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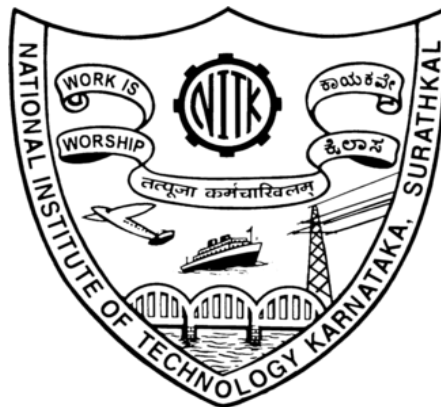
SURATHKAL, MANGALORE- 575025

Report
Of
COMPUTER APPLICATION PROJECT

RURAL EMPLOYMENT

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE

DEGREE OF

MASTER OF COMPUTER APPLICATIONS

DEPARTMENT OF MATHEMATICAL AND COMPUTATIONAL SCIENCES

November 2022

SUBMITTED BY   **SUBMITTED TO**

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DECLARATION

I hereby declare that the project report entitled "**RURAL EMPLOYMENT**" which is being submitted to the National Institute of Technology Karnataka, Surathkal, in partial fulfilment of the requirements for mandatory learning course (MLC) of **Master of Computer Applications** in the department of Mathematical and Computational Sciences, is a bonafide report of the work prepared by us. This material is collected from various sources with utmost care and is based on facts and truth.

[204CA033, 204CA035, 204CA037]

MCA 5th SEM

NITK, SURATHKAL

CERTIFICATE

This is to certify that the P.G. Project report entitled "**RURAL EMPLOYMENT**" submitted by 'Nayan Gupta, Nitesh Malviya, Prathvi Soni' (Roll No: - 204CA033, 204CA035, 204CA037) as the record of the work carried out by them is accepted as the P.G. Project Work Report submission in partial fulfilment of the requirements for the mandatory learning course of **Master of Computer Applications** in the **Department of Mathematical and Computational Sciences.**

Abstract

The Rural Employment generally focus on the process of improving the quality of business and economic well-being of people living in relatively isolated and sparsely populated areas. The main motive behind the project Rural Employment is to enhance one's business or to help one's start-up altogether it is kind helpful to Rural workers. It is basically two interface platform other than the admin panel one interface is for rural employers and other interface is for company or start-up. The platform behaves as an intermediary between the two. We know to start a new business or to enhance a business people hit into many needs.

Many types of products are produced in rural areas only but all the rural product suppliers don't get buyers who can take their products. We have implemented this website which help rural product suppliers to get buyers and also helps needy companies to get different-different varieties of products easily. Instead of selling products like retail system, we have made a system where a company can hire a supplier for a particular product for a fixed time-period according to need. So by this a rural product supplier will get employment for a longer duration. In this project, an attempt has been made to comprehensively understand the development effort to rebuild the structure of rural business products and their suppliers and also helps companies who need rural products supply at a larger level.

CONTENT

List of Figures

CHAPTER 1
INTRODUCTION

The main motive behind the project Rural Employment is to enhance one's business or to help one's start-up altogether it is kind helpful to Rural workers. It is basically two interface platform other than the admin panel one interface is for rural employers and other interface is for company or start-up. The platform behaves as an intermediary between the two. We know to start a new business or to enhance a business people hit into many needs.

For example, if one is contractor and he get a contract to build a university then he will be going to hit into needs - regular supply of cement, bricks, furniture etc or if one is going to start a start- up of coffee house he hit into needs of regular supply of coffee, kulhad etc and we know these things are mainly famous in rural areas so we came up with the idea to make these things easy andbetter. The platform creates a link between supplier and company and provides a way for their interaction.

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CHAPTER 2
SYSTEM ANALYSIS

2.1 EXISTING SYSTEM:

There exists project of rural employment but there is only focus is on rural people employment under somebody business/corporate but not to enhance their business at their own pace. People get employment under some scheme to make them work under some community. There are also different schemes for women employment.

2.2 PROPOSED SYSTEM:

The project Rural Employment is to enhance one's business or to help one's start-up altogether it is kind helpful to Rural workers. It is basically two interface platform other than the admin panel one interface is for rural employers and other interface is for company or start-up. The platform behaves as an intermediary between the two. We know to start a new business or to enhance a business people hit into many needs. if one is contractor and he get a contract to build a university then he will be going to hit into needs - regular supply of cement, bricks, furniture etc or if one is going to start a start-up of coffee house he hit into needs of regular supply of coffee, kulhad etc and we know these things are mainly famous in rural areas so we came up with the idea to make these things easy and better. The platform creates a link between supplier and company and provides a way for their interaction.

In the project they both rural suppliers and company create there profile by registration. Rural Employer can add there products in the profile which can be view by any company. The company can request for any product he needs and the appropriate user , but the agreement is not done until the request is not accepted by the rural employers.

CHAPTER 3

FEASIBILITY STUDY

Whenever we design a new system, normally the management will ask for a feasibility report of the new system. The management wants to know the technicalities and cost involved in creation of new system.

- Technical feasibility
- Economic feasibility
- Physical feasibility

3.1 Technical Feasibility:

Technical feasibility involves study to establish the technical capability of the system being created to accomplish all requirements to the user. The system should be capable of handling the proposed volume of data and provide users and operating environment to increase their efficiency.

For example, system should be capable of handling the proposed volume of data and provide users.

3.2 Economic Feasibility:

Economic feasibility involves study to establish the cost benefit analysis. Money spent on the system must be recorded in the form of benefit from the system. The benefits are of two types:

✓ Tangible benefits:
  - Saving man labour to do tedious tasks saves time.

✓ Intangible benefits:
  - Improves the quality of organization.

CHAPTER 4

REQUIREMENT

4.1 Software Requirements:

- Technology: Python Django

- IDE: Visual studio

- Client-Side Technologies: HTML, CSS, Bootstrap

- Server-Side Technologies: Python

- Data Base Server: SQLite

- Operating System: Microsoft Windows/Linux

4.2 Hardware Requirements:

- Processor: Pentium-III (or) Higher

- Ram: 64MB (or) Higher

- Hard disk: 80GB (or) Higher

CHAPTER 5

SYSTEM DESIGN

Design is the first step in the development phase for any techniques and principles for the purpose of defining a device, a process or system in sufficient detail to permit its physical realization.

Once the software requirements have been analyzed and specified the software design involves three technical activities - design, coding, implementation and testing that are required to build and verify the software.

5.1 UNIFIED MODELLING LANGUAGE DIAGRAM (UML):

- The unified modelling language allows the software engineer to express an analysis model using the modelling notation that is governed by a set of syntactic semantic and pragmatic rules.

- A UML system is represented using five different views that describe the system from distinctly different perspective. Each view is defined by a set of diagrams, which is as follows.

❖ **User Model View**

- This view represents the system from the users perspective.

- The analysis representation describes a usage scenario from the end-users perspective**.**

  UML is specifically constructed through two different domains they are

- UML Analysis modelling, which focuses on the user model and structural model views of the system?

- UML design modelling, which focuses on the behavioral modelling, implementation modelling and environmental model views.
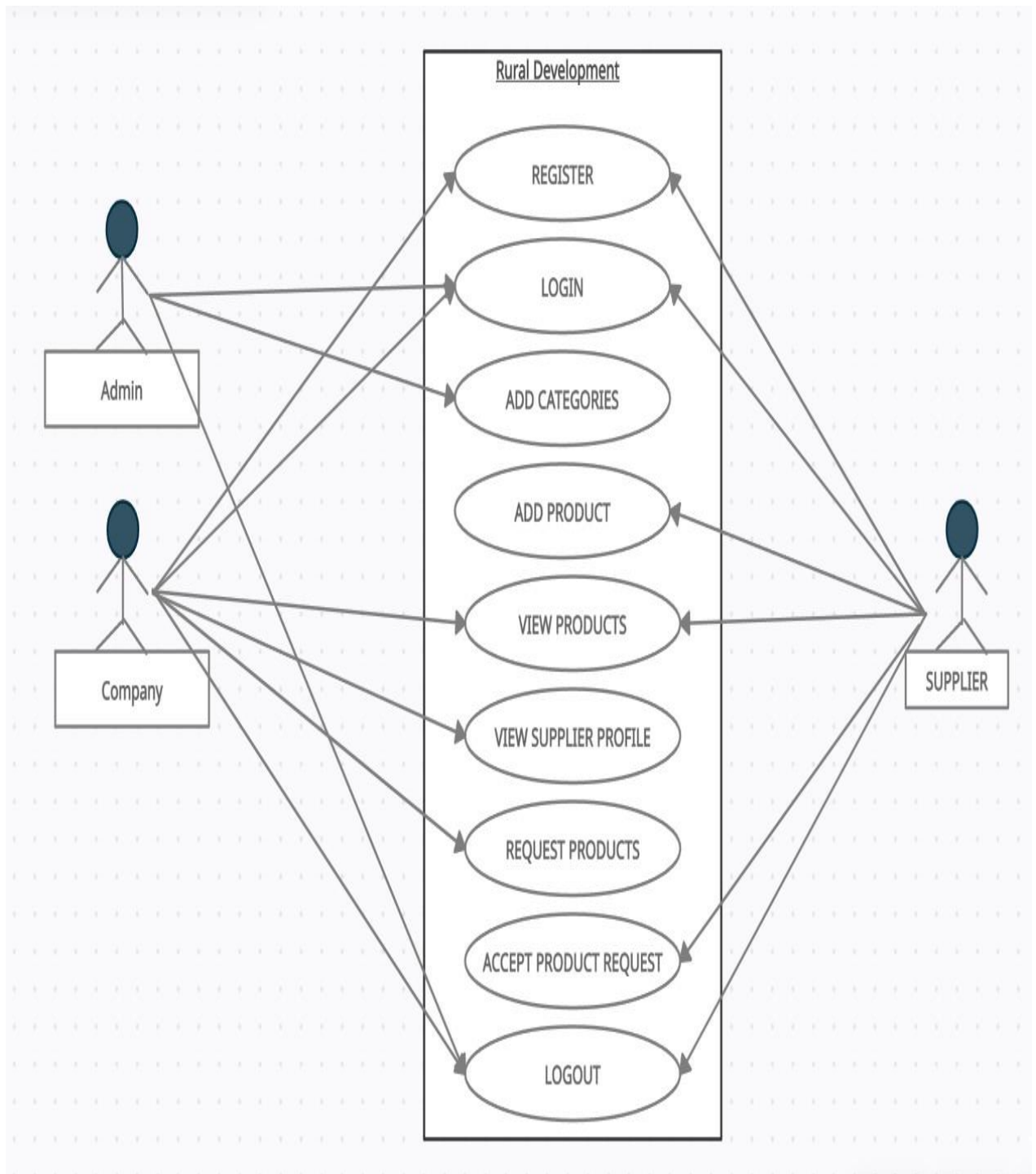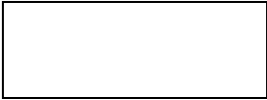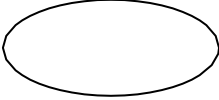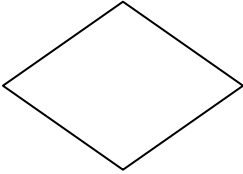
FIGURE 1

5.2 ENTITY-RELATIONSHIP DIAGRAM

E-R (Entity-Relationship) Diagram is used to represents the relationship between   entities in the table.

The symbols used in E-R diagrams are:

SYMBOL	PURPOSE
▭	Represents Entity sets.
⬭	Represent attributes.
◇	Represent Relationship Sets.
——	Line represents flow

Structured analysis is a set of tools and techniques that the analyst.

To develop a new kind of a system:

The traditional approach focuses on the cost benefit and feasibility analysis, Project management, and hardware and software selection a personal consideration.
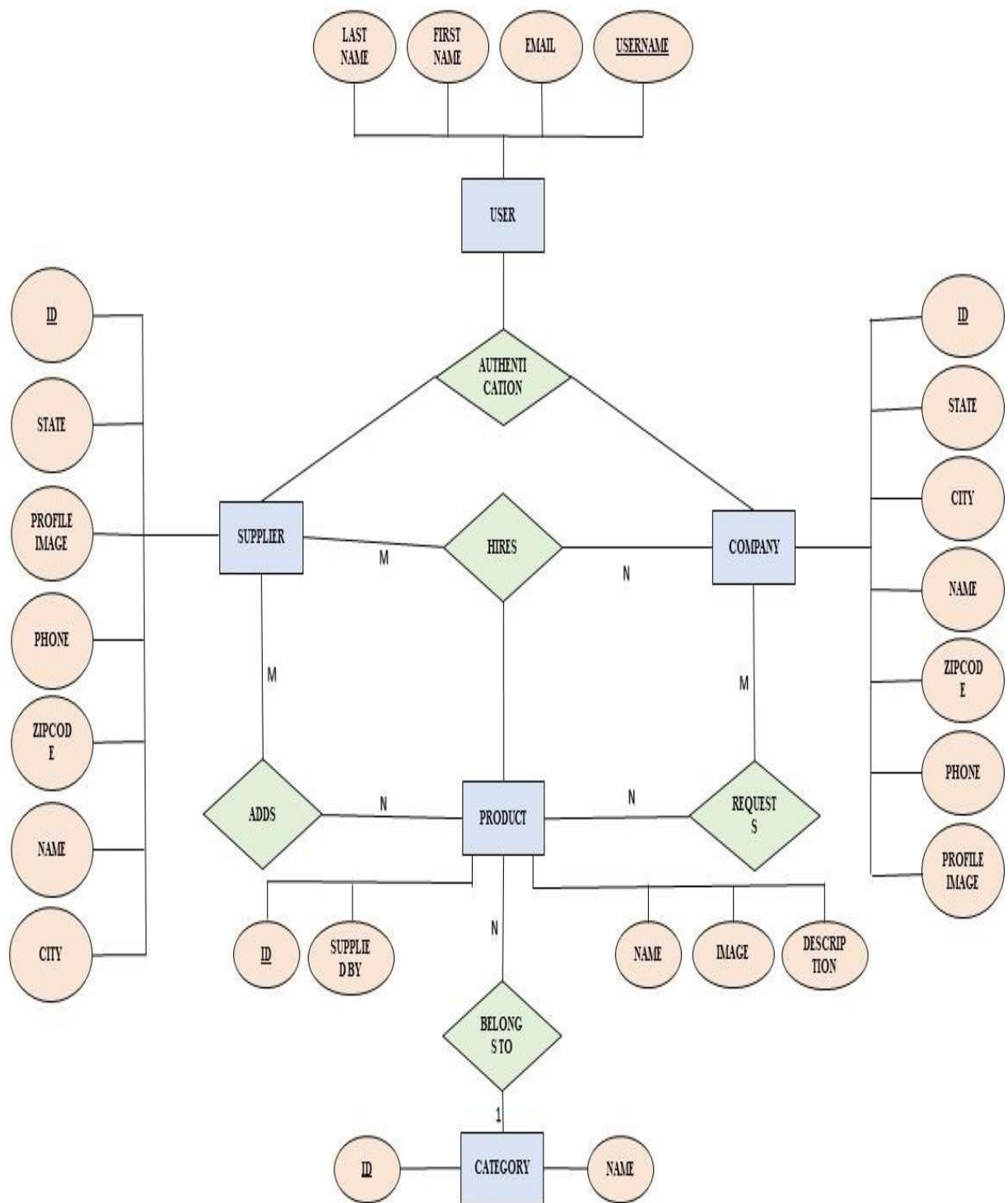
FIGURE 2

5.3 DATA FLOW DIAGRAM

A data flow diagram (DFD) maps out the flow of information for any process or system. It uses defined symbols like rectangles, circles and arrows, plus short text labels, to show data inputs, outputs, storage points and the routes between each destination. Data flowcharts can range from simple, even hand-drawn process overviews, to in-depth, multi-level DFDs that dig progressively deeper into how the data is handled. They can be used to analyze an existing system or model a new one. Like all the best diagrams and charts, a DFD can often visually "say" things that would be hard to explain in words, and they work for both technical and nontechnical audiences, from developer to CEO. That's why DFDs remain so popular after all these years. While they work well for data flow software and systems, they are less applicable nowadays to visualizing interactive, real-time or database-oriented software or systems.
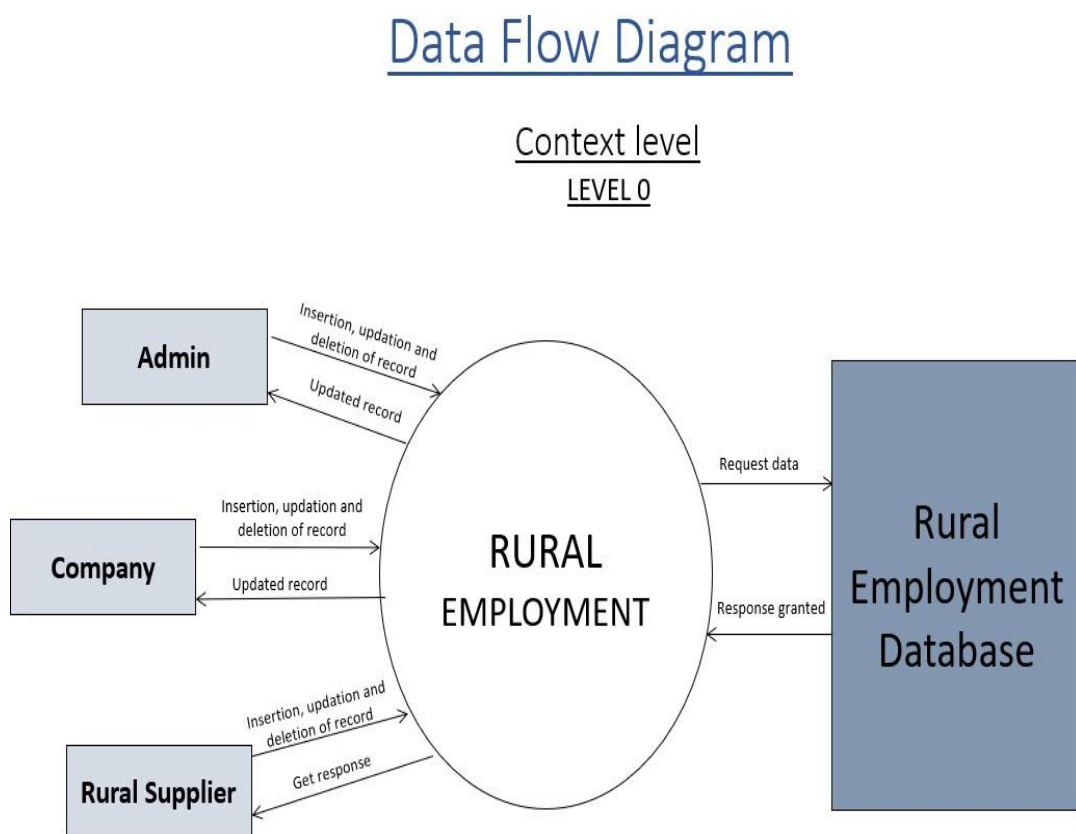
FIGURE 3

LEVEL 1 DFD

Level 1 DFDs are still a general overview, but they go into more detail than a context diagram. In level 1 DFD, **the single process node from the context diagram is broken down into sub-processes**. As these processes are added, the diagram will need additional data flows and data stores to link them together.

❖ **COMPANY LEVEL 1 DFD**
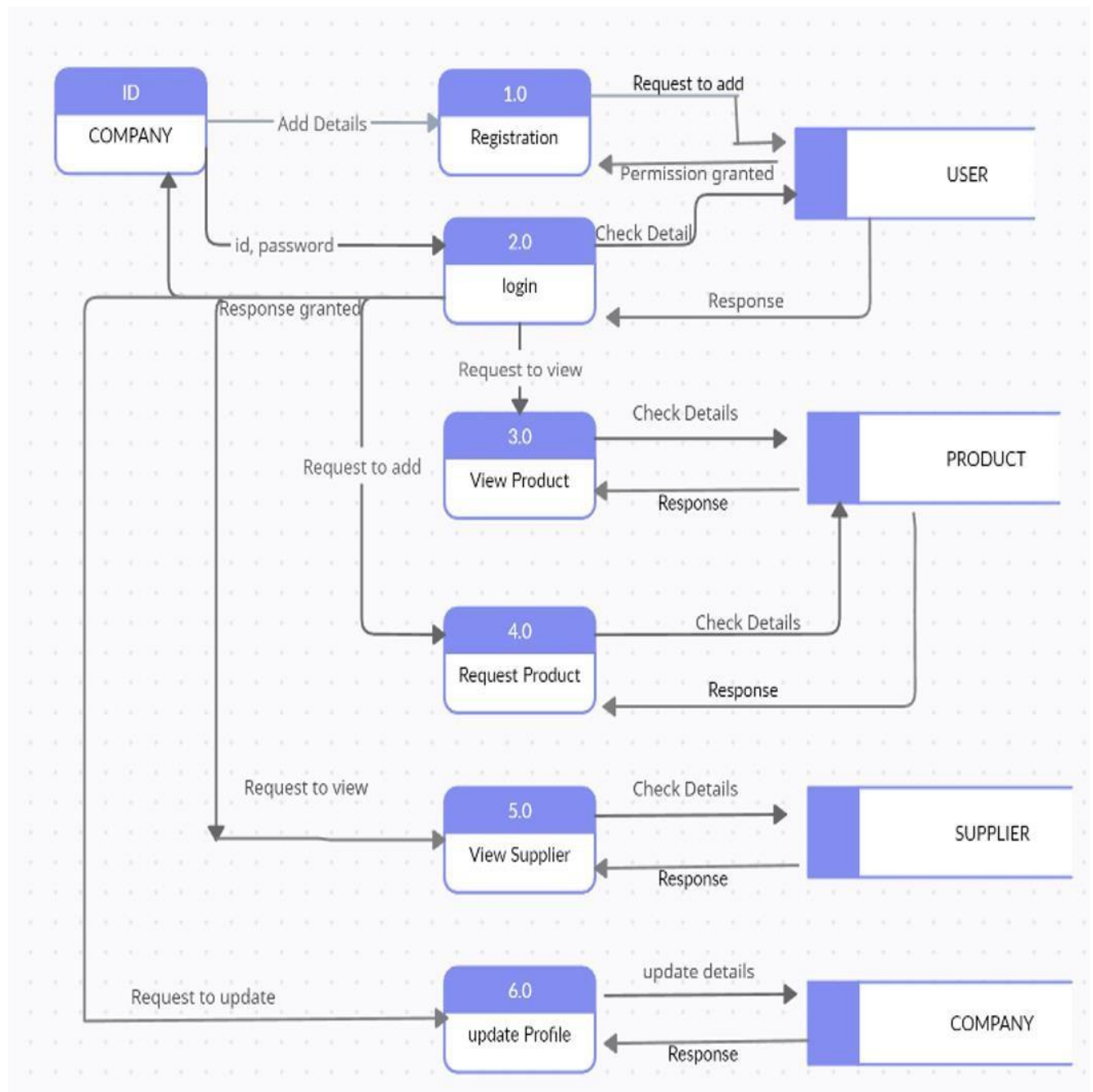
FIGURE 4.1

❖ SUPPLIER LEVEL 1 DFD:
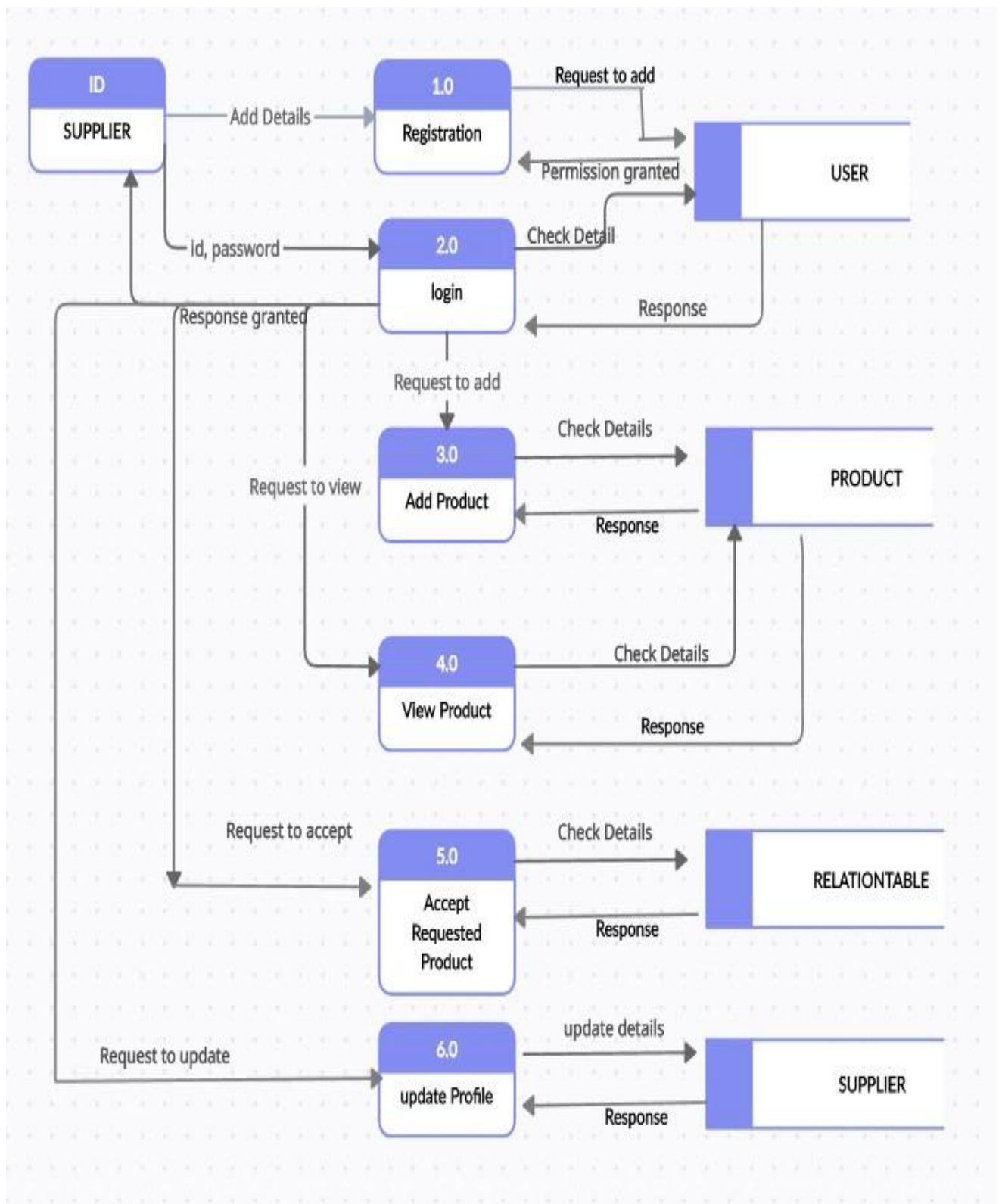
FIGURE 4.2

CHAPTER 6

DATA DICTIONARY

The data in the system has to be stored and retrieved from database. Designing the database is part of system design. Data elements and data structures to be stored have been identified at analysis stage. They are structured and put together to design the data storage and retrieval system.

A database is a collection of interrelated data stored with minimum redundancy to serve many users quickly and efficiently. The general objective is to make database access easy, quick, inexpensive and flexible for the user. Relationships are established between the data items and unnecessary data items are removed. Normalization is done to get an internal consistency of data and to have minimum redundancy and maximum stability. This ensures minimizing data storage required, minimizing chances of data inconsistencies and optimizing for updates. The MySQL database has been chosen for developing the relevant databases.

❖ User table

❖ Supplier table

❖ Company table

❖ Category table

❖ Product table

❖ Relation table

CHAPTER 7

SOFTWARE INTERFACES

❖ **HOME PAGE:**
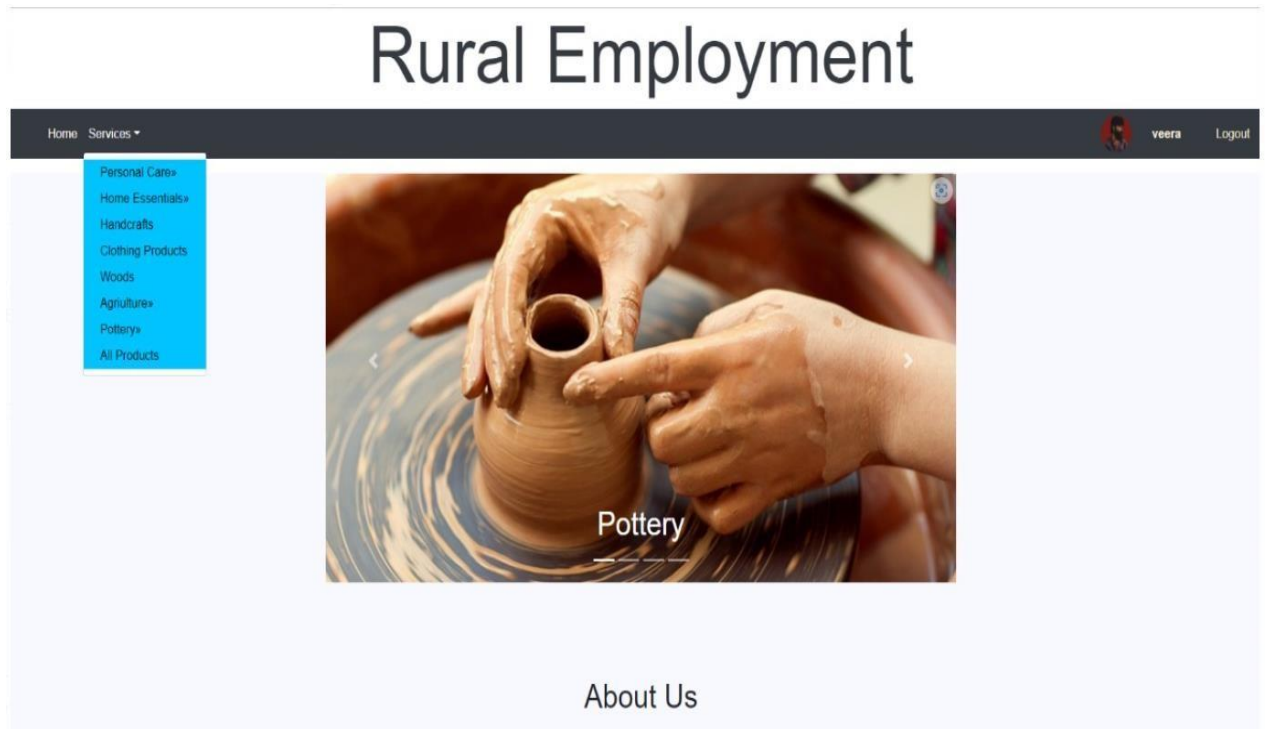
❖ **LOGIN PAGE:**

❖ **REGISTRATION:**

❖ **SUPPLIER PROFILE:**

❖ COMPANY PROFILE:

❖ SUPPLIER PROFLE ON COMPANY SIDE:

❖ PRODUCT LIST:

❖ LIST OF SUPPLIERS:

CHAPTER 8

SOFTWARE TESTING

Software testing is the process of evaluating and verifying that a software product or application does what it is supposed to do. The benefits of testing include preventing bugs, reducing development costs and improving performance.

- **Acceptance testing:** Verifying whether the whole system works as intended.
- **Integration testing:** Ensuring that software components or functions operate together. All the tables connected with specific foreign keys with each other and we know through Django the ACID properties are already into its server to avoid any anomalies/race condition.

  - User table

USERNAME	EMAIL	FIRST NAME	LAST NAME	STAFF STATUS

  - Supplier Table

ID	NAME	CITY	STATE	ZIPCODE

  - Company Table

ID	NAME	CITY	STATE	ZIPCODE

  - Category Table

ID	NAME

  - Product Table

ID	NAME	IMAGE	DESCRIPTION	SUPPLIED BY

  - Relation Table

SUPPLIED BY	PRODUCT SUPPLIED	SUPPLIED TO	APPROVAL

- **Unit testing:** Validating that each software unit performs as expected. A unit is the smallest testable component of an application. Above mentioned all the individual software working efficiently.

- **White Box Testing**
  We guarantees the traversal of all independent paths with all logical decisions and evaluates all the loops.
  - ✓ Basis Path Testing
  - ✓ Control Structure Testing

  We used Control Structure Testing to tests all the individual units
  1. **Conditions Testing:**
     When company send request to supplier then if the status is 'Requested' then only it sets as 'Hired' or if not, it gets removed from database.

SUPPLIEDBY	PRODUCTSUPPLIED	SUPPLIEDTO	APPROVAL
☐ nyn	Tomato	Haldiram	H
☐ veera	Sagwan Woods	comps	R
☐ veera	Bricks	JKB	H
☐ ramprasad	Herbal Kajal	comps	H
☐ ramprasad	Herbal Kajal	MamaEarth	H

5 relationtables

Here R means Requested

SUPPLIEDBY	PRODUCTSUPPLIED	SUPPLIEDTO	APPROVAL
☐ nyn	Tomato	Haldiram	H
☐ veera	Sagwan Woods	comps	H
☐ veera	Bricks	JKB	H
☐ ramprasad	Herbal Kajal	comps	H
☐ ramprasad	Herbal Kajal	MamaEarth	H

5 relationtables

Here H means Hired

2. Data Flow Testing

In the below tables all the operations are tested through unit testing and also with integration testing.

User table

USERNAME	EMAIL	FIRST NAME	LAST NAME	STAFF STATUS

Supplier Table

ID	NAME	CITY	STATE	ZIPCODE

Company Table

ID	NAME	CITY	STATE	ZIPCODE

Category Table

ID	NAME

Product Table

ID	NAME	IMAGE	DESCRIPTION	SUPPLIED BY

Relation Table

SUPPLIED BY	PRODUCT SUPPLIED	SUPPLIED TO	APPROVAL

3. Loop Testing

Simple loop testing:
As there are many products with same name which is supplied by different supplier but we want only one name on the screen under which its supplier list will generate.
**Code**

```
445    def handcrafts(request):
446        ew=product.objects.filter(category=11)
447        l=[]
448        for t in ew:
449            if t.name not in l:
450                l.append(t.name)
451        newew=[]
452        for t in ew:
453            if t.name in  l:
454                newew.append(t)
455                l.remove(t.name)
456        image=helper(request)
457        return render(request,"handcrafts.html",{'data':newew,'profileimage':image})
458
```

☐	96	Kulhad	product/kulhad_Ee4FYQG.jpg	A kulhad, sometimes called a shikora, is a traditional handle-less clay cup from South Asia that is typically unpainted and unglazed, and meant to be disposable.	veera
☐	95	Art on Pottery	product/pottrrryy-.jpg	Porcelain is a ceramic material, which is made by heating kaolin and other constituent materials (i.e., clays, feldspar or flint, and silica) in a kiln to very high temperatures, varying between 1200°C and 1400°C.	ramprasad
☐	94	Handcrafts items	product/handcratft.jpg	A handicraft, sometimes more precisely expressed as artisanal handicraft or handmade, is any of a wide variety of types of work where useful and decorative objects are made completely by one's hand or by using only simple.	hari
☐	93	woolen sitting aasan	product/aasan.jpg	This contempory woollen aasan is produced by skilled handemade weavers.This Woollen Aasan is superior quality product.	praathvi
☐	92	dining items	product/stoneware.jpg	We make all the stoneware items related to dining.	nyn
☐	91	Bricks	product/bricks.png	A brick is a type of block used to build walls, pavements and other elements in masonry construction.	veera
☐	90	Kulhad	product/kulhad_zvBTH3x.jpg	A kulhar (Hindi: कुल्हड़) or kulhad, sometimes called a shikora, is a traditional handle-less clay cup from South Asia that is typically unpainted and unglazed, and meant to be disposable.	hari

<u>There is same product kulhad but on front end it will show only once</u>
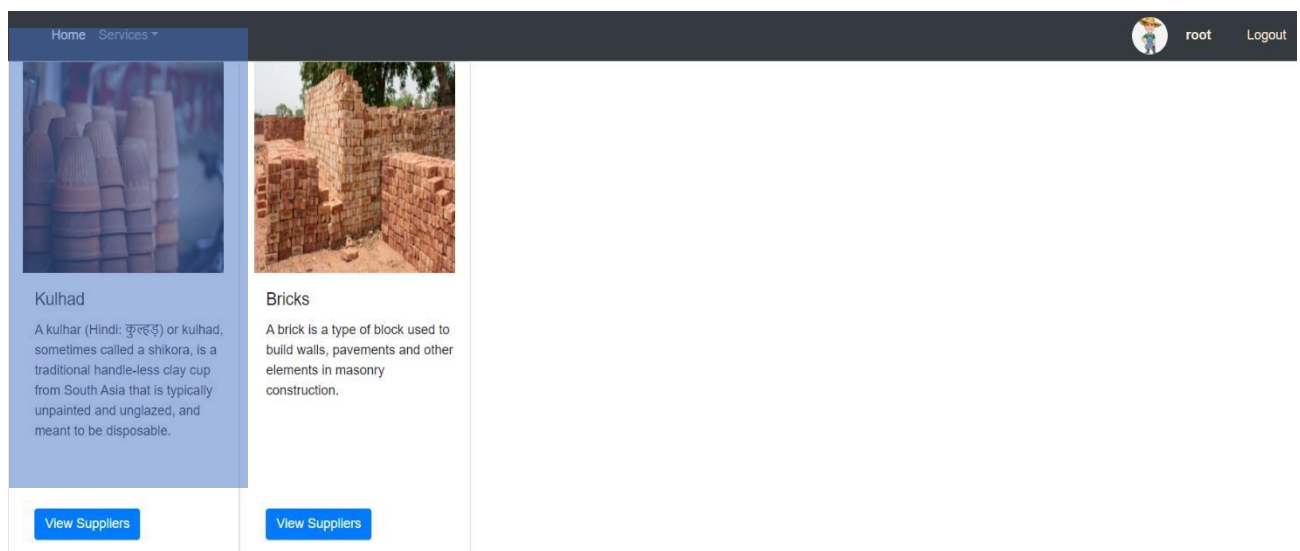
And after that it will work on multiple loop on clicking 'View Supplier'. Show in below screen shot

Rural Employment

Home   Services ▾   root   Logout

List of Suppliers

hari
Kulhad

A kulhar (Hindi: कुल्हड़) or kulhad, sometimes called a shikora, is a traditional handle-less clay cup from South Asia that is typically unpainted and unglazed, and meant to be disposable.

View Profile

veera
Kulhad

A kulhad, sometimes called a shikora, is a traditional handle-less clay cup from South Asia that is typically unpainted and unglazed, and meant to be disposable.

View Profile

CHAPTER 9

CONCLUSION

The project Rural Employment is to enhance one's business or to help one's start-up altogether it is kind helpful to Rural workers. The platform behaves as an intermediary between the two. We know to start a new business or to enhance a business people hit into many needs.

For example, if one is contractor and he get a contract to build a university then he will be going to hit into needs - regular supply of cement, bricks, furniture etc. or if one is going to start a start- up of coffee house he hit into needs of regular supply of coffee, kulhad etc. and we know these things are mainly famous in rural areas so we came up with the idea to make these things easy andbetter. The platform creates a link between supplier and company and provides a way for their interaction.

CHAPTER 10

BIBLIOGRAPHY

- Wikipedia

- https://www.geeksforgeeks.org/python-django/

- https://www.javatpoint.com

- https://www.python.org/

- https://www.tutorialspoint/