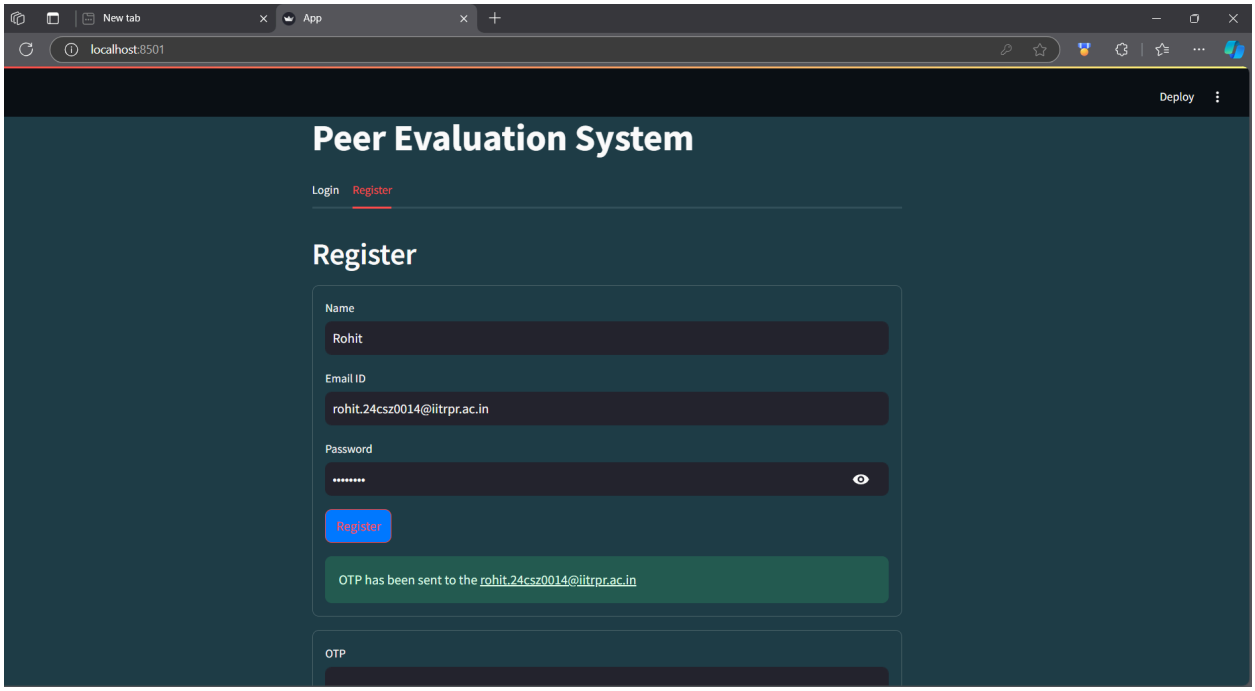
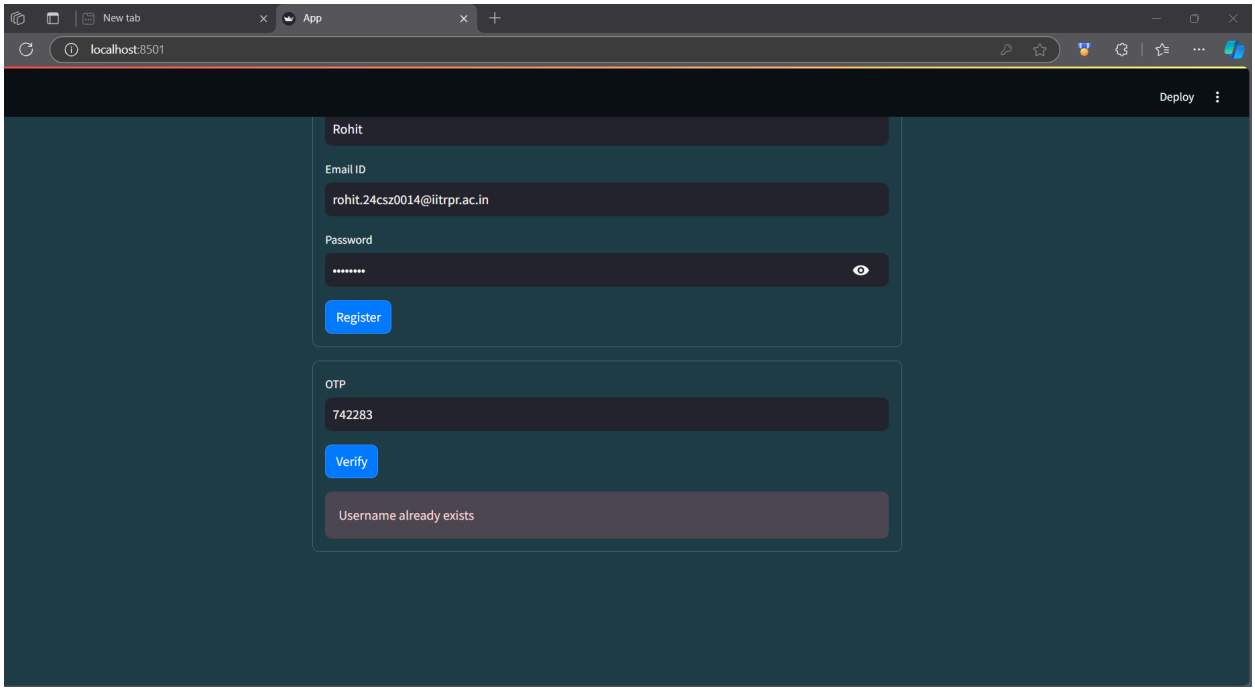
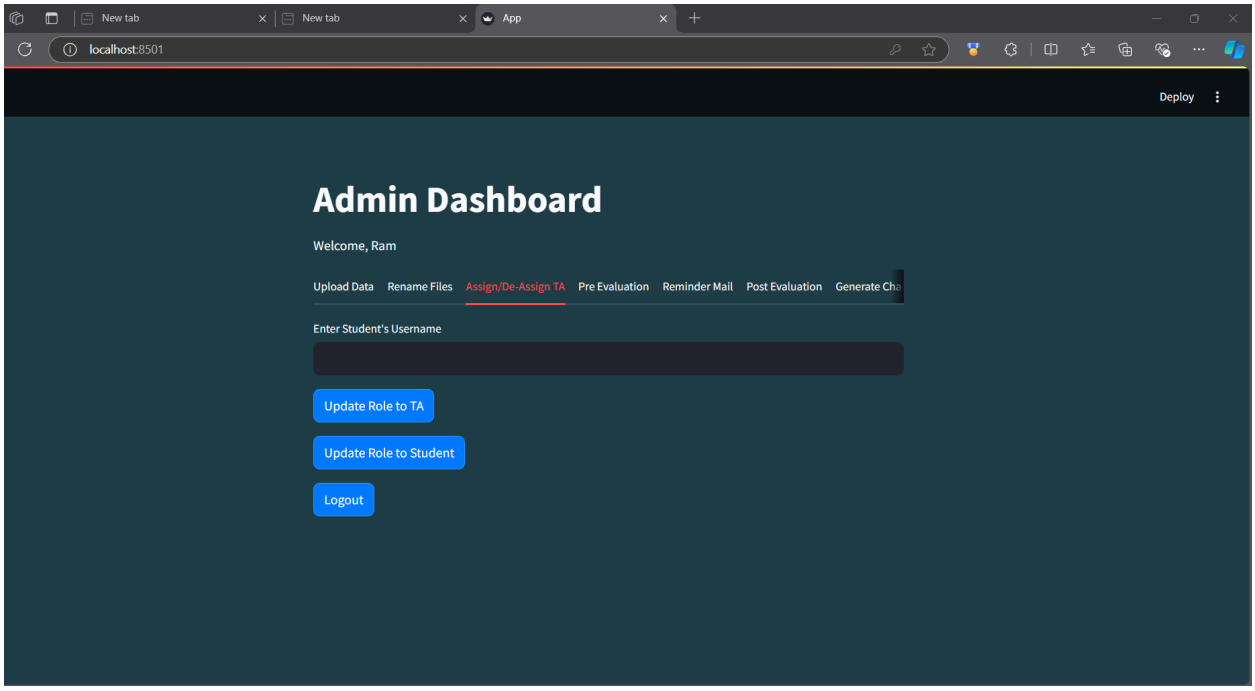
Peer Evaluation System UI/UX

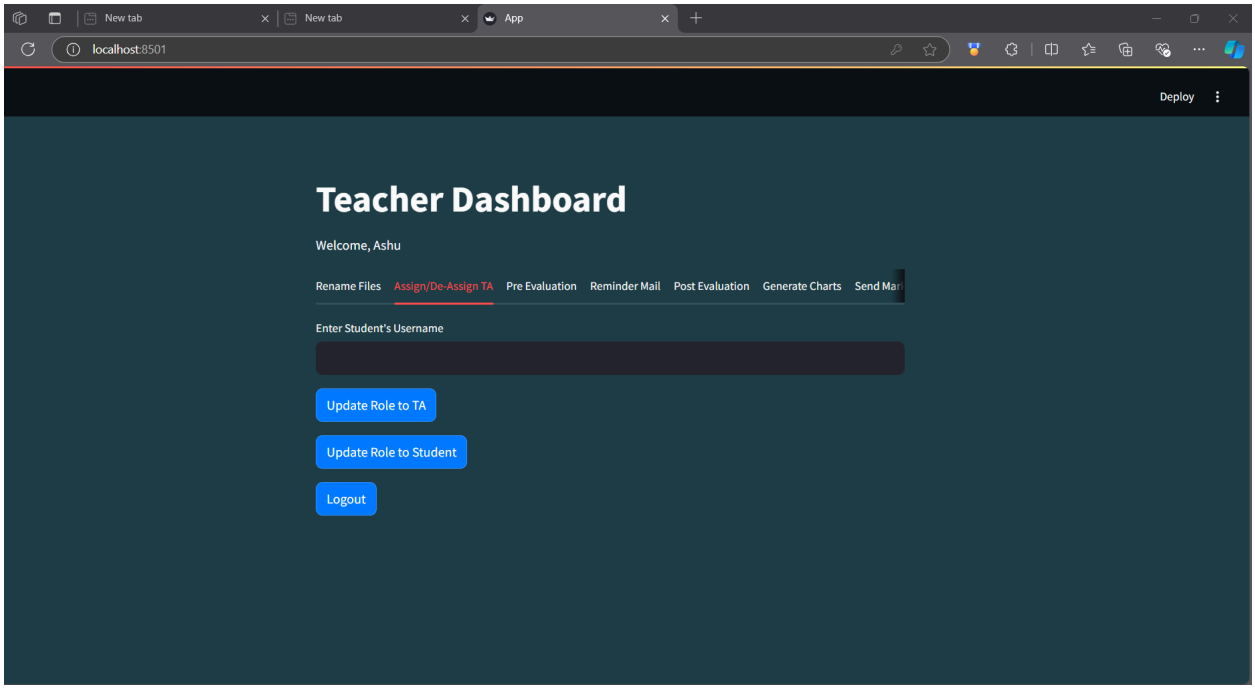
Screenshots of the UI/UX design: -

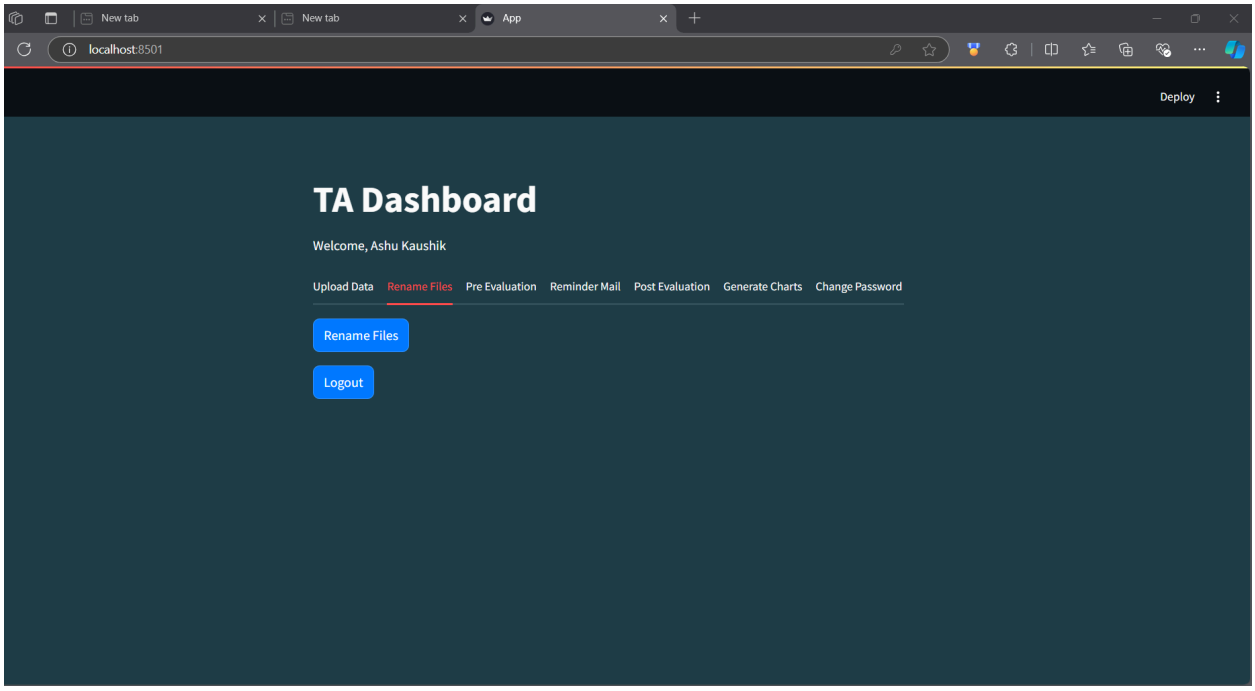
- The changes from the today's code are reflected below: -

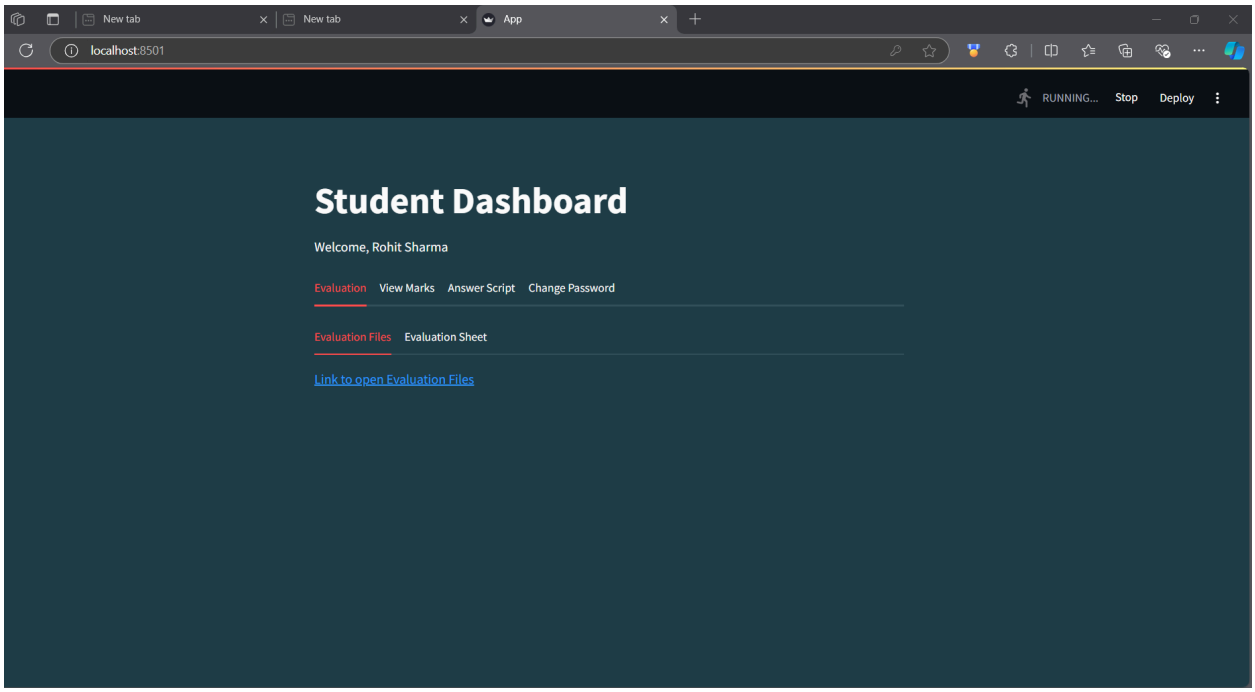





New tab
New tab
App
localhost:8501
Deploy
Admin Dashboard
Welcome, Ram
Upload Data
Rename Files
Assign/De-Assign TA
Pre Evaluation
Reminder Mail
Post Evaluation
Generate Cha
Enter Student's Username
Update Role to TA
Update Role to Student
Logout


New tab
New tab
App
localhost:8501
Deploy
Teacher Dashboard
Welcome, Ashu
Rename Files
Assign/De-Assign TA
Pre Evaluation
Reminder Mail
Post Evaluation
Generate Charts
Send Mar
Enter Student's Username
Update Role to TA
Update Role to Student
Logout


New tab
New tab
App
localhost:8501
Deploy
TA Dashboard
Welcome, Ashu Kaushik
Upload Data
Rename Files
Pre Evaluation
Reminder Mail
Post Evaluation
Generate Charts
Change Password
Rename Files
Logout


New tab
New tab
App
localhost:8501
RUNNING...
Stop
Deploy
Student Dashboard
Welcome, Rohit Sharma
Evaluation
View Marks
Answer Script
Change Password
Evaluation Files
Evaluation Sheet
Link to open Evaluation Files

Python Code: -

1. **App.py -**

```
import io
import re
import random
import smtplib
import time
import json
import bcrypt
import gspread
import requests
import streamlit as st
import plotly.express as px
import pandas as pd
from Rename_File import process_pdfs_in_folder  # process_signatures,
load_stored_signatures
from googleapiclient.discovery import build
from googleapiclient.http import MediaIoBaseUpload
from googleapiclient.http import MediaIoBaseDownload
from oauth2client.service_account import ServiceAccountCredentials
from email.mime.text import MIMEText

# Google Sheets and Google Drive setup
SCOPE = [
  "https://spreadsheets.google.com/feeds",
  "https://www.googleapis.com/auth/drive"
]
CREDENTIALS_FILE = "peer-evaluation-sem1-e2fcf8b5fc27.json"
SHEET_NAME = "UserRoles"


# Initialize connection to Google Sheets
def connect_to_google_sheets():
  creds = ServiceAccountCredentials.from_json_keyfile_name(CREDENTIALS_FILE,
SCOPE)
  client = gspread.authorize(creds)
  sheet = client.open(SHEET_NAME).sheet1
  return sheet
```

```
# Google Drive authentication
def authenticate_drive():
  creds = ServiceAccountCredentials.from_json_keyfile_name(CREDENTIALS_FILE,
SCOPE)
  service = build('drive', 'v3', credentials=creds)
  return service


# Fetch users from Google Sheets
def get_users_from_sheets():
  sheet = connect_to_google_sheets()
  records = sheet.get_all_records()
  return records


# Function to generate a random 6-digit OTP
def generate_otp():
  return str(random.randint(100000, 999999))


# Function to send OTP to email
def send_otp_email(otp, recipient_email, name):
  sender_email = "rohit.24csz0014@iitrpr.ac.in"  # Replace with your email
  sender_password = "azta drev diys dahu"  # Replace with your email password or
app-specific password

  # Create the email content
  message = MIMEText(f"Hello {name},\n\n Your Registration OTP is: {otp}.\n\n
Thanks & Regards,\nCSE, IIT Ropar")
  message["Subject"] = "OTP for Registration"
  message["From"] = sender_email
  message["To"] = recipient_email

  try:
    # Connect to SMTP server and send email
    server = smtplib.SMTP_SSL("smtp.gmail.com", 465)
    server.login(sender_email, sender_password)
    response = server.sendmail(sender_email, recipient_email, message.as_string())
```

```
        server.quit()
        if response:  # If response contains something, it means there was an issue
            print(f"Error: {response}")
            return False
        else:
            print("Email sent successfully!")
            return True  # Email sent successfully
    except smtplib.SMTPRecipientsRefused:
        # Handle case where recipient email is invalid or not found
        print(f"Error: Address not found for recipient: {recipient_email}")
        return -1  # Return -1 if the recipient email is invalid
    except Exception as e:
        print(f"Error sending OTP email: {e}")
        return False


def validate_password(password):
    pattern =
re.compile(r'^(?=.*[A-Z])(?=.*[a-z])(?=.*\d)(?=.*[@$!%*?&])[A-Za-z\d@$!%*?&]{8,}
$')
    return pattern.match(password)


# Add new user to Google Sheets with role auto-assignment
def register_user(username, password, name):
    sheet = connect_to_google_sheets()

    # Check if the email contains numeric values (assumed to be student)
    if re.search(r'\d', username):
        role = "Student"
    else:
        role = "Teacher"

    # Hash the password before saving
    hashed_password = bcrypt.hashpw(password.encode('utf-8'), bcrypt.gensalt())

    new_user = [username, hashed_password.decode('utf-8'), role, name]

    # new_user = [username, password, role, name]
    sheet.append_row(new_user)
```

```
  return role


# Update role from Student to TA (only for Teachers)
def update_role_to_ta(username):
  sheet = connect_to_google_sheets()
  records = sheet.get_all_records()
  for i, user in enumerate(records, start=2):  # start=2 to account for 1-based index in
Google Sheets
    if user['username'] == username and user['role'] == 'Student':
      sheet.update_cell(i, 3, 'TA')  # Assuming role is in column 3
      return True
  return False


# Update role from TA to Student (only for Teachers)
def update_role_to_Student(username):
  sheet = connect_to_google_sheets()
  records = sheet.get_all_records()
  for i, user in enumerate(records, start=2):  # start=2 to account for 1-based index in
Google Sheets
    if user['username'] == username and user['role'] == 'TA':
      sheet.update_cell(i, 3, 'Student')  # Assuming role is in column 3
      return True
  return False


# Verify user credentials
def login(username, password, users):
  for user in users:
    if user['username'] == username:
      # Check if the password matches the stored hash
      if bcrypt.checkpw(password.encode('utf-8'), user['password'].encode('utf-8')):
        st.session_state["login_status"] = True
        st.session_state["role"] = user["role"]
        st.session_state["username"] = username
        st.session_state["page"] = "dashboard"
        st.session_state["message"] = None
        st.session_state["name"] = user["name"]
        return
```

```
            else:
                st.error("Incorrect Password!")
                time.sleep(2)
                st.rerun()
                return
    st.error("Incorrect Username or Password!")
    time.sleep(2)
    st.rerun()


# Logout function
def logout():
    st.session_state["login_status"] = False
    st.session_state["role"] = None
    st.session_state["username"] = None
    st.session_state["name"] = None
    st.session_state["page"] = "login"
    st.success("Logging out!")
    time.sleep(0.5)
    # st.session_state["message"] = "Logged out successfully"


# Function to change password
def change_password(username, current_password, new_password):
    sheet = connect_to_google_sheets()
    records = sheet.get_all_records()

    # Find the user in the records
    for i, user in enumerate(records, start=2):  # start=2 for 1-based indexing (Google
Sheets)
        if user['username'] == username:
            # Check if the current password matches the stored hash
            if bcrypt.checkpw(current_password.encode('utf-8'),
user['password'].encode('utf-8')):
                # Hash the new password
                hashed_new_password = bcrypt.hashpw(new_password.encode('utf-8'),
bcrypt.gensalt()).decode('utf-8')

                # Update the password in the sheet
                sheet.update_cell(i, 2, hashed_new_password)
```

```
            return True  # Password changed successfully
        else:
            return False  # Current password is incorrect
    return False  # User not found


def change_password_dashboard():
    st.header("Change Password")

    current_password = st.text_input("Current Password", type="password")
    new_password = st.text_input("New Password", type="password")
    confirm_password = st.text_input("Confirm New Password", type="password")

    if st.button("Change Password"):
        if new_password != confirm_password:
            st.error("New password and confirm password do not match!")
        elif not validate_password(new_password):
            st.error(
                "Password must include at least: - \n1. One uppercase letter. \n2. One lowercase
letter. \n3. One special character. \n4. One numerical digit. \n5. Must be at least 8
characters long.")
        else:
            success = change_password(st.session_state['username'], current_password,
new_password)
            if success:
                st.success("Password changed successfully!")
                time.sleep(2)
                logout()
                st.rerun()
            else:
                st.error("Failed to change password. Incorrect current password.")


def trigger_google_apps_script(function_name):
    # web_app_url =
"https://script.google.com/macros/s/AKfycbwlBil062YhNYcbIqmP9obfLBKgoeIdTdRD
Q_BOB4rF1S6JhTxvVFH8MhW2x84bgyAVag/exec"
    # web_app_url =
"https://script.google.com/macros/s/AKfycbwyD-ImNeqaa7NzPCU5AZ6978PSRvQuuy
EreskmCnrzoM0P30EGHuR-sIoqklHBHlNlxQ/exec"
```

```
  #web_app_url =
"https://script.google.com/macros/s/AKfycbyyeKLZfm5VihTXPqu5qloIl2CEs8mRU3iJu
epZJ4AvWm3R0w3yWBG8INj9v2-TUeGk3w/exec"
  # web_app_url =
"https://script.google.com/macros/s/AKfycbwBrsqBz4_d-muszL1oclHczAqQtpddtmzRc
ZPtV9NVXZuS0t-18kWYfUT-F3W728A-AA/exec"
  # web_app_url =
"https://script.google.com/macros/s/AKfycbwBrsqBz4_d-muszL1oclHczAqQtpddtmzRc
ZPtV9NVXZuS0t-18kWYfUT-F3W728A-AA/exec"
  web_app_url =
"https://script.google.com/macros/s/AKfycbxIS5UFnp4xLX9oL0Zne8xnQ-pU1YNZbJO
LcEO_k_hF6eMAIVFChspBu36WHQ9GQLUKfg/exec"

  url = f"{web_app_url}?action={function_name}"  # Append the function name as the
'action' parameter
  try:
    response = requests.get(url)
    if response.status_code == 200:
      st.success(f"{function_name} executed successfully!")
    else:
      st.error(f"Failed to execute {function_name}. Status code:
{response.status_code}")
  except Exception as e:
    st.error(f"An error occurred: {str(e)}")


# Function to check if a file already exists in Google Drive folder
def file_exists(drive_service, folder_id, file_name):
  query = f"'{folder_id}' in parents and name='{file_name}'"
  results = drive_service.files().list(q=query, spaces='drive', fields='files(id,
name)').execute()
  files = results.get('files', [])
  return any(file['name'] == file_name for file in files)


# Function to upload PDF files to Google Drive
def upload_pdfs(uploaded_files, folder_id):
  drive_service = authenticate_drive()
  count = 0
```

```
  for uploaded_file in uploaded_files:
    if file_exists(drive_service, folder_id, uploaded_file.name):
      # st.warning(f"PDF file '{uploaded_file.name}' already exists in the folder.")
      continue

    file_metadata = {
      'name': uploaded_file.name,
      'parents': [folder_id]
    }
    media = MediaIoBaseUpload(uploaded_file, mimetype='application/pdf')
    drive_service.files().create(body=file_metadata, media_body=media,
fields='id').execute()
    count = count + 1
    # st.session_state["success_message"] = f"Uploaded PDF file '{uploaded_file.name}'
to Google Drive"

  st.success(f" The {count} files are uploaded to the Google Drive.")


# Function to upload Google Sheets files to Google Drive
def upload_sheets(uploaded_file, folder_id):
  drive_service = authenticate_drive()

  if file_exists(drive_service, folder_id, uploaded_file.name):
    st.warning(f"Google Sheet file '{uploaded_file.name}' already exists in the folder.")
    return

  file_metadata = {
    'name': uploaded_file.name,
    'parents': [folder_id]
  }

  # Upload the file to Google Drive
  media = MediaIoBaseUpload(uploaded_file, mimetype=uploaded_file.type,
resumable=True)
  uploaded = drive_service.files().create(body=file_metadata, media_body=media,
fields='id').execute()

  st.success("The Excel sheet has been uploaded to the Google Drive.")
```

```
# Helper function to connect to a specific Google Sheet
def connect_to_google_sheets_with_name(sheet_name):
  creds = ServiceAccountCredentials.from_json_keyfile_name(CREDENTIALS_FILE,
SCOPE)
  client = gspread.authorize(creds)
  sheet = client.open(sheet_name)
  return sheet


def connect_to_google_sheets_with_id(file_id):
  creds = ServiceAccountCredentials.from_json_keyfile_name(CREDENTIALS_FILE,
SCOPE)
  client = gspread.authorize(creds)
  sheet = client.open_by_key(file_id)
  return sheet


def get_student_details(username):
  # Connect to the specific Google Sheet containing details
  sheet_name = "UI/UX Copy of Peer Evaluation2"
  sheet = connect_to_google_sheets_with_name(sheet_name)  # Modify to accept a sheet
name
  peer_eval_sheet = sheet.worksheet('PeerEval')  # Open the "PeerEval" sheet

  # Fetch all the data from the "PeerEval" sheet
  records = peer_eval_sheet.get_all_records()

  # Check if data exists
  if not records or 'Assigned Folder Link' not in records[0] or 'Spreadsheet Link' not in
records[0]:  # Checking the first row (header) for the column
      return -1, -1, -1  # Return None if the column does not exist

  # Find marks for the current user
  for record in records:
      if record['EMail ID'] == username:  # Ensure this matches your column name
          return record['Unique ID'], record['Assigned Folder Link'], record[
              'Spreadsheet Link']  # Returning the Unique id

  return None, None, None  # If no details found for the user
```

```
def get_student_marks(username):
  # Connect to the specific Google Sheet containing marks
  sheet_name = "UI/UX Copy of Peer Evaluation2"
  sheet = connect_to_google_sheets_with_name(sheet_name)  # Modify to accept a sheet name
  peer_eval_sheet = sheet.worksheet('PeerEval')  # Open the "PeerEval" sheet

  # Fetch all the data from the "PeerEval" sheet
  records = peer_eval_sheet.get_all_records()

  # Check if 'Average Marks' column exists
  if not records or 'Average Marks' not in records[0]:  # Checking the first row (header) for the column
      # print("Average Marks column not found")
      return -1  # Return None if the column does not exist

  # Find marks for the current user
  for record in records:
      if record['EMail ID'] == username and record['Average Marks']:  # Ensure this matches your column name
          return record['Average Marks']  # Returning the Average Mark's

  return None  # If no marks found for the user


# Fetch the student's PDF from Google Drive using unique ID
def get_student_pdf(unique_id):
  drive_service = authenticate_drive()
  folder_id = "1fT-inciLQut85BGEQrjMSWbVRcTsdWfQ"
  query = f"'{folder_id}' in parents and name contains '{unique_id}'"
  results = drive_service.files().list(q=query, fields="files(id, name)").execute()
  files = results.get('files', [])

  if files:
      file_id = files[0]['id']
      file_name = files[0]['name']

      # Download the PDF
```

```
        request = drive_service.files().get_media(fileId=file_id)
        fh = io.BytesIO()
        downloader = MediaIoBaseDownload(fh, request)
        done = False
        while not done:
            status, done = downloader.next_chunk()

        fh.seek(0)
        return fh, file_name

    return None, None


def renaming_files():
    folder_id = '1fT-inciLQut85BGEQrjMSWbVRcTsdWfQ'  # Replace with your Google Drive folder ID
    process_pdfs_in_folder(folder_id)
    # Authenticate Google Drive
    # service = authenticate_drive()

    # Google Drive folder IDs
    # stored_signatures_folder_id = '14QLNPdIRUZ3ici-GePoEewUCmxemjhUD' #The folder where we want to keep the Stored signature
    # uploaded_signatures_folder_id = '1ORVrU-UoXyDS-1ovyuk7FAjb_p94gnsx' #This will be the folder where our pdf files are kept
    # destination_folder_id = '1bPhLMZONpsPDxM9z_vQD2J9jAjtwG3FG'  # Folder where renamed files will be moved

    # Load stored signatures directly from Google Drive
    # stored_signatures, stored_filenames = load_stored_signatures(service, stored_signatures_folder_id)

    # Process uploaded signatures and copy renamed files to the destination folder
    # matched_files = process_signatures(service, uploaded_signatures_folder_id, stored_signatures, stored_filenames, destination_folder_id)

    # print(f"Matching process completed. Total matched files: {len(matched_files)}")


# Connect to Google Sheets
```

```
def fetch_sheet_data(sheet_name, worksheet_name):
  # gc = gspread.service_account(filename=CREDENTIALS_FILE)
  # spreadsheet = gc.open(sheet_name)
  # worksheet = spreadsheet.worksheet(worksheet_name)
  # return worksheet.get_all_values()
  creds = ServiceAccountCredentials.from_json_keyfile_name(CREDENTIALS_FILE,
                                          SCOPE)  # Replace with your credentials file
  client = gspread.authorize(creds)
  sheet = client.open(sheet_name).worksheet(worksheet_name)  # Open the specific
worksheet
  return sheet


# Fetch Peer Average and Standard Deviation data
def get_peer_average_data(sheet):
  data = sheet.get_all_values()

  for index, row in enumerate(data):
    if row[0] == "Peer":  # Check the first column of each row
      st_idx = index
    if row[0] == "SD":  # Check the first column of each row
      std_idx = index
    if row[0] == "Peer Average":  # Check the first column of each row
      pavg_idx = index

  # Extract student IDs, Standard Deviations, and Peer Averages
  student_ids = data[st_idx][1:]  # First row has student IDs starting from B1
  std_devs = list(map(float, data[std_idx][1:]))  # Row 6 has Standard Deviations starting
from B6
  peer_averages = list(map(float, data[pavg_idx][1:]))  # Row 7 has Peer Averages
starting from B7

  # Create a DataFrame with relevant data
  df = pd.DataFrame({
    'Student': student_ids,
    'Standard Deviation': std_devs,
    'Average Score': peer_averages
  })

  return df
```

```
# Generate Standard Deviation Chart
def create_standard_deviation_chart(df):
  fig = px.bar(df, x='Student', y='Standard Deviation', title='Standard Deviation of Scores
for Each Student',
          color_discrete_sequence=['#4682B4'])
  fig.update_layout(yaxis_title='Standard Deviation', xaxis_title='Student',
              plot_bgcolor='white', paper_bgcolor='white',  # Set background colors to
white
              font_color='black', title_font_color='black',
              xaxis=dict(title_font=dict(color='black'), tickfont=dict(color='black')),
              yaxis=dict(title_font=dict(color='black'), tickfont=dict(color='black'))
              )
  return fig


# Generate Peer Average Scores Chart
def create_average_scores_chart(df):
  fig = px.bar(df, x='Student', y='Average Score', title='Peer Average Scores for Each
Student',
          color_discrete_sequence=['#FF6347'])
  fig.update_layout(yaxis_title='Peer Average', xaxis_title='Student',
              plot_bgcolor='white', paper_bgcolor='white',  # Set background colors to
white
              font_color='black', title_font_color='black',
              xaxis=dict(title_font=dict(color='black'), tickfont=dict(color='black')),
              yaxis=dict(title_font=dict(color='black'), tickfont=dict(color='black'))
              )
  return fig


# Trigger when "Generate Charts" button is clicked
def generate_charts():
  sheet = fetch_sheet_data('UI/UX Copy of Peer Evaluation2', 'Evaluation Results')
  df = get_peer_average_data(sheet)  # Get the data
  # Display two charts
  st.plotly_chart(create_standard_deviation_chart(df))
  st.plotly_chart(create_average_scores_chart(df))
```

```
# Function to convert Excel file to Google Sheets
def convert_excel_to_google_sheet(file_id):
  drive_service = authenticate_drive()

  # File metadata for conversion
  file_metadata = {
    'mimeType': 'application/vnd.google-apps.spreadsheet'
  }

  # Convert the file and get the new file ID
  converted_file = drive_service.files().copy(fileId=file_id,
body=file_metadata).execute()
  return converted_file['id']


# Function to list all files in the given folder (Google Drive)
def list_spreadsheets_in_folder(folder_id):
  service = authenticate_drive()  # Authenticate Drive using the new function
  query = f"'{folder_id}' in parents and
(mimeType='application/vnd.google-apps.spreadsheet' OR
mimeType='application/vnd.openxmlformats-officedocument.spreadsheetml.sheet')"
  results = service.files().list(q=query).execute()
  files = results.get('files', [])

  if not files:
    print('No spreadsheets found in the folder.')
    return []

  return files


# Function to delete only spreadsheet files in the specified folder
def delete_all_spreadsheets_in_folder(folder_id):
  drive_service = authenticate_drive()

  # List all files in the folder
  query = f"'{folder_id}' in parents and trashed = false"
  results = drive_service.files().list(q=query).execute()
  files = results.get('files', [])
```

```
    # Iterate through files and delete only those with the MIME type for Google Sheets
    for file in files:
        if file['mimeType'] == 'application/vnd.google-apps.spreadsheet' or file['mimeType']
== 'application/vnd.openxmlformats-officedocument.spreadsheetml.sheet':
            try:
                drive_service.files().delete(fileId=file['id']).execute()
                print(f"Deleted spreadsheet: {file['name']}")
            except Exception as e:
                print(f"Error deleting spreadsheet {file['name']}: {e}")
        else:
            print(f"Skipped non-spreadsheet file: {file['name']}")


# Function to copy data from each spreadsheet to the target sheet
def copy_data_to_peer_eval(folder_id, target_spreadsheet_name,
target_worksheet_name):
    # Get the target spreadsheet using the new function
    target_spreadsheet = connect_to_google_sheets_with_name(target_spreadsheet_name)

    try:
        target_worksheet = target_spreadsheet.worksheet(target_worksheet_name)
    except gspread.WorksheetNotFound:
        print(f"Worksheet '{target_worksheet_name}' not found in the target spreadsheet.")
        return

    # List all spreadsheets in the folder
    files = list_spreadsheets_in_folder(folder_id)

    for file in files:
        file_id = file['id']
        file_name = file['name']
        mime_type = file['mimeType']

        print(f"Processing file: {file_name}")

        # If it's an Excel file, convert it to a Google Sheet
        if mime_type ==
'application/vnd.openxmlformats-officedocument.spreadsheetml.sheet':
            file_id = convert_excel_to_google_sheet(file_id)
```

```
        # Now open the file as a Google Sheet

        source_spreadsheet = connect_to_google_sheets_with_id(file_id)
        source_worksheet = source_spreadsheet.get_worksheet(0)  # Assuming data is in the
first worksheet
        source_data = source_worksheet.get_all_values()

        # Append data to the target worksheet
        if source_data:
            target_worksheet.append_rows(source_data, value_input_option="RAW")
            return

    print("Data copied to PeerEval worksheet successfully.")
    #delete_all_spreadsheets_in_folder(folder_id)
    print("Spreadsheet is removed successfully")


def admin_dashboard():
    st.title("Admin Dashboard")
    st.write(f"Welcome, {st.session_state['name']}")

    # Create tabs for each action
    tab, tab0, tab1, tab2, tab3, tab4, tab5, tab6, tab7, tab8 = st.tabs(
        ["Upload Data", "Rename Files", "Assign/De-Assign TA", "Pre Evaluation",
"Reminder Mail", "Post Evaluation",
         "Generate Charts",
         "Send Marks", "Cumulative Score", "Change Password"])

    # Tab for File upload option
    with tab:
        # Folder ID for the Google Drive folder where the files will be saved
        folder_id = "1fT-inciLQut85BGEQrjMSWbVRcTsdWfQ"  # Replace this with your
folder ID

        # Allow file upload for multiple Google Sheets
        st.subheader("Upload Student Information")
        sheet_files = st.file_uploader("Upload Google Sheet", type=["xlsx"],
accept_multiple_files=False,
                                       key="sheet_uploader")
```

```
        if sheet_files:
            upload_sheets(sheet_files, folder_id)

        # Allow file upload for multiple PDFs
        st.subheader("Upload PDF Files")
        pdf_files = st.file_uploader("Upload PDF files", type=["pdf"],
accept_multiple_files=True, key="pdf_uploader")

        if pdf_files:
            upload_pdfs(pdf_files, folder_id)
            time.sleep(2)
            logout()
            st.rerun()

    with tab0:
        if st.button("Rename Files"):
            renaming_files()

    # Tab for TA update
    with tab1:
        student_username = st.text_input("Enter Student's Username")
        if st.button("Update Role to TA"):
            if update_role_to_ta(student_username):
                st.success(f"{student_username.split('.')[0].capitalize()}'s role updated to TA.")
            else:
                st.error("Failed to update the role. Check if the username exists and belongs to a
student.")
        if st.button("Update Role to Student"):
            if update_role_to_Student(student_username):
                st.success(f"{student_username.split('.')[0].capitalize()}'s role updated to
Student.")
            else:
                st.error("Failed to update the role. Check if the username exists and belongs to a
TA.")

    # Tab for Pre Evaluation
    with tab2:
        num_Questions = st.number_input("Enter the number of questions", min_value=1,
max_value=100)
```

```
    # Button to submit the form
    if st.button("Set Parameters"):
        # Prepare the data to send
        data = {
            "num_Questions": num_Questions  # Send `num_Questions` parameter
        }

        # Google Apps Script Web App URL (replace with your actual Web App URL)
        # url =
"https://script.google.com/macros/s/AKfycbwBrsqBz4_d-muszL1oclHczAqQtpddtmzRc
ZPtV9NVXZuS0t-18kWYfUT-F3W728A-AA/exec"
        url =
"https://script.google.com/macros/s/AKfycbwBrsqBz4_d-muszL1oclHczAqQtpddtmzRc
ZPtV9NVXZuS0t-18kWYfUT-F3W728A-AA/exec"
        headers = {'Content-Type': 'application/json'}

        try:
            # Send a POST request to the Google Apps Script Web App
            response = requests.post(url, data=json.dumps(data), headers=headers)
            if response.status_code == 200:
                st.success(f"Data sent successfully! Response: {response.text}")
            else:
                st.error(f"Failed to send data. Status code: {response.status_code}")
        except Exception as e:
            st.error(f"Error occurred: {e}")

    target_spreadsheet_name = "UI/UX Copy of Peer Evaluation2"
    # target_spreadsheet_name = "Sample_Run"
    target_worksheet_name = "PeerEval"
    if st.button("Data Extraction"):
        copy_data_to_peer_eval(folder_id, target_spreadsheet_name,
target_worksheet_name)
        delete_all_spreadsheets_in_folder(folder_id)
    if st.button("Pre Evaluation"):
        trigger_google_apps_script("PreEval")

# Tab for Checking Pending Evaluations
with tab3:
    if st.button("Reminder Mail"):
        trigger_google_apps_script("CheckEval")
```

```
    # Tab for Post Evaluation
    with tab4:
        if st.button("Post Evaluation"):
            trigger_google_apps_script("PostEval")

    # Tab for Generating Charts
    with tab5:
        if st.button("Generate Charts"):
            generate_charts()
            # trigger_google_apps_script("GenChart")

    # Tab for Sending Marks
    with tab6:
        if st.button("Send Marks"):
            trigger_google_apps_script("SendMail")

    with tab7:
        if st.button("Send Cumulative Score"):
            trigger_google_apps_script("SendFinalM")

    with tab8:
        change_password_dashboard()


def teacher_dashboard():
    st.title("Teacher Dashboard")
    # var_user = st.session_state['username'].split('@')[0]
    # if '.' in var_user:
    #   st.write(f"Welcome, Dr. {var_user.split('.')[0].capitalize()}")
    # else:
    #    st.write(f"Welcome, Dr. {var_user.capitalize()}")
    st.write(f"Welcome, {st.session_state['name']}")

    # Create tabs for each action
    tab, tab0, tab1, tab2, tab3, tab4, tab5, tab6, tab7 = st.tabs(
        ["Rename Files", "Assign/De-Assign TA", "Pre Evaluation", "Reminder Mail",
         "Post Evaluation", "Generate Charts", "Send Marks", "Cumulative Score", "Change
Password"])
```

```
  # Tab for TA update
  with tab:
    if st.button("Rename Files"):
      renaming_files()
  with tab0:
    student_username = st.text_input("Enter Student's Username")
    if st.button("Update Role to TA"):
      if update_role_to_ta(student_username):
        st.success(f"{student_username.split('.')[0].capitalize()}'s role updated to TA.")
      else:
        st.error("Failed to update the role. Check if the username exists and belongs to a
student.")
    if st.button("Update Role to Student"):
      if update_role_to_Student(student_username):
        st.success(f"{student_username.split('.')[0].capitalize()}'s role updated to
Student.")
      else:
        st.error("Failed to update the role. Check if the username exists and belongs to a
TA.")

  # Tab for Pre Evaluation
  with tab1:
    num_Questions = st.number_input("Enter the number of questions", min_value=1,
max_value=100)
    # Button to submit the form
    if st.button("Set Parameters"):
      # Prepare the data to send
      data = {
        "num_Questions": num_Questions  # Send `num_Questions` parameter
      }

      # Google Apps Script Web App URL (replace with your actual Web App URL)
      # url =
"https://script.google.com/macros/s/AKfycbwBrsqBz4_d-muszL1oclHczAqQtpddtmzRc
ZPtV9NVXZuS0t-18kWYfUT-F3W728A-AA/exec"
      url =
"https://script.google.com/macros/s/AKfycbwBrsqBz4_d-muszL1oclHczAqQtpddtmzRc
ZPtV9NVXZuS0t-18kWYfUT-F3W728A-AA/exec"
      headers = {'Content-Type': 'application/json'}
```

```
            try:
                # Send a POST request to the Google Apps Script Web App
                response = requests.post(url, data=json.dumps(data), headers=headers)
                if response.status_code == 200:
                    st.success(f"Data sent successfully! Response: {response.text}")
                else:
                    st.error(f"Failed to send data. Status code: {response.status_code}")
            except Exception as e:
                st.error(f"Error occurred: {e}")

        folder_id = "1fT-inciLQut85BGEQrjMSWbVRcTsdWfQ"
        target_spreadsheet_name = "UI/UX Copy of Peer Evaluation2"
        # target_spreadsheet_name = "Sample_Run"
        target_worksheet_name = "PeerEval"
        if st.button("Data Extraction"):
            copy_data_to_peer_eval(folder_id, target_spreadsheet_name,
target_worksheet_name)
            delete_all_spreadsheets_in_folder(folder_id)
        if st.button("Pre Evaluation"):
            # copy_data_to_peer_eval(folder_id, target_spreadsheet_name,
target_worksheet_name)
            trigger_google_apps_script("PreEval")

    # Tab for Checking Pending Evaluations
    with tab2:
        if st.button("Reminder Mail"):
            trigger_google_apps_script("CheckEval")

    # Tab for Post Evaluation
    with tab3:
        if st.button("Post Evaluation"):
            trigger_google_apps_script("PostEval")

    # Tab for Generating Charts
    with tab4:
        if st.button("Generate Charts"):
            generate_charts()
            # trigger_google_apps_script("GenChart")
    with tab5:
        if st.button("Send Marks"):
```

```
            trigger_google_apps_script("SendMail")

    with tab6:
        if st.button("Send Cumulative Score"):
            trigger_google_apps_script("SendFinalM")

    with tab7:
        change_password_dashboard()


# Role-based content: Teacher Dashboard with multiple file uploads
def ta_dashboard():
    st.title("TA Dashboard")
    # st.write(f"Welcome, {st.session_state['username'].split('.')[0].capitalize()}")
    st.write(f"Welcome, {st.session_state['name']}")

    # Create tabs for each action
    tab, tab0, tab1, tab2, tab3, tab4, tab5 = st.tabs(
        ["Upload Data", "Rename Files", "Pre Evaluation", "Reminder Mail", "Post
Evaluation", "Generate Charts",
         "Change Password"])

    # Tab for File upload option
    with tab:
        # Folder ID for the Google Drive folder where the files will be saved
        folder_id = "1fT-inciLQut85BGEQrjMSWbVRcTsdWfQ"  # Replace this with your
folder ID

        # Allow file upload for multiple Google Sheets
        st.subheader("Upload Student Information")
        sheet_files = st.file_uploader("Upload Google Sheet", type=["xlsx"],
accept_multiple_files=False,
                                       key="sheet_uploader")

        if sheet_files:
            upload_sheets(sheet_files, folder_id)

        # Allow file upload for multiple PDFs
        st.subheader("Upload PDF Files")
```

```
    pdf_files = st.file_uploader("Upload PDF files", type=["pdf"],
accept_multiple_files=True, key="pdf_uploader")

    if pdf_files:
        upload_pdfs(pdf_files, folder_id)
        time.sleep(2)
        logout()
        st.rerun()

  with tab0:
    if st.button("Rename Files"):
        renaming_files()

  # Tab for Pre Evaluation
  with tab1:
    num_Questions = st.number_input("Enter the number of questions", min_value=1,
max_value=100)
    # Button to submit the form
    if st.button("Set Parameters"):
        # Prepare the data to send
        data = {
            "num_Questions": num_Questions  # Send `num_Questions` parameter
        }

        # Google Apps Script Web App URL (replace with your actual Web App URL)
        # url =
"https://script.google.com/macros/s/AKfycbwBrsqBz4_d-muszL1oclHczAqQtpddtmzRc
ZPtV9NVXZuS0t-18kWYfUT-F3W728A-AA/exec"
        url =
"https://script.google.com/macros/s/AKfycbwBrsqBz4_d-muszL1oclHczAqQtpddtmzRc
ZPtV9NVXZuS0t-18kWYfUT-F3W728A-AA/exec"
        headers = {'Content-Type': 'application/json'}

        try:
            # Send a POST request to the Google Apps Script Web App
            response = requests.post(url, data=json.dumps(data), headers=headers)
            if response.status_code == 200:
                st.success(f"Data sent successfully! Response: {response.text}")
            else:
                st.error(f"Failed to send data. Status code: {response.status_code}")
```

```
            except Exception as e:
                st.error(f"Error occurred: {e}")

        folder_id = "1fT-inciLQut85BGEQrjMSWbVRcTsdWfQ"
        target_spreadsheet_name = "UI/UX Copy of Peer Evaluation2"
        # target_spreadsheet_name = "Sample_Run"
        target_worksheet_name = "PeerEval"
        if st.button("Data Extraction"):
            copy_data_to_peer_eval(folder_id, target_spreadsheet_name,
target_worksheet_name)
            delete_all_spreadsheets_in_folder(folder_id)
        if st.button("Pre Evaluation"):
            # copy_data_to_peer_eval(folder_id, target_spreadsheet_name,
target_worksheet_name)
            trigger_google_apps_script("PreEval")

    # Tab for Checking Pending Evaluations
    with tab2:
        if st.button("Reminder Mail"):
            trigger_google_apps_script("CheckEval")

    # Tab for Post Evaluation
    with tab3:
        if st.button("Post Evaluation"):
            trigger_google_apps_script("PostEval")

    # Tab for Generating Charts
    with tab4:
        if st.button("Generate Charts"):
            generate_charts()
            # trigger_google_apps_script("GenChart")

    with tab5:
        change_password_dashboard()


def student_dashboard():
    st.title("Student Dashboard")
    # st.write(f"Welcome, {st.session_state['username'].split('.')[0].capitalize()}")
    st.write(f"Welcome, {st.session_state['name']}")
```

```
  # Creating tabs
  tab1, tab2, tab3, tab4 = st.tabs(["Evaluation", "View Marks", "Answer Script", "Change
Password"])

  # Tab for opening the peer evaluation spreadsheet
  with tab1:
    if st.session_state["username"]:
      # Fetch unique ID, and spreadsheet link using the session's username
      unique_id, folder_link, sheet_link =
get_student_details(st.session_state["username"])
    else:
      st.error("Username is Incorrect!")

    t1, t2 = st.tabs(["Evaluation Files", "Evaluation Sheet"])
    with t1:
      if folder_link == -1:
        st.success("Hurray! Nothing to Evaluate.")
      elif folder_link:
        st.markdown(f"[Link to open Evaluation Files]({folder_link})",
unsafe_allow_html=True)
      else:
        st.error("Folder link not found.")
    with t2:
      if sheet_link == -1:
        st.success("Hurray! Nothing to Evaluate.")
      elif sheet_link:
        st.markdown(f"[Link to open Evaluation Sheet]({sheet_link})",
unsafe_allow_html=True)
      else:
        st.error("Spreadsheet link not found.")

  # Tab for viewing marks
  with tab2:
    if st.button("Fetch Marks"):
      # Fetch Marks
      marks = get_student_marks(st.session_state["username"])
      if marks and unique_id and marks != -1:
        st.write(f"Your evaluation marks are =  {marks}")
      elif marks == -1:
```

```
            st.success("Marks are not released yet!")
        else:
            st.error("No marks are available!\nCheck with Teacher/TA.")

    # Tab for downloading PDF
    with tab3:
        if unique_id == -1:
            st.success("PDF not released yet!")
        else:
            pdf_file, file_name = get_student_pdf(unique_id)
            if pdf_file:
                st.download_button(
                    label="Download your Evaluation PDF",
                    data=pdf_file,
                    file_name=file_name,
                    mime='application/pdf'
                )
            else:
                st.error("PDF not found! Contact Teacher/TA.")

    with tab4:
        change_password_dashboard()


# Main Streamlit app
def main():
    # Initialize session state variables if not present
    if "login_status" not in st.session_state:
        st.session_state["login_status"] = False
    if "role" not in st.session_state:
        st.session_state["role"] = None
    if "username" not in st.session_state:
        st.session_state["username"] = None
    if "page" not in st.session_state:
        st.session_state["page"] = "login"
    if "message" not in st.session_state:
        st.session_state["message"] = None
    if "success_message" not in st.session_state:
        st.session_state["success_message"] = None
    if "name" not in st.session_state:
```

```
    st.session_state["name"] = None

# Set background color and input field styling using HTML
st.markdown(
    """
    <style>
    .stApp {
        background-color: #1f3f49;  /* Light blue background */
    }
    .stTextInput>div>input, .stPasswordInput>div>input {
        background-color: white;  /* White background for text and password inputs */
        color: black;  /* Text color for input fields */
    }
    .stButton>button {
        background-color: #007bff;  /* Optional: Style buttons with a color */
        color: white;
    }
    </style>
    """,
    unsafe_allow_html=True
)

# Page routing based on session state
if st.session_state["page"] == "login":
    st.title("Peer Evaluation System")

    # Tabs for Login and Registration
    tab1, tab2 = st.tabs(["Login", "Register"])

    with tab1:
        st.header("Login")

        with st.form(key='login_form'):
            username = st.text_input("Email ID")
            password = st.text_input("Password", type="password")
            submit_button = st.form_submit_button("Login")

            if submit_button:
                users = get_users_from_sheets()
                login(username, password, users)
```

```
            if st.session_state["login_status"]:
                st.rerun()

    with tab2:
        st.header("Register")

        if "otp_sent" not in st.session_state:
            st.session_state["otp_sent"] = False  # Flag to track if OTP is sent
        if "otp_verified" not in st.session_state:
            st.session_state["otp_verified"] = False  # Flag to track if OTP is verified

        with st.form(key='register_form'):
            reg_name = st.text_input("Name", key='reg_name')
            reg_username = st.text_input("Email ID", key='reg_username')
            reg_password = st.text_input("Password", type="password",
key='reg_password')
            register_button = st.form_submit_button("Register")

            if register_button:
                if not reg_username.endswith("@iitrpr.ac.in"):
                    st.error("Email ID must be of @iitrpr.ac.in domain.")
                elif not validate_password(reg_password):
                    st.error(
                        "Password must include at least One: - \n1. Uppercase letter. \n2.
Lowercase letter. \n3. Special character. \n4. Numerical digit. \n5. Must be at least 8
characters long.")
                else:
                    var_otp = generate_otp()
                    if send_otp_email(var_otp, reg_username, reg_name):
                        st.session_state["otp_sent"] = True
                        st.session_state["otp"] = var_otp
                        st.session_state["username"] = reg_username
                        st.session_state["password"] = reg_password
                        st.session_state["name"] = reg_name
                        st.success(f"OTP has been sent to the {reg_username}")
                    elif send_otp_email(var_otp, reg_username, reg_name) == -1:
                        st.error("Error: Email Address not found!")
                    else:
                        st.error("Error! OTP not sent.")
        if st.session_state.get("otp_sent", False):
```

```
            with st.form(key='verification_form'):
                reg_otp = st.text_input("OTP", key='reg_otp')
                verify_button = st.form_submit_button("Verify")
                if verify_button:
                    if reg_otp == st.session_state["otp"]:
                        users = get_users_from_sheets()
                        if any(user['username'] == st.session_state["username"] for user in
users):
                            st.error("Username already exists")
                        else:
                            role = register_user(st.session_state["reg_username"],
st.session_state["password"], st.session_state["name"])
                            st.success(f"User registered successfully with role: {role}")
                            time.sleep(2)
                            # Redirect to the login page
                            st.session_state["page"] = "login"
                            st.rerun()
                    else:
                        st.error("Incorrect OTP!")

    elif st.session_state["page"] == "dashboard":
        if st.session_state["role"] == "Admin":
            admin_dashboard()
        elif st.session_state["role"] == "Teacher":
            teacher_dashboard()
        elif st.session_state["role"] == "TA":
            ta_dashboard()
        elif st.session_state["role"] == "Student":
            student_dashboard()

        # Logout button
        if st.button("Logout"):
            logout()
            st.rerun()


if __name__ == "__main__":
    main()
```

2. **Rename_File.py -**

```
from pdf2image import convert_from_bytes
from PIL import Image
import pytesseract
import re
import io
from googleapiclient.discovery import build
from google.oauth2.service_account import Credentials
from googleapiclient.http import MediaIoBaseDownload, MediaIoBaseUpload

SCOPE = [
  "https://www.googleapis.com/auth/drive",
  "https://www.googleapis.com/auth/spreadsheets",
]
CREDENTIALS_FILE = "peer-evaluation-sem1-e2fcf8b5fc27.json"

# Authenticate Google Drive
def authenticate_drive():
  creds = Credentials.from_service_account_file(CREDENTIALS_FILE,
scopes=SCOPE)
  service = build('drive', 'v3', credentials=creds)
  return service

# Crop the top left corner of the image
def crop_top_left(image, crop_width, crop_height):
  left = 0
  top = 0
  right = crop_width
  bottom = crop_height
  return image.crop((left, top, right, bottom))

# Get PDF content from Google Drive without downloading
def get_pdf_from_drive(service, file_id):
  request = service.files().get_media(fileId=file_id)
  pdf_content = io.BytesIO()
  downloader = MediaIoBaseDownload(pdf_content, request)

  done = False
  while not done:
    status, done = downloader.next_chunk()
```

```
        print(f"Download {int(status.progress() * 100)}%.")

    pdf_content.seek(0)  # Move to the beginning of the stream
    return pdf_content

# Extract name from the top-left corner of the first page
def name_extraction(service, folder_id, file_id, pdf_filename):
    try:
        pdf_content = get_pdf_from_drive(service, file_id)
        images = convert_from_bytes(pdf_content.read())
        print(f"Successfully converted PDF to images. Number of pages: {len(images)}")
    except Exception as e:
        print(f"Error converting PDF to images: {e}")
        return

    if not images:
        raise Exception("Failed to convert PDF to images")

    image = images[0]  # Only the first page is processed
    crop_width = int(image.width * 0.2)
    crop_height = int(image.height * 0.1)

    cropped_image = crop_top_left(image, crop_width, crop_height)

    recognised_text = pytesseract.image_to_string(cropped_image, config='--psm 6')

    extracted_name = re.findall(r'\b\d{3}\b', recognised_text)
    text = "".join(extracted_name)

    if text:
        new_pdf_filename = f"{text}.pdf"
        print("Extracted name for renaming:", new_pdf_filename)
    else:
        print("No valid name extracted, keeping the original filename.")
        new_pdf_filename = pdf_filename

    # Re-upload the renamed PDF to Google Drive
    upload_pdf(service, folder_id, pdf_content, new_pdf_filename)

    # Delete the original PDF file
```

```
    delete_pdf(service, file_id)

# Upload the renamed file back to Google Drive without saving it locally
def upload_pdf(service, folder_id, pdf_content, new_filename):
    pdf_content.seek(0)  # Reset the stream position before uploading
    file_metadata = {
        'name': new_filename,
        'parents': [folder_id]
    }
    media = MediaIoBaseUpload(pdf_content, mimetype='application/pdf')
    file = service.files().create(body=file_metadata, media_body=media,
fields='id').execute()
    print(f"Uploaded renamed file as {new_filename}. File ID: {file.get('id')}")

# Function to delete the original PDF file
def delete_pdf(service, file_id):
    try:
        service.files().delete(fileId=file_id).execute()
        print(f"Deleted original PDF file with ID: {file_id}")
    except Exception as e:
        print(f"Error deleting file: {e}")

# Main function to process PDFs in the Google Drive folder
def process_pdfs_in_folder(folder_id):
    service = authenticate_drive()

    # List PDF files in the folder
    query = f"'{folder_id}' in parents and mimeType='application/pdf'"
    results = service.files().list(q=query, fields="files(id, name)").execute()
    files = results.get('files', [])

    if not files:
        raise Exception("No PDF files found in the specified folder")

    # Process each PDF file
    for file in files:
        file_id = file['id']
        pdf_filename = file['name']
        print(f"Processing file: {pdf_filename}")
        name_extraction(service, folder_id, file_id, pdf_filename)
```

3. **PreEvaluation.gs -**

```
var sheetName = "PeerEval";


/**
 * This is the part of the code where
 * Batches are made and then Moved to the Target Folder
 */
function moveFilesInBatches(source_folder, target_folder, students_per_batch,
num_Questions) {
  /**
   * This function moves the files in batches specified by @students_per_batch variable
   * from source folder to target folder
   * identified by @source_folder and @target_folder
   *
   * Name of the sub-folders
   *  - The naming is decided by the iteration of the code running
   *  - The @folderBatch controls this Script Property
   *  - Then a local variable counts each group --> @folderCount
   *  - to chnage naming convention, look into these two variables
   *
   * The etire code is written in the try-catch paradigm to make
   *  sure any error is handled and shown properly.
   *  Any further changes are suggested also to incorporate
   *  the same paradigm.
   *
   * To be used in the MAIN Driver Code
   */

  // Load the current value of folderBatch from the Properties Service
  var folderBatch = PropertiesService.getScriptProperties().getProperty('folderBatch');
  if (!folderBatch) {
    folderBatch = 1; // Initial value if not set previously
  }
  folderBatch = parseInt(folderBatch); // Convert to integer

  try {
    var sourceFolder = DriveApp.getFolderById(source_folder);
  } catch (e) {
```

```
  Logger.log('Error accessing source folder: ' + e.toString());
  return;
}

try {
  var targetFolder = DriveApp.getFolderById(target_folder);
} catch (e) {
  Logger.log('Error accessing target folder: ' + e.toString());
  return;
}

try {
  var files = sourceFolder.getFiles();
} catch (e) {
  Logger.log('Error retrieving files: ' + e.toString());
  return;
}

var fileCount = 0;
var folderCount = 0;
var currentFolder;

try {
  while (files.hasNext()) {
    if (fileCount % students_per_batch === 0) {
      // Create a new folder for the next batch of files
      var timestamp = new Date().toISOString().replace(/[-:.]/g, "");
      var newFolderName = "G" + folderCount;
      currentFolder = targetFolder.createFolder(newFolderName);
      folderCount++;
    }

    var file = files.next();
    file.makeCopy(currentFolder);
    fileCount++;
  }

  // Increment folderBatch and save it back to the Properties Service
  folderBatch++;
```

```
    PropertiesService.getScriptProperties().setProperty('folderBatch',
folderBatch.toString());
  } catch (e) {
    Logger.log('Error moving files: ' + e.toString());
    return;
  }

  // Log the number of files moved and number of folders created
  Logger.log('Moved ' + fileCount + ' files into ' + folderCount + ' folders.');
}


/**
 * Fetches the names of the folders in which each of the files are located
 * These names are stored in the D-column and are used later
 */
function updateSpreadsheetWithFolderNames(sheetName, target_folder) {
  /**
   * Updates the specified spreadsheet with the folder names based on file names
   *
   * This function processes all files in subfolders of the given target folder,
   * extracts roll numbers from the file names and updates the corresponding row
   * in the spreadsheet with the folder name where the file is located.
   *
   * @param {string} workbookId - The ID of the Google Sheets workbook.
   * @param {string} sheetName - The name of the sheet in the workbook.
   * @param {string} target_folder - The ID of the target folder containing subfolders.
   */

  var spreadsheet = SpreadsheetApp.getActiveSpreadsheet();
  var sheet = spreadsheet.getSheetByName(sheetName);
  var targetFolder = DriveApp.getFolderById(target_folder);
  var folders = targetFolder.getFolders();

  sheet.getRange(1, 4).setValue("Folder");

  while (folders.hasNext()) {
    var folder = folders.next();
    var folderName = folder.getName();
    var files = folder.getFiles();
```

```
    while (files.hasNext()) {
      var file = files.next();
      var fileName = file.getName();
      Logger.log('Processing file: ' + fileName);

      // Assume the file name is in the format roll_no.pdf
      var rollNo = extractRollNumberGetName(fileName);

      if (rollNo !== null) {
        Logger.log('Extracted roll number: ' + rollNo);
        var rowIndex = findRowIndexByValueGetName(sheet, 3, rollNo); // Assuming roll
numbers are in column C (3)

        if (rowIndex !== -1) {
          sheet.getRange(rowIndex + 1, 4).setValue(folderName); // Update column D (4)
          Logger.log('Updated roll number ' + rollNo + ' in row ' + (rowIndex + 1) + ' with
folder name ' + folderName);
        } else {
          Logger.log("Roll number " + rollNo + " not found in column C.");
        }
      } else {
        Logger.log("Invalid file name: " + fileName);
      }
    }
  }
}

// Function to extract roll number from file name
function extractRollNumberGetName(fileName) {
  /**
   * Extracts the roll number from a file name.
   *
   * This function assumes the file name format is "roll_no.pdf" and extracts
   * the numeric roll number from it.
   *
   * @param {string} fileName - The name of the file.
   * @returns {number|null} The extracted roll number, or null if the file name is invalid.
   *  logs the invalid error message
   */
```

```
  var match = fileName.match(/^(\d+)\.pdf$/); // Assuming the file name format is
"roll_no.pdf"
  return match ? parseInt(match[1], 10) : null;
}

// Function to find the row index by value in a specific column of a sheet
function findRowIndexByValueGetName(sheet, columnIndex, value) {
  /**
   * Finds the row index by value in a specific column of a sheet.
   *
   * This function searches for a specific value in the given column and returns
   * the row index where the value is found.
   *
   * @param {object} sheet - The sheet object where the search is performed.
   * @param {number} columnIndex - The column index to search in (1-based).
   * @param {number|string} value - The value to search for.
   * @returns {number} The row index (0-based) where the value is found, or -1 if not
found.
   */

  var data = sheet.getRange(1, columnIndex, sheet.getLastRow(), 1).getValues();
  for (var i = 0; i < data.length; i++) {
    if (data[i][0] === value) {
      return i;
    }
  }
  return -1; // Value not found
}

function mainAssign(source_folder, target_folder, students_per_batch, num_Questions) {
  /**
   * Driver code for the Fetching of the Name
   * To be used in the MAIN Driver Code
   */

  updateSpreadsheetWithFolderNames(sheetName, target_folder);
}
```

```
/**
 * Assign the folder which has to be checked by that group of students
 * Make sure the same group is not assigned to them
 */
function updateBatchAssignments_1(sheetName) {
  /**
   * Updates the batch assignments in a spreadsheet.
   * This function reads folder names from column D, generates a mapping of current folders
   *  to assigned folders for peer evaluation, and writes the assigned folder names to column E.
   *
   * @param {string} workbookId - The ID of the Google Sheets workbook.
   * @param {string} sheetName - The name of the sheet in the workbook.
   */

  var spreadsheet = SpreadsheetApp.getActiveSpreadsheet();
  var sheet = spreadsheet.getSheetByName(sheetName);

  // Get folder names from column D, ignoring the first row
  var data = sheet.getRange(2, 4, sheet.getLastRow() - 1, 1).getValues(); // Column D (4)
  var folderNames = data.map(row => row[0]).filter(name => name);

  // Get unique folder names
  var uniqueFolders = Array.from(new Set(folderNames));
  Logger.log('Unique folder names: ' + uniqueFolders.join(', '));

  // Create a mapping of current folder to assigned folder
  var folderMap = {};
  for (var i = 0; i < uniqueFolders.length; i++) {
    var currentFolder = uniqueFolders[i];
    var assignedFolder = uniqueFolders[(i + 1) % uniqueFolders.length];
    folderMap[currentFolder] = assignedFolder;
  }

  Logger.log('Folder assignment map: ' + JSON.stringify(folderMap));

  // Write the assigned folder names to column E, starting from the second row
  for (var i = 0; i < folderNames.length; i++) {
    var folderName = folderNames[i];
```

```
    var assignedFolder = folderMap[folderName];

    // Find the row by folder name
    var rowIndex = findRowIndexByValueAssign(sheet, 4, folderName, i + 2); // Start
from row 2
    sheet.getRange(rowIndex, 5).setValue("Assigned Folder");
    if (rowIndex !== -1) {
      sheet.getRange(rowIndex + 1, 5).setValue(assignedFolder); // Update column E (5)
      Logger.log('Assigned ' + assignedFolder + ' to row ' + (rowIndex + 1));
    }
  }
}

// Function to find the row index by value in a specific column of a sheet
function findRowIndexByValueAssign(sheet, columnIndex, value, startRow) {
  /**
   * Finds the row index by value in a specific column of a sheet, starting from a specified
row.
   *
   * This function searches for a specific value in the given column, starting from a
specified row,
   *  and returns the row index where the value is found.
   *
   * @param {object} sheet - The sheet object where the search is performed.
   * @param {number} columnIndex - The column index to search in (1-based).
   * @param {number|string} value - The value to search for.
   * @param {number} startRow - The row to start the search from (1-based).
   *
   * @returns {number} The row index (0-based) where the value is found, or -1 if not
found.
   */

  var data = sheet.getRange(startRow, columnIndex, sheet.getLastRow() - startRow + 1,
1).getValues();
  for (var i = 0; i < data.length; i++) {
    if (data[i][0] == value) { // Using == to avoid type mismatch
      return i + startRow - 1; // Adjusting the index to be 0-based
    }
  }
  return -1; // Value not found
```

```
}

function mainAssignBatch(source_folder, target_folder, students_per_batch,
num_Questions) {
  /**
   * Driver Code for the assigning of the peer evaluation groups
   * To be used in the MAIN Driver Code
   */

  updateBatchAssignments_1(sheetName);
}



/**
 * Generate the Link for the assigned Folder for the student to get the
 * VIEW-ONLY Access to the students
 */
function updateBatchAssignments_2(sheetName) {
  /**
   * Updates batch assignments in a spreadsheet for peer evaluation.
   *
   * This function reads folder names from column D, creates a mapping of
   *  current folders to assigned folders, and writes the assigned folder
   *  names to column E.
   *
   * @param {string} workbookId - The ID of the Google Sheets workbook.
   * @param {string} sheetName - The name of the sheet in the workbook.
   */

  var spreadsheet = SpreadsheetApp.getActiveSpreadsheet();
  var sheet = spreadsheet.getSheetByName(sheetName);

  // Get folder names from column D, ignoring the first row
  var data = sheet.getRange(2, 4, sheet.getLastRow() - 1, 1).getValues(); // Column D (4)
  var folderNames = data.map(row => row[0]).filter(name => name);

  // Get unique folder names
  var uniqueFolders = Array.from(new Set(folderNames));
  Logger.log('Unique folder names: ' + uniqueFolders.join(', '));
```

```
  // Create a mapping of current folder to assigned folder
  var folderMap = {};
  for (var i = 0; i < uniqueFolders.length; i++) {
    var currentFolder = uniqueFolders[i];
    var assignedFolder = uniqueFolders[(i + 1) % uniqueFolders.length];
    folderMap[currentFolder] = assignedFolder;
  }

  Logger.log('Folder assignment map: ' + JSON.stringify(folderMap));

  // Write the assigned folder names to column E, starting from the second row
  for (var i = 0; i < folderNames.length; i++) {
    var folderName = folderNames[i];
    var assignedFolder = folderMap[folderName];

    // Find the row by folder name
    var rowIndex = findRowIndexByValueLink(sheet, 4, folderName, i + 2); // Start from
row 2
    if (rowIndex !== -1) {
      sheet.getRange(rowIndex + 1, 5).setValue(assignedFolder); // Update column E (5)
      Logger.log('Assigned ' + assignedFolder + ' to row ' + (rowIndex + 1));
    }
  }
}

// Function to find the row index by value in a specific column of a sheet
function findRowIndexByValueLink(sheet, columnIndex, value, startRow) {
  /**
   * Finds the row index by value in a specific column of a sheet, starting from a specified
row.
   *
   * @param {object} sheet - The sheet object where the search is performed.
   * @param {number} columnIndex - The column index to search in (1-based).
   * @param {number|string} value - The value to search for.
   * @param {number} startRow - The row to start the search from (1-based).
   * @returns {number} The row index (0-based) where the value is found, or -1 if not
found.
   */
```

```
  var data = sheet.getRange(startRow, columnIndex, sheet.getLastRow() - startRow + 1,
1).getValues();
  for (var i = 0; i < data.length; i++) {
    if (data[i][0] == value) { // Using == to avoid type mismatch
      return i + startRow - 1; // Adjusting the index to be 0-based
    }
  }
  return -1; // Value not found
}

function generateFolderLinks(sheetName, target_folder) {
  /**
   * Generates view-only links for assigned folders and writes them to the spreadsheet.
   *
   * This function reads assigned folders from column E, generates view-only links for
these
   * folders, and writes the links to column F. It also sets the sharing settings of the
   * folders to "anyone with the link can view".
   *
   * @param {string} workbookId - The ID of the Google Sheets workbook.
   * @param {string} sheetName - The name of the sheet in the workbook.
   * @param {string} target_folder - The ID of the target folder containing all folders.
   */

  var spreadsheet = SpreadsheetApp.getActiveSpreadsheet();
  var sheet = spreadsheet.getSheetByName(sheetName);

  // Get folder assignments from column E, ignoring the first row
  var folderAssignments = sheet.getRange(2, 5, sheet.getLastRow() - 1, 1).getValues(); //
Column E (5)
  var uniqueFolders = Array.from(new Set(folderAssignments.map(row =>
row[0]).filter(name => name)));

  // Get target folder
  var targetFolder = DriveApp.getFolderById(target_folder);

  // Create a mapping of folder names to view links
  var folderLinkMap = {};
  var folders = targetFolder.getFolders();
  while (folders.hasNext()) {
```

```
    var folder = folders.next();
    if (uniqueFolders.includes(folder.getName())) {
      // Set sharing settings to anyone with the link can view
      folder.setSharing(DriveApp.Access.ANYONE_WITH_LINK,
DriveApp.Permission.VIEW); // giving VIEW ONLY permission

      var folderId = folder.getId();
      var folderUrl = 'https://drive.google.com/drive/folders/' + folderId;
      folderLinkMap[folder.getName()] = folderUrl;
    }
  }

  Logger.log('Folder link map: ' + JSON.stringify(folderLinkMap));

  // Write the view-only links to column F, starting from the second row
  for (var i = 0; i < folderAssignments.length; i++) {
    var assignedFolder = folderAssignments[i][0];

    if (folderLinkMap[assignedFolder]) {
      var folderLink = folderLinkMap[assignedFolder];

      // Find the row by assigned folder name
      var rowIndex = findRowIndexByValueLink(sheet, 5, assignedFolder, i + 2); // Start
from row 2
      sheet.getRange("E1").setValue("Assigned Folder");
      sheet.getRange("F1").setValue("Assigned Folder Link");
      if (rowIndex !== -1) {
        sheet.getRange(rowIndex + 1, 6).setValue(folderLink); // Update column F (6)
        Logger.log('Assigned link ' + folderLink + ' to row ' + (rowIndex + 1));
      }
    }
  }
}

function mainAssignLink(source_folder, target_folder, students_per_batch,
num_Questions) {
  /**
   * Driver code for Link Generation for the viewing of the folders
   * To be part of the MAIN Driver Code
   */
```

```
  updateBatchAssignments_2(sheetName);
  generateFolderLinks(sheetName, target_folder);
}


/**
 * Gets the number of questions and labels the columns
 * Populates the question columns with the question number
 */
function setupQuestionsAndPopulate(num_Questions) {
  /**
   * Setup questions and populate columns.
   */
  Logger.log(num_Questions + '4');
  try {
    var spreadsheet = SpreadsheetApp.getActiveSpreadsheet();
    var sheet = spreadsheet.getSheetByName(sheetName);

    var lastColumn = sheet.getLastColumn();
    Logger.log("LAST COLUMN MEIN DIKKAT" + lastColumn);
    var questionsStartColumns = lastColumn + 1;
    Logger.log("QUESTION START COLUMN MEIN DIKKAT " +
questionsStartColumns); // 7
    Logger.log(num_Questions + '5');
    Logger.log('questionsStartColumns' + questionsStartColumns);
    Logger.log('num_Questions' + num_Questions);
    Logger.log('questionsEndColumns' + (questionsStartColumns + (num_Questions -
1)));
    var questionsEndColumns = (questionsStartColumns + (num_Questions - 1));
    Logger.log("QUESTION END COLUMN MEIN DIKKAT" + questionsEndColumns);
// 73
    Logger.log(questionsEndColumns); //73 on putting 4
    for (var i = questionsStartColumns; i <= questionsEndColumns; i++) {
      sheet.getRange(1, i).setValue('Question ' + (i - questionsStartColumns + 1));
    }

    var rollNumbers = sheet.getRange(2, 4, sheet.getLastRow() - 1, 1).getValues();

    for (var j = 0; j < rollNumbers.length; j++) {
```

```
      for (var k = questionsStartColumns; k <= questionsEndColumns; k++) {
        sheet.getRange(j + 2, k).setValue('Q' + (k - questionsStartColumns + 1)); // Write question numbers under each question label
      }
    }
    Logger.log(num_Questions + '6');
    Logger.log('Successfully set up ' + num_Questions + ' questions and populated the columns with question numbers.');
  } catch (e) {
    Logger.log('Error in setting up questions and populating columns: ' + e.toString());
  }
}

function vaibhav() {
  setupQuestionsAndPopulate(4);
}

function mainSetupQuestions(num_Questions) {
  /**
   * Driver code for writing the number of questions
   * To be a part of the MAIN Driver Code
   */
  Logger.log(num_Questions + '3');
  setupQuestionsAndPopulate(num_Questions);
}



/**
 * Making the new spreadsheet for each student
 * Tracking the link for those sheets in the Last Column of the sheet
 * The sheet is made in the target folder identified by @target_folder
 *
 * Sheet Protection and access is properly set up
 * Only the intended cells can be edited by the user
 */
function createStudentWorkbooks(source_folder, target_folder, students_per_batch, num_Questions) {
  /**
   * The code iterates through the Unique IDs and makes workbooks for them to
   *  evaluate the peers.
```

```
 *
 * Once it runs, it makes the workbooks in the target folder identified by
 *  @target_folder in the global variables.
 *
 * It puts the links of the workbooks for the respective workbook in the last
 *  column of the sheet identifies by the @sheetName variable
 *
 * It then gives access only to the respective student and nobody else.
 *
 * To be a part of the MAIN Driver Code
 */

var mainWorkbook = SpreadsheetApp.getActiveSpreadsheet();
var sheet = mainWorkbook.getSheetByName(sheetName);

if (!sheet) {
  Logger.log('Sheet not found.');
  return;
}

var data = sheet.getDataRange().getValues();
var folder = DriveApp.getFolderById(target_folder);

sheet.getRange(1, data[0].length + 1).setValue("Spreadsheet Link");


for (var i = 1; i < data.length; i++) { // Start from 1 to skip the header row
  var name = data[i][0]; // Column A
  var email = data[i][1]; // Column B
  var uniqueID = data[i][2]; // Column C
  var folderName = data[i][4]; // Column E

  Logger.log(uniqueID);
  // Create a new workbook for the student
  var studentWorkbook = SpreadsheetApp.create(name);
  var studentSheet = studentWorkbook.getActiveSheet();

  // Write the name and unique ID
  studentSheet.getRange('A1').setValue(name);
  studentSheet.getRange('A2').setValue(uniqueID);
```

```
// Write the question numbers
for (var q = 1; q <= num_Questions; q++) {
  studentSheet.getRange(2, q + 1).setValue('Question ' + q);
}

// Get all unique IDs in column D that have the specified folder name in column E
var uniqueIDsWithFolder = [];
for (var j = 1; j < data.length; j++) {
  if (data[j][3] == folderName) {
    uniqueIDsWithFolder.push(data[j][2]); // Column C
  }
}

// Write these unique IDs in column A of the student sheet
for (var k = 0; k < uniqueIDsWithFolder.length; k++) {
  studentSheet.getRange(k + 3, 1).setValue(uniqueIDsWithFolder[k]);
}

// Protect the student sheet
var protection = studentSheet.protect().setDescription('Protected Sheet');
protection.removeEditors(protection.getEditors()); // Remove all editors
protection.addEditor(email);

// Protect specific ranges (Column A and rows 1 and 2)
protectRange(studentSheet.getRange('A:A'));
protectRange(studentSheet.getRange('1:1'));
protectRange(studentSheet.getRange('2:2'));
var lastRow = studentSheet.getLastRow();
var nextRow = lastRow + 1;
protectRange(studentSheet.getRange(nextRow + ':' + nextRow));

var lastColumn = studentSheet.getLastColumn();
var nextColumn = lastColumn + 1;
protectRange(studentSheet.getRange(nextColumn + ':' + nextColumn));


// Move the student workbook to the specified folder
var studentFile = DriveApp.getFileById(studentWorkbook.getId());
folder.addFile(studentFile);
```

```
    DriveApp.getRootFolder().removeFile(studentFile);

    // Generate the edit link for the student workbook
    var editLink = studentWorkbook.getUrl();

    // Add the edit link to the main sheet in the corresponding row and last column
    sheet.getRange(i + 1, data[0].length + 1).setValue(editLink); // Assuming data[0]
contains headers

    // Share the student workbook with the student email
    studentWorkbook.addEditor(email);
  }

  Logger.log('Student workbooks created and permissions assigned.');

}

function protectRange(range) {
  /**
   * This function is made to protect the cells
   * Used by createStudentWorkbooks() to protect
   *  the sheets before sending them to the students
   *
   * @param {string} range - The range of the cells that are to be protected
   * Prevents the editing of the cells.
   */

  var protection = range.protect().setDescription('Protected Range');
  protection.removeEditors(protection.getEditors()); // Remove all editors
  protection.setWarningOnly(false); // Prevent editing
}


/**
 * The Final Driver Code MAIN
 * All Functionalities are to be called from this code
 */
function mainPreEval(source_folder, target_folder, students_per_batch, num_Questions)
{
```

```
  Logger.log('Starting mainProcess...');
  Logger.log(num_Questions + '1');

  //Moving the files to the target folder
  try {
    Logger.log('Moving files in batches to the target folder...');
    moveFilesInBatches(source_folder, target_folder, students_per_batch,
num_Questions);
    Logger.log('Files moved successfully.');
  } catch (e) {
    Logger.log('Error moving files: ' + e.toString());
    return;
  }

  // Mapping the students to their folders
  try {
    Logger.log('Updating spreadsheet with folder names...');
    mainAssign(source_folder, target_folder, students_per_batch, num_Questions);
    Logger.log('Spreadsheet updated with folder names successfully.');
  } catch (e) {
    Logger.log('Error updating spreadsheet with folder names: ' + e.toString());
    return;
  }

  // Assigning the folder for the students to evaluate
  try {
    Logger.log('Assigning peer evaluation groups...');
    mainAssignBatch(source_folder, target_folder, students_per_batch, num_Questions);
    Logger.log('Peer evaluation groups assigned successfully.');
  } catch (e) {
    Logger.log('Error assigning peer evaluation groups: ' + e.toString());
    return;
  }

  // Genrating view-only links for the folder for the student evaluation
  try {
    Logger.log('Generating view-only links for assigned folders...');
    mainAssignLink(source_folder, target_folder, students_per_batch, num_Questions);
    Logger.log('View-only links generated successfully.');
  } catch (e) {
```

```
    Logger.log('Error generating view-only links: ' + e.toString());
    return;
  }

  // Question labelling in the Main Sheet
  try {
    Logger.log("Starting to Setup the question labelling");
    Logger.log(num_Questions + '2');
    mainSetupQuestions(num_Questions);
    Logger.log("Successfully labelled the questions for each student");
  } catch (e) {
    Logger.log("Error in labelling the question columns. Error Code: " + e.toString());
    return;
  }

  // Making the workbook for student evaluation
  try {
    Logger.log("Starting to make the workbooks, making links and writing them in the
sheet");
    createStudentWorkbooks(source_folder, target_folder, students_per_batch,
num_Questions);
    Logger.log("Completed making workbooks and tracking links successfully!");
  } catch (e) {
    Logger.log("Error in making the workbooks for evaluation. Error Code: " +
e.toString());
    return;
  }

  Logger.log('mainProcess completed successfully.');
}

function driverCheck(){
  var source = '1h_Cd93RHXYMvjF2L5G5D70z7x25r6yqb';
  var target = '14Uu6G4frYSj9dWcE7Ww28NoBDz2dyTPU';
  var student = 2;
  var questions = 5;
  mainPreEval(source, target, student, questions);
}
```

4. **Button.gs -**

```
function onOpen() {
  /**
   * Making the buttons
   *
   * When copied and pasted  for replication of the sheet
   * Just run this function to make everything.
   */
  var ui = SpreadsheetApp.getUi();
  ui.createMenu('Peer Evaluation')
    .addItem('Pre Evaluation', 'runMainPreEval')
    .addItem('Check Evaluation\'s Pending', 'runCheckEval')
    .addItem('Post Evaluation', 'runMainPostEval')
    .addItem('Send Marks','runSendMail')
    .addItem('Send Cumulative Marks', 'runCumulativeMarks')
    .addToUi();
}

var source_folder = "1fT-inciLQut85BGEQrjMSWbVRcTsdWfQ";
var target_folder = "1l4z7x3Twah6Qd8LQUepZHvmR0tYlY5cj";
var students_per_batch = countStudentsPerBatch();
//var students_per_batch = 2;
var num_Questions = 1;

function countStudentsPerBatch() {
  var folderId = source_folder;  // Replace with your folder's ID
  var folder = DriveApp.getFolderById(folderId);  // Get the folder by ID
  var files = folder.getFiles();  // Get all files in the folder

  var fileCount = 0;
  var students_per_batch = 0;

  while (files.hasNext()) {
    files.next();
    fileCount++;
  }

  students_per_batch = Math.floor(Math.sqrt(fileCount));
```

```
  // Log or return the count of files
  Logger.log('Students per Batch are: ' + students_per_batch);

  return students_per_batch;

}

/*
function doPost(e) {
  var data = JSON.parse(e.postData.contents); // Get JSON data from the POST request
  var numQuestions = data.num_Questions; // Get the `num_Questions` parameter

  // Example: Log the number of questions or use it as needed
  Logger.log("Number of questions: " + numQuestions);

  // Now you can use `numQuestions` in your Google Apps Script logic
  // For example, save it to a Google Sheet, or perform any operation.

  // Return a success message
  return ContentService.createTextOutput("Received " + numQuestions + " questions.")
    .setMimeType(ContentService.MimeType.TEXT);
}
*/

function doGet(e) {
  var action = e.parameter.action;  // Get the 'action' parameter from the URL
  if (action == "PreEval")
  {
    return runMainPreEval();
  }
  else if (action == "CheckEval")
  {
    return runCheckEval();
  }
  else if (action == "PostEval")
  {
    return runMainPostEval();
  }
  else if (action == "GenChart")
  {
```

```
    return generateCharts();
  }
  else if (action == "SendMail")
  {
    return runSendMail();
  }
  else if (action == "SendFinalM")
  {
    return runCumulativeMarks();
  }
  else
  {
    return ContentService.createTextOutput("Invalid function call.");
  }
}

function runMainPreEval() {
  // Calling the mainPreEval to run all the necessary functions

  mainPreEval(source_folder, target_folder, students_per_batch, num_Questions);
}

function runCheckEval(){
  //Call the function from Eval Check.gs to check for the peer's who don't evaluated the
sheets yet
  evalMarksInSheets();
  emailPeerPendingEval();
}

function runMainPostEval() {
  // Calling the mainPreEval to run all the necessary functions
  mainPostEval(num_Questions);
}

function runSendMail(){
  //Call the function from Mail.gs to send the final mark's of each student
  sendMailToAllStudents();
}

function runCumulativeMarks(){
```

```
  //Call the function from Final Marks.gs to the send the cumulative marks of each student
  sendFinalMarksToAllStudents();
}
```