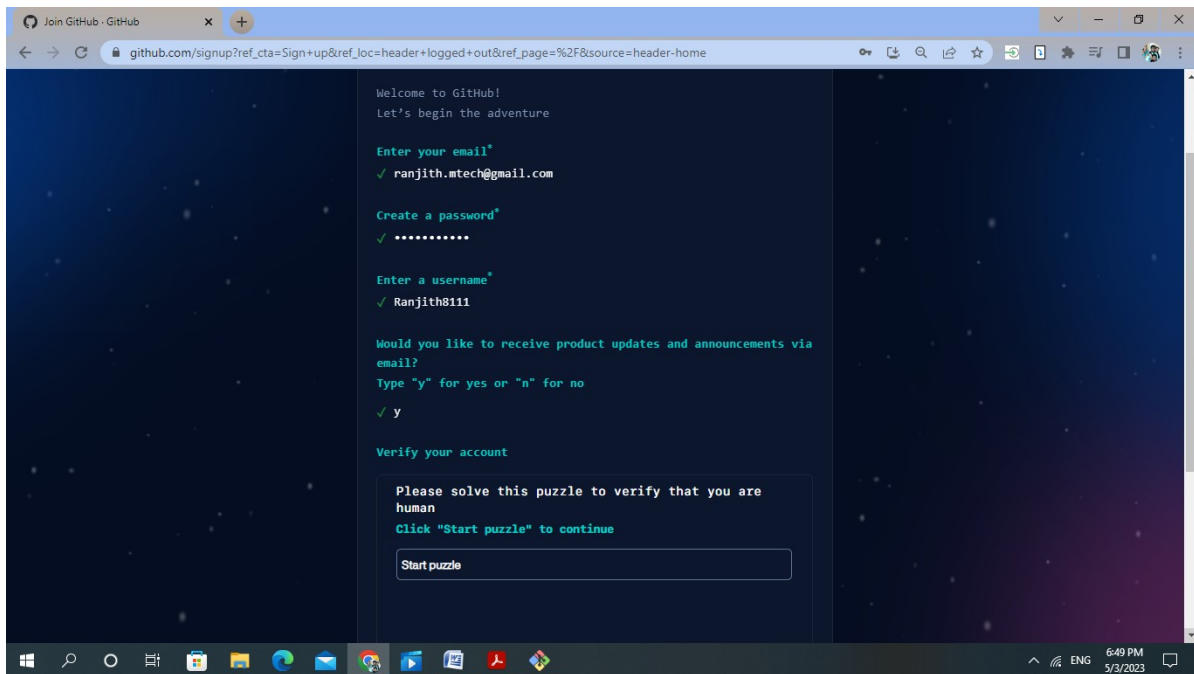
2. Explore Git and GitHub commands.

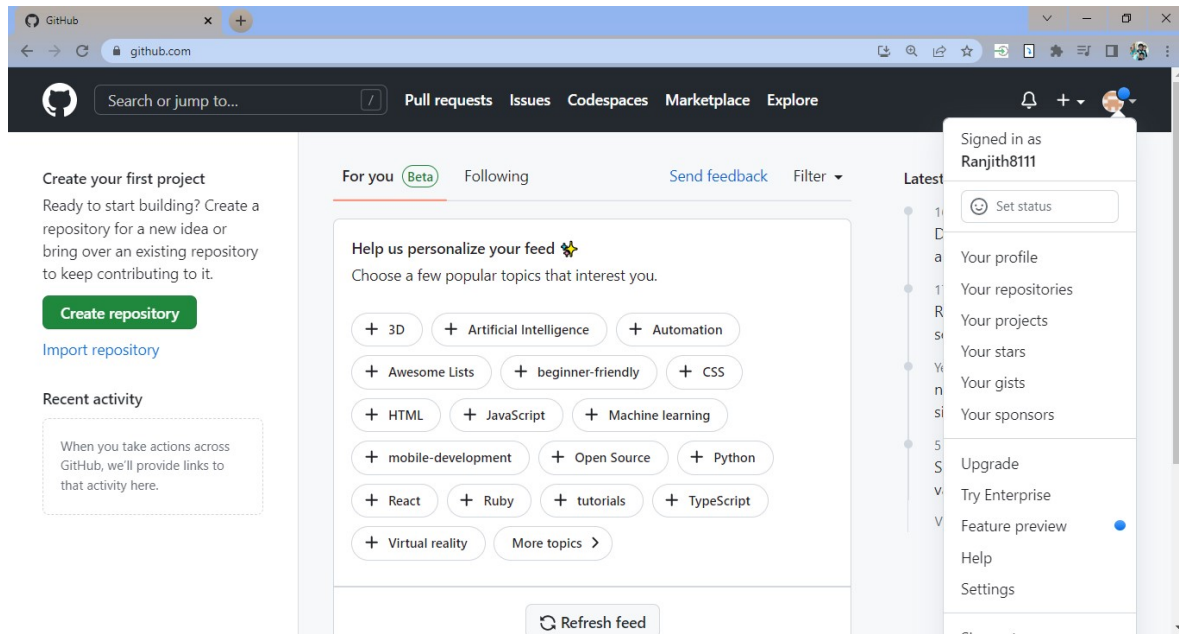
Step 1:

- ✓ Download gitbash from <https://git-scm.com/>
- ✓ Install gitbash

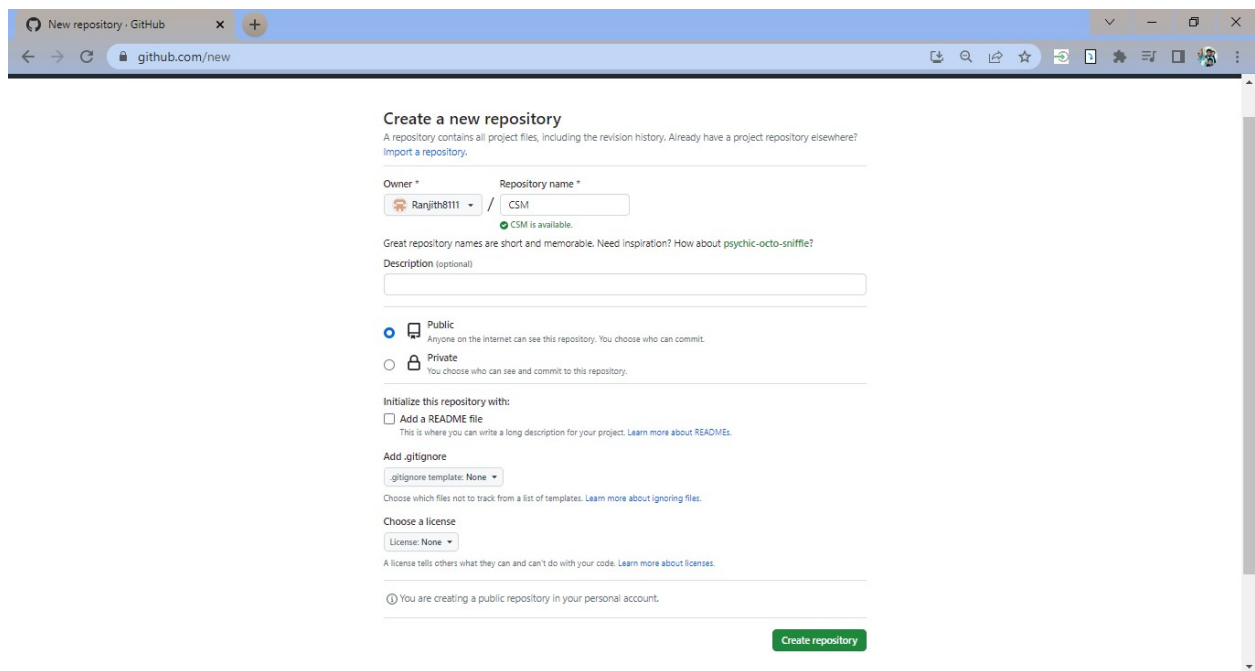
Step 2:

- ✓ Create an account with <https://github.com/>





✓ Create a repository



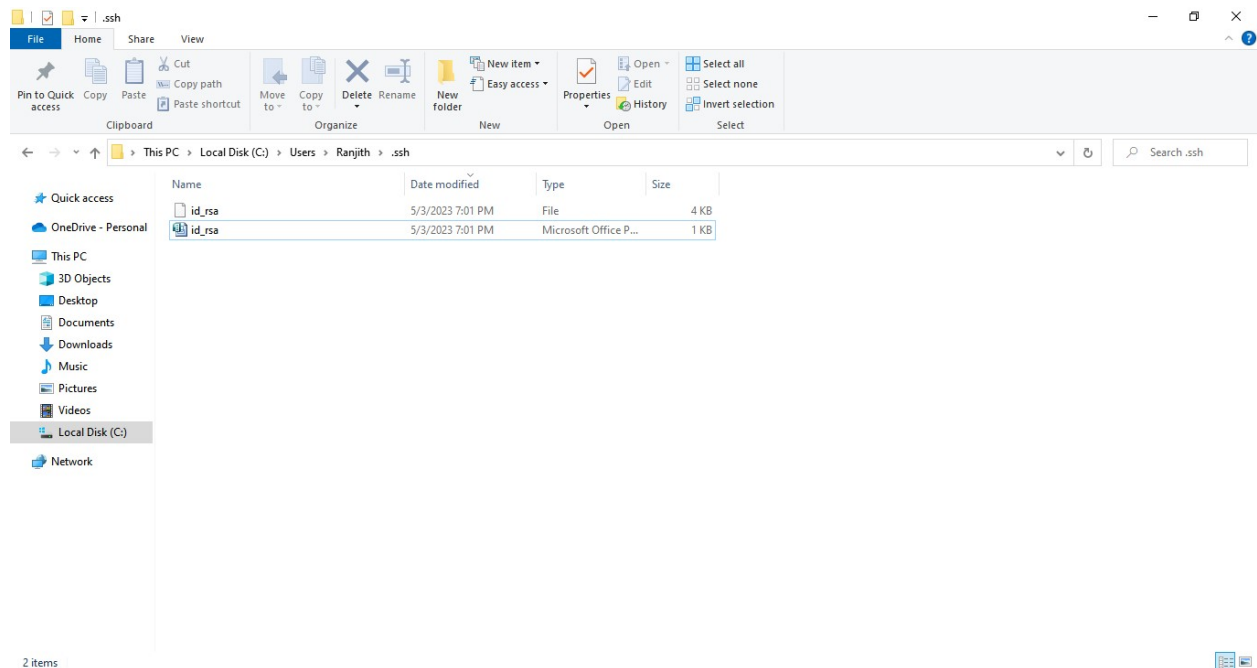
✓ Create SSH key in gitbash

```
MINGW64/c/Users/Ranjith

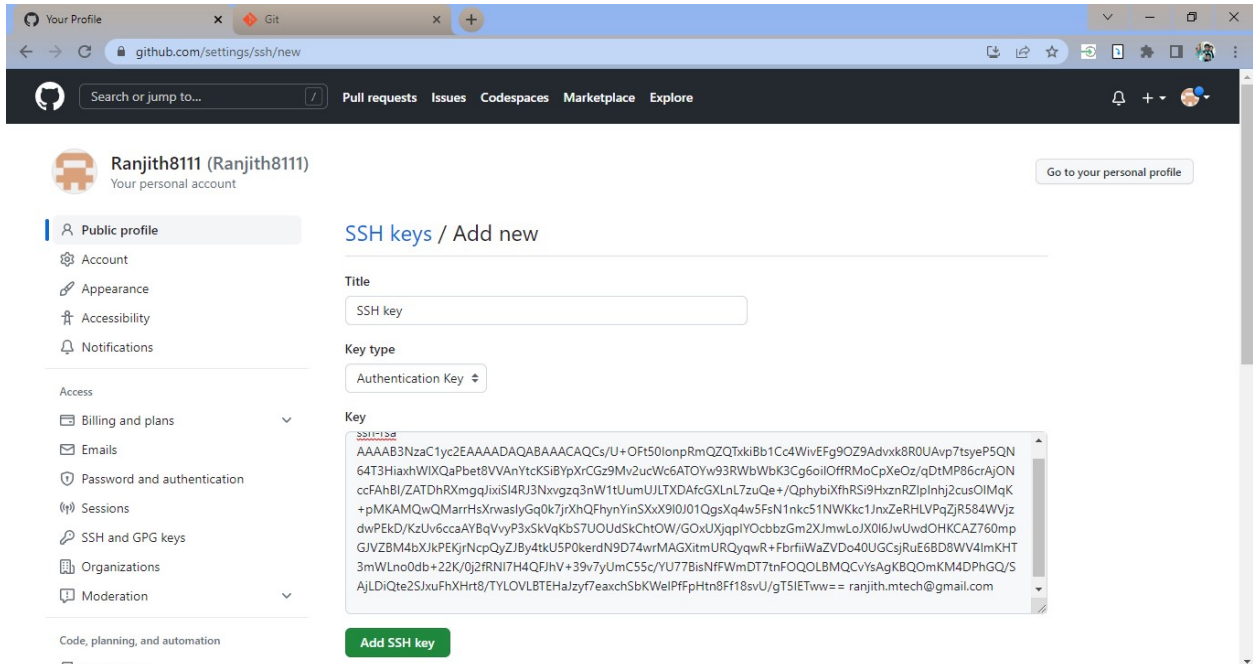
Ranjith@DESKTOP-3AL783Q MINGW64 ~ (main)
$ ssh-keygen -t rsa -b 4096 -c "ranjith.mtech@gmail.com"
Generating public/private rsa key pair.
Enter file in which to save the key (/c/Users/Ranjith/.ssh/id_rsa):
Created directory '/c/Users/Ranjith/.ssh'.
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /c/Users/Ranjith/.ssh/id_rsa
Your public key has been saved in /c/Users/Ranjith/.ssh/id_rsa.pub
The key fingerprint is:
SHA256:BYx0h3UN+zff6kPaEzYe03EbbwChno/1V0f1R8z/yXU ranjith.mtech@gmail.com
The key's randomart image is:
+---[RSA 4096]-----+
|  ..oooo oo.+o |
|  ..oo . o+. = |
|   oo o*       |
|   . o++E      |
|    S  o.+*&   |
|      +**O     |
|     .+.O=     |
|     . o..     |
|     . o.      |
+---[SHA256]-----+

Ranjith@DESKTOP-3AL783Q MINGW64 ~ (main)
$
```

✓ Open and copy content of **id_rsa** from **.ssh** folder in user folder



- ✓ Paste the content in key field in SSH keys/ Add new



Step 3:

- ✓ Do following git commands in gitbash

```
MINGW64/c/Users/Ranjith/demo
$ git -v
git version 2.40.1.windows.1

Ranjith@DESKTOP-3AL783Q MINGW64 ~ (main)
$ mkdir demo

Ranjith@DESKTOP-3AL783Q MINGW64 ~ (main)
$ cd demo

Ranjith@DESKTOP-3AL783Q MINGW64 ~/demo (main)
$ git init
Initialized empty git repository in c:/Users/Ranjith/demo/.git/

Ranjith@DESKTOP-3AL783Q MINGW64 ~/demo (master)
$ touch First.txt

Ranjith@DESKTOP-3AL783Q MINGW64 ~/demo (master)
$ git status
On branch master

No commits yet

Untracked files:
  (use "git add <file>..." to include in what will be committed)
    First.txt

nothing added to commit but untracked files present (use "git add" to track)

Ranjith@DESKTOP-3AL783Q MINGW64 ~/demo (master)
$
```

MINGW64/c/Users/Ranjith/demo

```
Ranjith@DESKTOP-3AL783Q MINGW64 ~/demo (master)
$ git add First.txt
```

```
Ranjith@DESKTOP-3AL783Q MINGW64 ~/demo (master)
$ git status
On branch master
```

No commits yet

```
Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
    new file:   First.txt
```

```
Ranjith@DESKTOP-3AL783Q MINGW64 ~/demo (master)
$ git log
fatal: your current branch 'master' does not have any commits yet
```

```
Ranjith@DESKTOP-3AL783Q MINGW64 ~/demo (master)
$
```

MINGW64/c/Users/Ranjith/demo

```
Ranjith@DESKTOP-3AL783Q MINGW64 ~/demo (master)
$ git commit -m "This is First File from Local Repository"
[master (root-commit) 0cd2345] This is First File from Local Repository
 1 file changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 First.txt
```

```
Ranjith@DESKTOP-3AL783Q MINGW64 ~/demo (master)
$ git log
commit 0cd23455230d8f9350dec3c0ee065df8c53c0790 (HEAD -> master)
Author: M Ranjith Kumar <m_ranjithkumar@sritw.org>
Date:   Wed May 3 19:11:39 2023 +0530
```

This is First File from Local Repository

```
Ranjith@DESKTOP-3AL783Q MINGW64 ~/demo (master)
$ git status
On branch master
nothing to commit, working tree clean
```

```
Ranjith@DESKTOP-3AL783Q MINGW64 ~/demo (master)
$
```

MINGW64/c/Users/Ranjith/demo

```
Ranjith@DESKTOP-3AL783Q MINGW64 ~/demo (master)
$ git branch branch_1
```

```
Ranjith@DESKTOP-3AL783Q MINGW64 ~/demo (master)
$ git status
On branch master
Untracked files:
  (use "git add <file>..." to include in what will be committed)
    CSM/
```

nothing added to commit but untracked files present (use "git add" to track)

```
Ranjith@DESKTOP-3AL783Q MINGW64 ~/demo (master)
$ git log
commit 0cd23455230d8f9350dec3c0ee065df8c53c0790 (HEAD -> master, branch_1)
Author: M Ranjith Kumar <m_ranjithkumar@sritw.org>
Date:   Wed May 3 19:11:39 2023 +0530
```

This is First File from Local Repository

```
Ranjith@DESKTOP-3AL783Q MINGW64 ~/demo (master)
$ git checkout branch_1
Switched to branch 'branch_1'
```

```
Ranjith@DESKTOP-3AL783Q MINGW64 ~/demo (branch_1)
$ git log --oneline
0cd2345 (HEAD -> branch_1, master) This is First File from Local Repository
```

```
Ranjith@DESKTOP-3AL783Q MINGW64 ~/demo (branch_1)
$
```

MINGW64/c/Users/Ranjith/demo

```
Ranjith@DESKTOP-3AL783Q MINGW64 ~/demo (branch_1)
$ git checkout master
Switched to branch 'master'
```

```
Ranjith@DESKTOP-3AL783Q MINGW64 ~/demo (master)
$ git remote add origin git@github.com:Ranjith8111/CSM.git
```


```
Ranjith@DESKTOP-3AL783Q MINGW64 ~/demo (master)
$ git push -u origin master
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Writing objects: 100% (3/3), 243 bytes | 243.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
To github.com:Ranjith8111/CSM.git
 * [new branch]      master -> master
branch 'master' set up to track 'origin/master'.
```

```
Ranjith@DESKTOP-3AL783Q MINGW64 ~/demo (master)
$
```

Ranjith8111/CSM



Git

github.com/Ranjith8111/CSM



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master 1 branch 0 tags

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 mrkranjith This is First File from Local Repository 0cd2345 13 minutes ago 1 commit

 First.txt

This is First File from Local Repository

13 minutes ago

Help people interested in this repository understand your project by adding a README.

[Add a README](#)

About

No description, website, or topics provided.

0 stars

1 watching

0 forks

Releases

No releases published

[Create a new release](#)

https://github.com/Ranjith8111/CSM

3. Practice Source code management on GitHub. Experiment with the source code written in exercise 1.

Do the following git commands

```
MINGW64/c/Users/Ranjith/demo
Ranjith@DESKTOP-3AL783Q MINGW64 ~/demo (master)
$ cp -r ../Desktop/M.Ranjith_Kumar/DevOps/Lab/Exp1 .

Ranjith@DESKTOP-3AL783Q MINGW64 ~/demo (master)
$ ls
CSM/  Exp1/  First.txt

Ranjith@DESKTOP-3AL783Q MINGW64 ~/demo (master)
$ git status
On branch master
Your branch is up to date with 'origin/master'.

Untracked files:
  (use "git add <file>..." to include in what will be committed)
    CSM/
    Exp1/

nothing added to commit but untracked files present (use "git add" to track)

Ranjith@DESKTOP-3AL783Q MINGW64 ~/demo (master)
$ git add Exp1/

Ranjith@DESKTOP-3AL783Q MINGW64 ~/demo (master)
$ git status
On branch master
Your branch is up to date with 'origin/master'.

Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
    new file:   Exp1/__pycache__/app.cpython-311.pyc
    new file:   Exp1/app.py
    new file:   Exp1/templates/login.html
    new file:   Exp1/templates/register.html
    new file:   Exp1/templates/user.html

Untracked files:
  (use "git add <file>..." to include in what will be committed)
    CSM/

Ranjith@DESKTOP-3AL783Q MINGW64 ~/demo (master)
$
```

```
MINGW64/c/Users/Ranjith/demo
$ git status
On branch master
Your branch is up to date with 'origin/master'.

Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
    new file:   Exp1/__pycache__/app.cpython-311.pyc
    new file:   Exp1/app.py
    new file:   Exp1/templates/login.html
    new file:   Exp1/templates/register.html
    new file:   Exp1/templates/user.html

Untracked files:
  (use "git add <file>..." to include in what will be committed)
    CSM/

Ranjith@DESKTOP-3AL783Q MINGW64 ~/demo (master)
$ git commit -m "This is DevOps Lab Exp1 Program"
[master c8d987e] This is DevOps Lab Exp1 Program
5 files changed, 156 insertions(+)
create mode 100644 Exp1/__pycache__/app.cpython-311.pyc
create mode 100644 Exp1/app.py
create mode 100644 Exp1/templates/login.html
create mode 100644 Exp1/templates/register.html
create mode 100644 Exp1/templates/user.html

Ranjith@DESKTOP-3AL783Q MINGW64 ~/demo (master)
$ git status
On branch master
Your branch is ahead of 'origin/master' by 1 commit.
  (use "git push" to publish your local commits)

Untracked files:
  (use "git add <file>..." to include in what will be committed)
    CSM/

nothing added to commit but untracked files present (use "git add" to track)

Ranjith@DESKTOP-3AL783Q MINGW64 ~/demo (master)
$
```

MINGW64/c/Users/Ranjith/demo

```
Ranjith@DESKTOP-3AL783Q MINGW64 ~/demo (master)
$ git push -u origin master
Enumerating objects: 11, done.
Counting objects: 100% (11/11), done.
Delta compression using up to 4 threads
Compressing objects: 100% (9/9), done.
Writing objects: 100% (10/10), 4.67 KiB | 2.33 MiB/s, done.
Total 10 (delta 1), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (1/1), done.
To github.com:Ranjith8111/CSM.git
   0cd2345..c8d987e  master -> master
branch 'master' set up to track 'origin/master'.

Ranjith@DESKTOP-3AL783Q MINGW64 ~/demo (master)
$
```

The screenshot shows a web browser displaying the GitHub repository page for 'Ranjith8111 / CSM'. The page is public and has 1 branch (master) and 0 tags. The repository description is 'This is DevOps Lab Exp1 Program'. The commit history shows 2 commits: 'Exp1' (1 minute ago) and 'First.txt' (22 minutes ago). The 'About' section states 'No description, website, or topics provided.' and shows 0 stars, 1 watching, and 0 forks. The 'Releases' section shows 'No releases published' and a link to 'Create a new release'. A blue banner at the bottom encourages adding a README.

Ranjith8111 / CSM Public

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master 1 branch 0 tags Go to file Add file <> Code

Ranjith8111 This is DevOps Lab Exp1 Program c8d987e 1 minute ago 2 commits

File	Description	Time
Exp1	This is DevOps Lab Exp1 Program	1 minute ago
First.txt	This is First File from Local Repository	22 minutes ago

Help people interested in this repository understand your project by adding a README. [Add a README](#)

About
No description, website, or topics provided.
0 stars
1 watching
0 forks

Releases
No releases published
[Create a new release](#)

CSM/Exp1 at master · Ranjith811 · Git

github.com/Ranjith811/CSM/tree/master/Exp1

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master CSM / Exp1 / Go to file Add file ...

Ranjith811 This is DevOps Lab Exp1 Program c8d987e 1 minute ago History

..

__pycache__	This is DevOps Lab Exp1 Program	1 minute ago
templates	This is DevOps Lab Exp1 Program	1 minute ago
app.py	This is DevOps Lab Exp1 Program	1 minute ago

Give feedback

CSM/Exp1/templates at master · Ranjith811 · Git

github.com/Ranjith811/CSM/tree/master/Exp1/templates

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Ranjith811 / CSM Public

Pin Unwatch 1 Fork 0 Star 0

Code Issues Pull requests Actions Projects Wiki Security Insights Settings

master CSM / Exp1 / templates / Go to file Add file ...

Ranjith811 This is DevOps Lab Exp1 Program c8d987e 1 minute ago History

..

login.html	This is DevOps Lab Exp1 Program	1 minute ago
register.html	This is DevOps Lab Exp1 Program	1 minute ago
user.html	This is DevOps Lab Exp1 Program	1 minute ago

Give feedback