Rock paper Scissors (RPS) using AI

Human Vs Machine

—

By : John Benniel. M

Outline

Introduction

Overview

Technologies and Requirements

Data Flow Diagram

Table Design

Snapshot and Explanation

Conclusion

Introduction

Introduction

AI is also known as Artificial Intelligence which we are using to train the images that we have captured for playing the game using **TensorFlow.js** library. Then when we play with Machine, it will play against you and update score in the scoreboard.

Overview

Overview

In this project we will be playing with a machine which is trained using AI for image processing, as the game will be played using the webcam and it will try to predict our hand gesture and play along.

First we need to train our hand gesture images as rock, paper and scissors and then input that trained images into our project and get going.

Technologies and Requirements

Technologies and Requirements

Framework: Django

Front-End: HTML, CSS, JavaScript

Back-End: Python, TensorFlow.js, PostgreSql

Data Flow Diagram

Level 0

Level 1

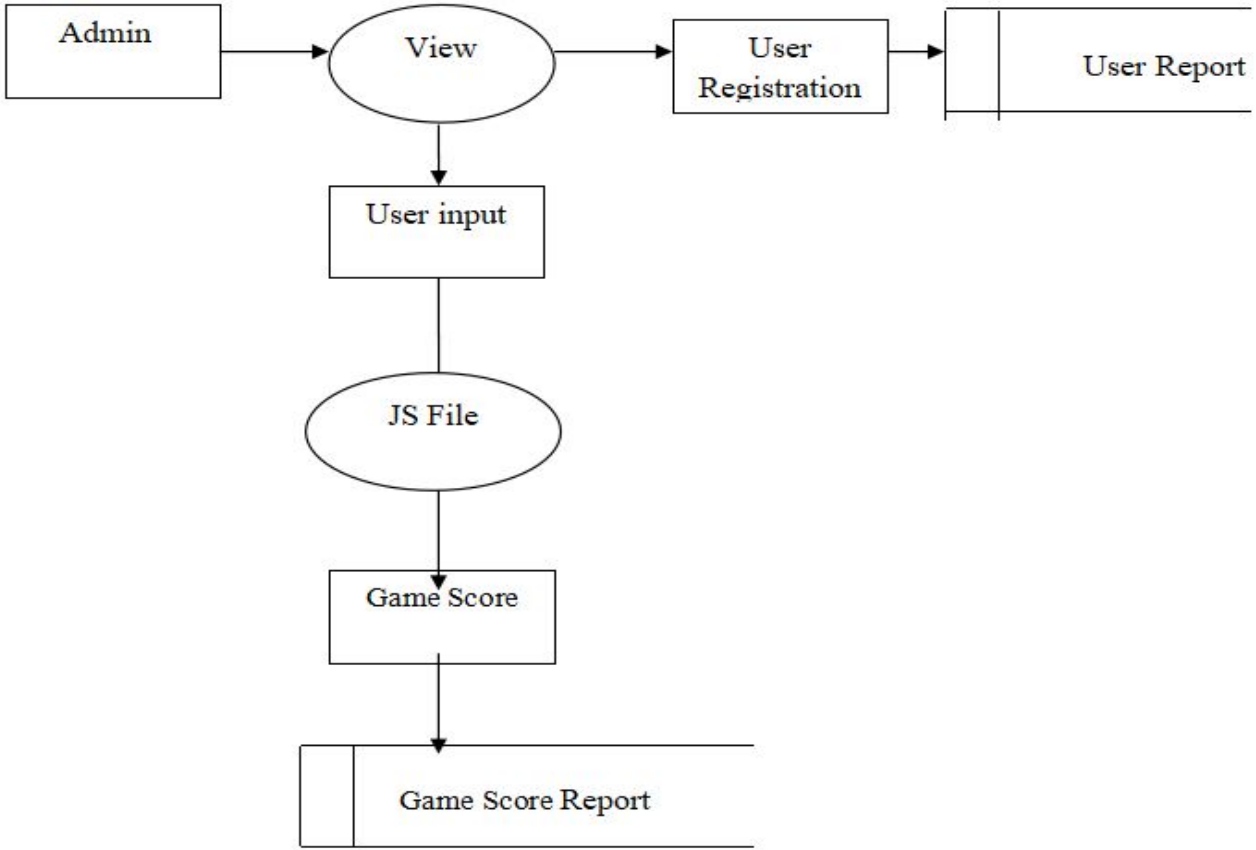

Admin
View
User Registration
User Report
User input
JS File
Game Score
Game Score Report

Table Design

Table Name: UserRegistration_Details

Primary Key: UID

Description: This table is used to store User Registration Details

Field Name	Data Type	Size	Description
UID	varchar	20	User Identification
FName	varchar	20	First Name
LName	varchar	20	Last Name
Upwd	varchar	20	User Password
LLogindate	date	10	Last Login Date

Table Name: Account_Details

Primary Key: UID

Description: This table is used to store Account Details

Field Name	Data Type	Size	Description
UID	varchar	20	User Identification
Upwd	varchar	20	User Password

Table Name: Result_Details

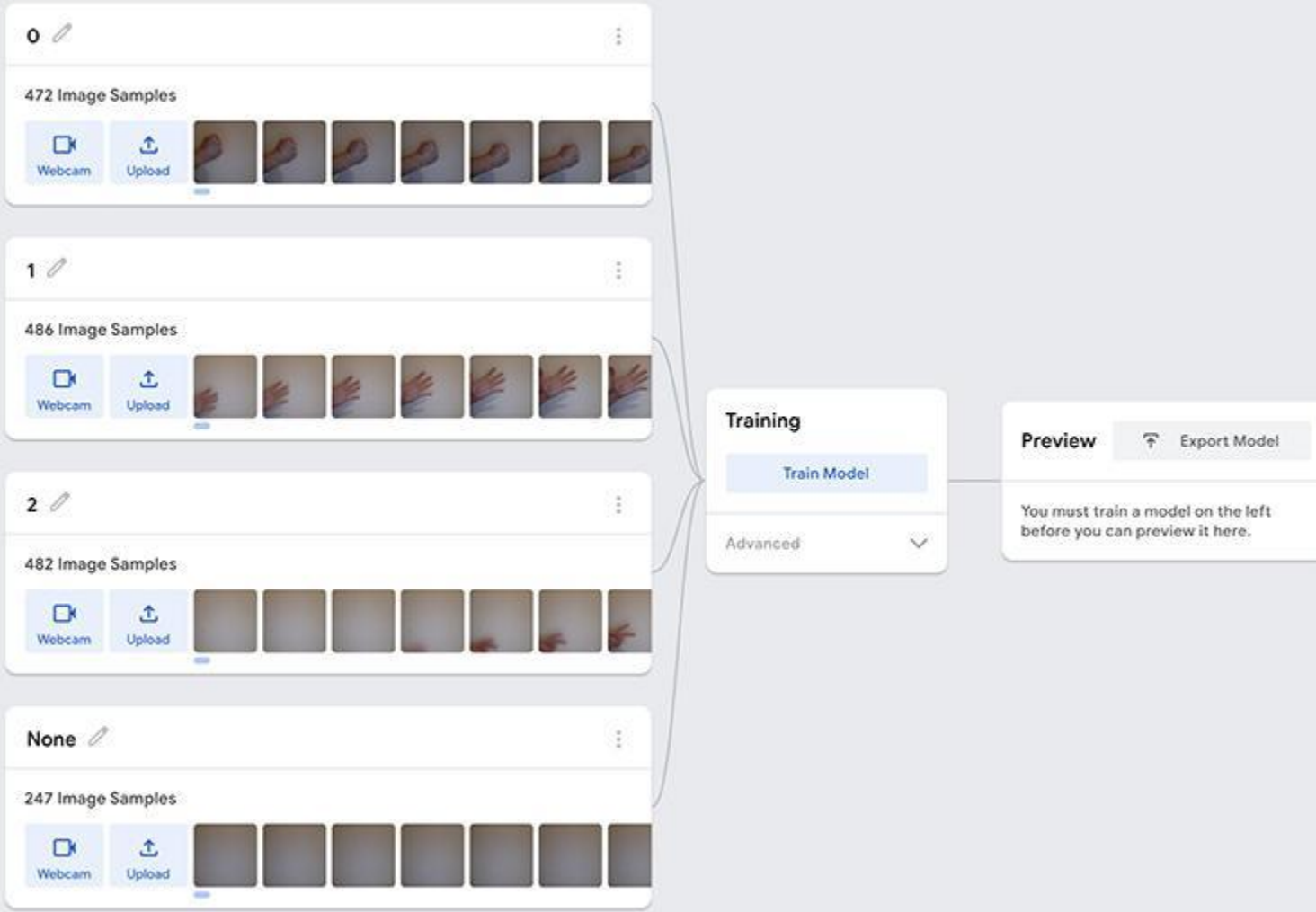
Primary Key: RID

Foreign Key: UID

Description: This table is used to store Result Details

Field Name	Data Type	Size	Description
RID	varchar	20	Result Identification
UID	varchar	20	User Identification
GScore	int	5	Game Score

Snapshot and Explanation


0
472 Image Samples
Webcam
Upload
1
486 Image Samples
Webcam
Upload
2
482 Image Samples
Webcam
Upload
None
247 Image Samples
Webcam
Upload
Training
Train Model
Advanced
Preview
Export Model
You must train a model on the left before you can preview it here.

Don't switch tabs!

You must leave this tab open to train your model.

Don't show again OK

Training

Training...

00:31 - 28 / 50

Advanced

Teachable Machine | Image Model - Teachable Ma

teachablemachine.withgoogle.com/train/image

Apps

Teachable Machine

Webcam Upload

Scissors

119 Image Samples

Webcam Upload

None

108 Image Samples

Webcam Upload

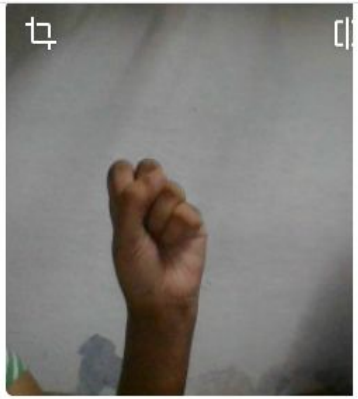
Training

Model Trained

Advanced

Preview

Export Model



Output

Rock 100%

Paper

Sciss...

None

English (U.S.)

release-2-3-1 - 2.3.1#3c7749 - 99

Teachable Machine | Image Model - Teachable Ma

teachablemachine.withgoogle.com/train/image

Apps

Teachable Machine

Webcam Upload

Scissors

119 Image Samples

Webcam Upload

None

108 Image Samples

Webcam Upload

Training

Model Trained

Advanced

Preview

Export Model

Output

Rock

Paper

Sciss... 94%

None

English (U.S.)

release-2-3-1 - 2.3.1#3c7749 - 99

Teachable Machine | Image Model - Teachable Ma

teachablemachine.withgoogle.com/train/image

Apps

Teachable Machine

Webcam Upload

Scissors

119 Image Samples

Webcam Upload

None

108 Image Samples

Webcam Upload

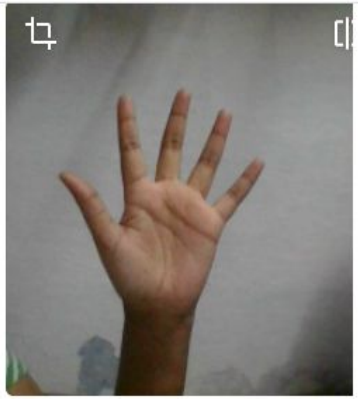
Training

Model Trained

Advanced

Preview

Export Model



Output

Rock

Paper 100%

Sciss...

None

English (U.S.)

release-2-3-1 - 2.3.1#3c7749 - 99

Teachable Machine | Image Model - Teachable Ma

teachablemachine.withgoogle.com/train/image

Apps

Teachable Machine

Webcam Upload

Scissors

119 Image Samples

Webcam Upload

None

108 Image Samples

Webcam Upload

Training

Model Trained

Advanced

Preview

Export Model

Output

Rock

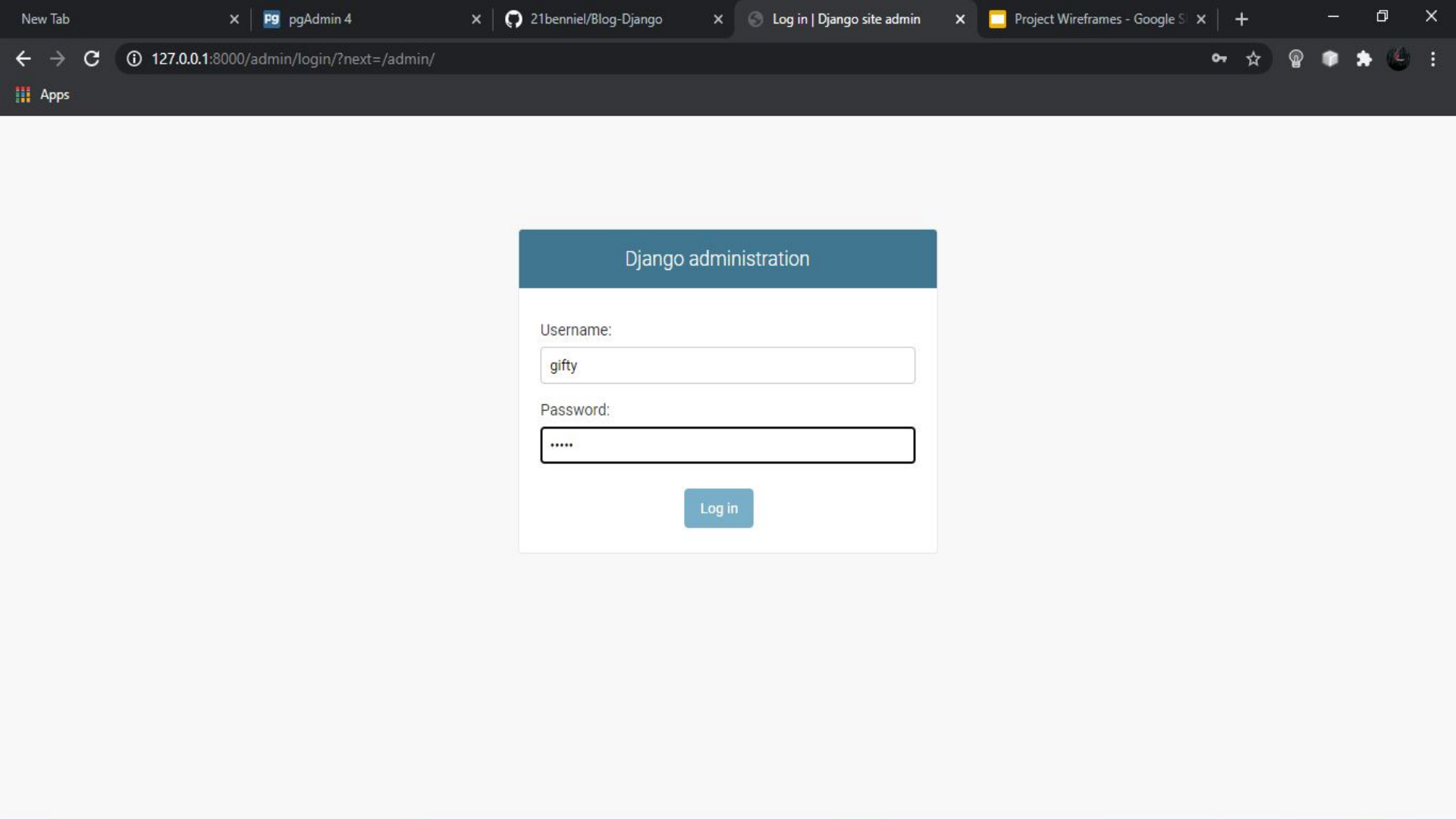
Paper

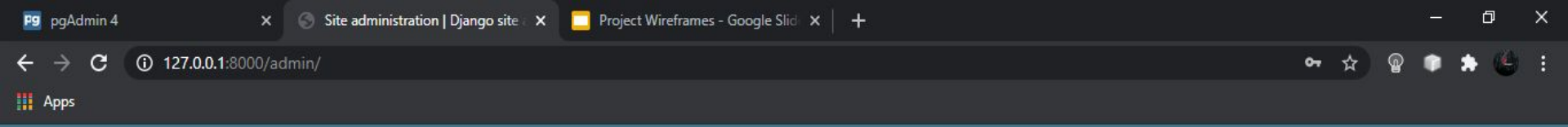
Sciss...

None 100%

English (U.S.)

release-2-3-1 - 2.3.1#3c7749 - 99


New Tab
pgAdmin 4
21benniel/Blog-Django
Log in | Django site admin
Project Wireframes - Google S
127.0.0.1:8000/admin/login/?next=/admin/
Apps
Django administration
Username:
gifty
Password:
Log in



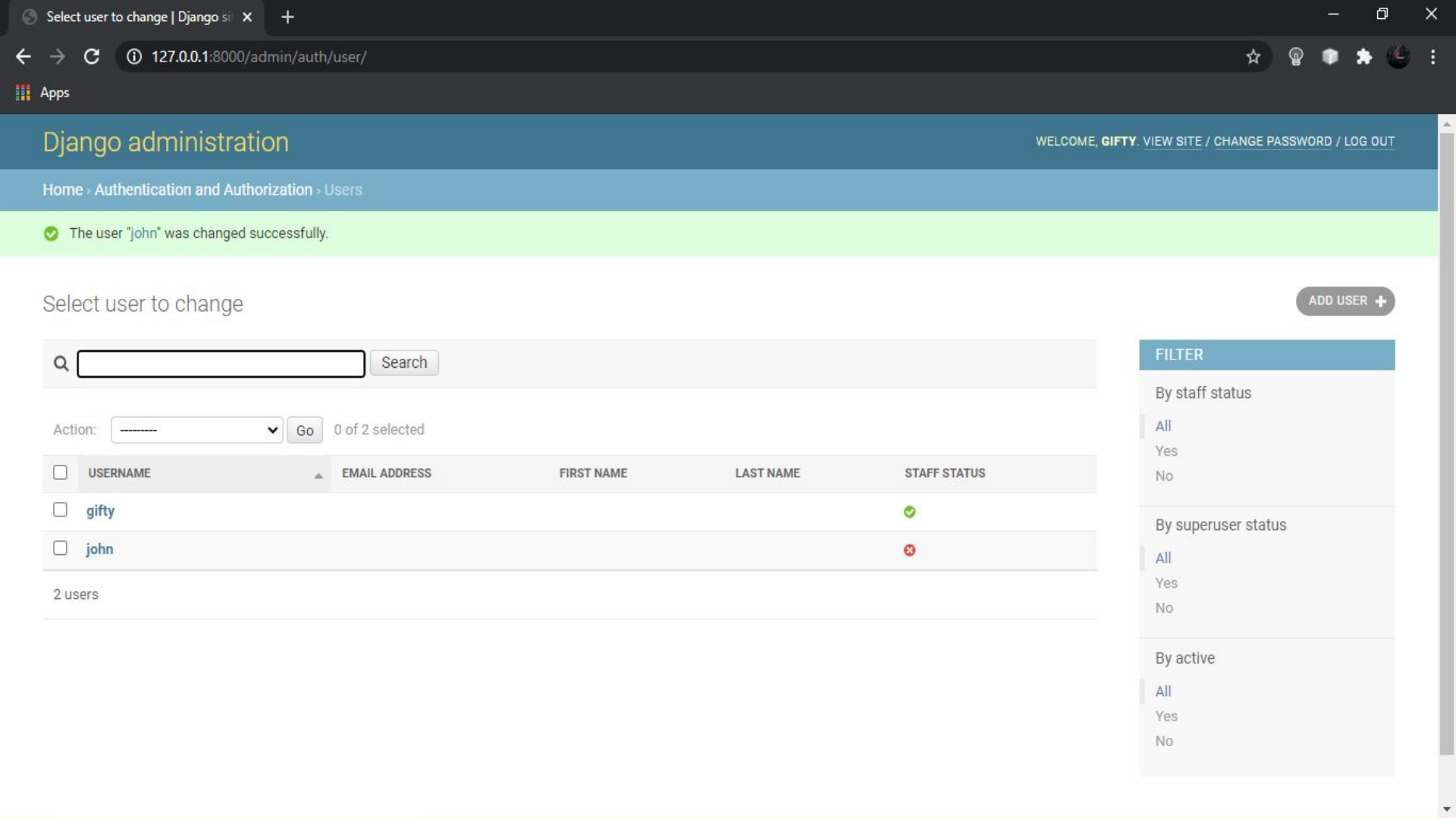
Django administration

Site administration

AUTHENTICATION AND AUTHORIZATION		
Users	+ Add	Change

MARKETING		
Signups	+ Add	Change

POSTS		
Authors	+ Add	Change
Categorys	+ Add	Change
Comments	+ Add	Change
Post views	+ Add	Change
Posts	+ Add	Change


Select user to change | Django si
127.0.0.1:8000/admin/auth/user/
Apps
Django administration
WELCOME, GIFTY. VIEW SITE / CHANGE PASSWORD / LOG OUT
Home › Authentication and Authorization › Users
The user "john" was changed successfully.
Select user to change
ADD USER +
Search
Action: -------- Go 0 of 2 selected
USERNAME
EMAIL ADDRESS
FIRST NAME
LAST NAME
STAFF STATUS
gifty
john
2 users
FILTER
By staff status
All
Yes
No
By superuser status
All
Yes
No
By active
All
Yes
No

Teachable Machine | Image Model - Teachable Ma | something.html | Rock Paper Scissors with Goo

File | E:/WebTool/tm/Rock-Paper-Scissors-with-Google-Teachable-Machine/public/index.html#

Apps

Ready to play
Rock Paper Scissors?

Play Reset

Human score: 0 pts

Robot score: 0 pts

👊 : 0.98

🤚 : 0.00

✌️ : 0.01

none : 0.01

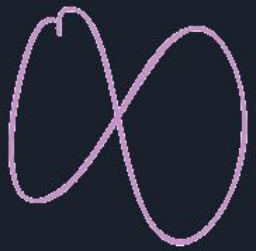
Teachable Machine | Image Model - Teachable Ma | something.html | Rock Paper Scissors with Goo

File | E:/WebTool/tm/Rock-Paper-Scissors-with-Google-Teachable-Machine/public/index.html#

Apps

Human score: 10 pts

Robot score: 20 pts



: 0.00

Teachable Machine | Image Model - Teachable M | something.html | Rock Paper Scissors with Goo

File | E:/WebTool/tm/Rock-Paper-Scissors-with-Google-Teachable-Machine/public/index.html#

Apps

Human score: 10 pts

Robot score: 20 pts

👊 : 0.80

🤚 : 0.00

✌ : 0.20

none : 0.00

Teachable Machine | Image Model - Teachable M | something.html | Rock Paper Scissors with Goo

File | E:/WebTool/tm/Rock-Paper-Scissors-with-Google-Teachable-Machine/public/index.html#

Apps

Human score: 10 pts

Robot score: 10 pts

👊 : 0.00

🤚 : 0.07

✌ : 0.93

none : 0.00

Teachable Machine | Image Model - Teachable Ma | something.html | Rock Paper Scissors with Goo

File | E:/WebTool/tm/Rock-Paper-Scissors-with-Google-Teachable-Machine/public/index.html#

Apps

Human score: 10 pts

Robot score: 0 pts

👊 : 0.00

🤚 : 0.99

✌ : 0.01

none : 0.00

(3) WhatsApp | Final ppt - Google Slides | pgAdmin 4 | current_timestamp in postgres | How to get current timestamp

127.0.0.1:56284/browser/

Apps

pgAdmin File Object Tools Help

Browser

- public
  - Collations
  - Domains
  - FTS Configurations
  - FTS Dictionaries
  - FTS Parsers
  - FTS Templates
  - Foreign Tables
  - Functions
  - Materialized Views
  - Procedures
  - Sequences
  - Tables (2)
    - auth_user
    - rps_reports
  - Trigger Functions
  - Types
  - Views
- users
- Login/Group Roles
- Tablespaces (2)
  - pg_default
  - pg_global

Dashboard | Properties | SQL | Statistics | Dependencies | Dependents | rps/postgres@PostgreSQL 12 *

No limit

rps/postgres@PostgreSQL 12

Query Editor | Query History

Scratch Pad

```
1  select * from UserRegistration_Details
2
```

Data Output | Explain | Messages | Notifications

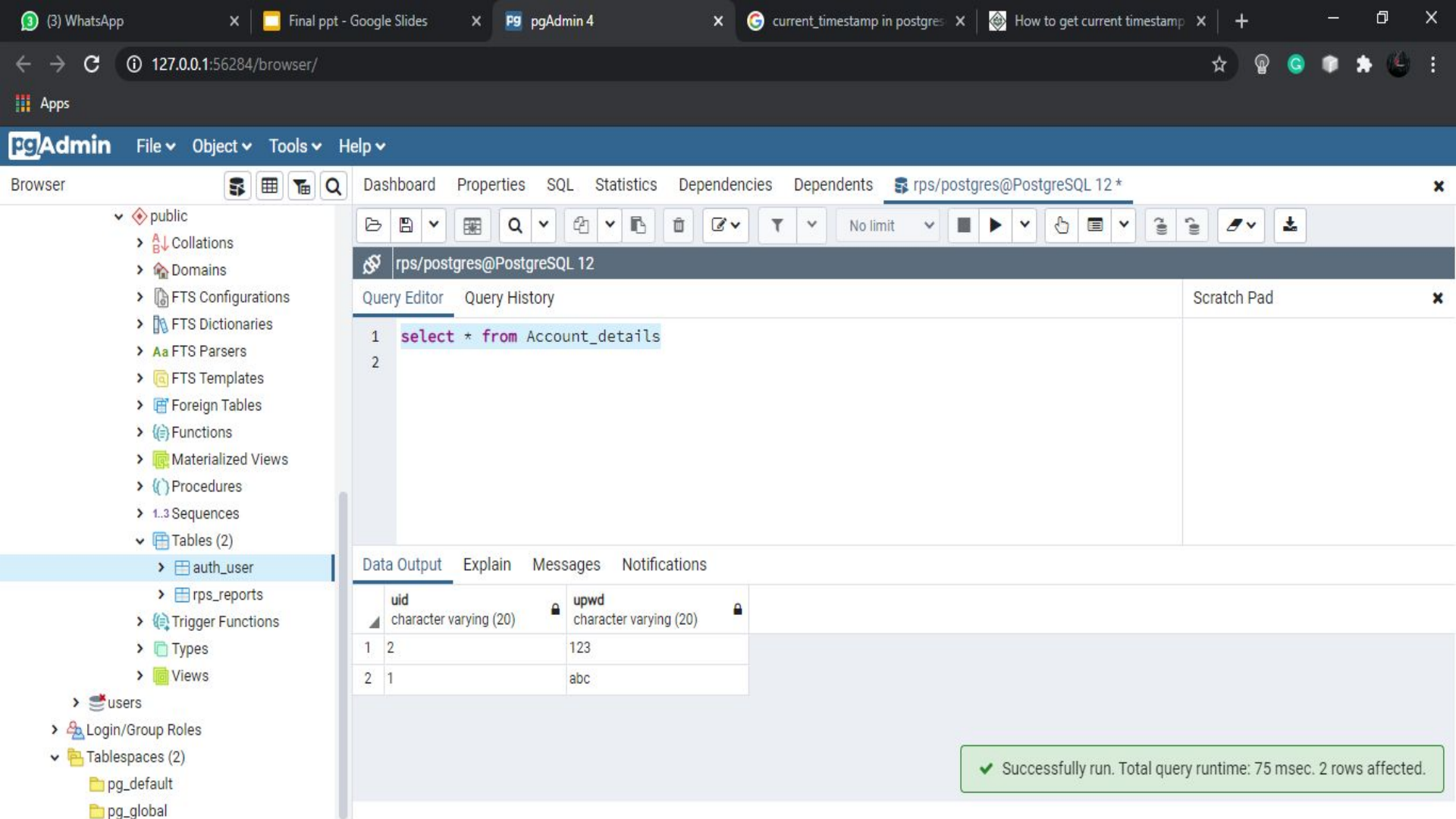
	uid character varying (20)	fname character varying (50)	lname character varying (50)	upwd character varying (20)	llogindate timestamp without time zone
1	1	Gifty	Hilda	abc	2021-04-10 00:00:00
2	2	John	Benniel	123	2021-04-10 12:02:34.437032

Successfully run. Total query runtime: 76 msec. 2 rows affected.

Rock paper Sciss....docx | CompletedCertific....pdf | Show all

Type here to search

ENG IN 12:27 PM 10/4/2021


(3) WhatsApp
Final ppt - Google Slides
pgAdmin 4
current_timestamp in postgres
How to get current timestamp
127.0.0.1:56284/browser/
Apps
pgAdmin
File
Object
Tools
Help
Browser
public
Collations
Domains
FTS Configurations
FTS Dictionaries
FTS Parsers
FTS Templates
Foreign Tables
Functions
Materialized Views
Procedures
Sequences
Tables (2)
auth_user
rps_reports
Trigger Functions
Types
Views
users
Login/Group Roles
Tablespaces (2)
pg_default
pg_global
Dashboard
Properties
SQL
Statistics
Dependencies
Dependents
rps/postgres@PostgreSQL 12 *
No limit
rps/postgres@PostgreSQL 12
Query Editor
Query History
Scratch Pad
1 select * from Account_details
2
Data Output
Explain
Messages
Notifications
uid
character varying (20)
upwd
character varying (20)
1 2 123
2 1 abc
Successfully run. Total query runtime: 75 msec. 2 rows affected.

(3) WhatsApp | Final ppt - Google Slides | pgAdmin 4 | current_timestamp in postgres | How to get current timestamp

127.0.0.1:56284/browser/

Apps

pgAdmin File Object Tools Help

Browser

- public
  - Collations
  - Domains
  - FTS Configurations
  - FTS Dictionaries
  - FTS Parsers
  - FTS Templates
  - Foreign Tables
  - Functions
  - Materialized Views
  - Procedures
  - Sequences
  - Tables (2)
    - auth_user
    - rps_reports
  - Trigger Functions
  - Types
  - Views
- users
- Login/Group Roles
- Tablespaces (2)
  - pg_default
  - pg_global

Dashboard | Properties | SQL | Statistics | Dependencies | Dependents | rps/postgres@PostgreSQL 12 *

No limit

rps/postgres@PostgreSQL 12

Query Editor | Query History

Scratch Pad

```
1  select * from Result_Details
2
```

Data Output | Explain | Messages | Notifications

	rid character varying (20)	uid character varying (20)	gscore integer
1	01	1	50
2	02	2	20

Conclusion

With the ever-increasing use of computer in the concern it is necessary to computerize the activities of the concern. By using this activities the computer reduces the workload of the user, increases the efficiency and the speed of generating outputs. A good amount of user-friendly features have been incorporated in the proposed system. And it is possible for any user to exploit this feature to get the maximum benefit. The programming techniques used to design the system provide a scope for the further expansion and implementation of changes, which may occur in the future.

Thank You