PROJECT REPORT

Project Title

Multipurpose Unit Converter

Submitted by

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In partial fulfillment for the award of the degree

Of

DIPLOMA OF ENGINEERING

In

Department of Computer Engineering

Government Polytechnic Porbandar

Affiliated to Gujarat Technological University,

Chandkheda, Ahmedabad

Academic Year: 2021-22

GOVERNMENT POLYTECHNIC PORBANDAR

Near old Air-port NH-8B, Chhaya Porbandar,

Gujarat 360577, India

DECLARATION

We hereby declare that the Reports, submitted along with the Project Report for the project entitled ***"Multipurpose Unit Converter"*** submitted in partial fulfillment for the degree of ***Diploma of Engineering*** in ***Computer Department*** to Gujarat Technological University**,** Ahmedabad**,** is a Bonafide record of the project work carried out at ***Government Polytechnic Porbandar*** under the supervision *of* ***Vanraj Dnagar*** and that no part of any of these reports has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of The Students **Sign of Students**

Kakoo Vivek
Lodhari Jash
Dhanesha Yash
Satyadev Manthan

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CERTIFICATE

This is to certify that the reports, submitted along with the project entitled ***Multipurpose Unit Converter*** has been carried out by ***Kakoo Vivek(196270307512))***under my Guidance in partial fulfillment for the degree of: ***Diploma of Engineering*** in ***COMPUTER*** of Gujarat Technological University, Ahmadabad during the academic year 2021-22. These students have successfully completed report activity under my guidance.

Internal Guide **Head of Department**

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CERTIFICATE

This is to certify that the reports, submitted along with the project entitled ***Multipurpose Unit Converter*** has been carried out by ***Lodhari Jash(196270307033))***under my Guidance in partial fulfillment for the degree of: ***Diploma of Engineering*** in ***COMPUTER*** of Gujarat Technological University, Ahmadabad during the academic year 2021-22. These students have successfully completed report activity under my guidance.

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CERTIFICATE

This is to certify that the reports, submitted along with the project entitled ***Multipurpose Unit Converter*** has been carried out by ***Satyadev Manthan(196270307058))***under my Guidance in partial fulfillment for the degree of: ***Diploma of Engineering*** in ***COMPUTER*** of Gujarat Technological University, Ahmadabad during the academic year 2021-22. These students have successfully completed report activity under my guidance.

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This is to certify that the reports, submitted along with the project entitled ***Multipurpose Unit Converter*** has been carried out by ***Dhanesha Yash(196270307508))***under my Guidance in partial fulfillment for the degree of: ***Diploma of Engineering*** in ***COMPUTER*** of Gujarat Technological University, Ahmadabad during the academic year 2021-22. These students have successfully completed report activity under my guidance.

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GOVERNMENT POLYTECHNIC PORBANDAR

VISION OF THE INSTITUTE

To emerge as a leading polytechnic having value based effective technical education system in the region to meet the future demand of industry and society.

MISSION OF THE INSTITUTE

M1: To impart adequate technical skill and capability to accept challenges and to adopt rapidly changing scenario in technological development as well as to take up higher studies.

M2: Foster close networking with the industry, alumni and the guardians.

M3: Promote professional ethics and human values, integrity, accountability and transparency.

M4: Promote entrepreneurship practices to generate employment opportunities.

M5: Create conducive academic environment.

GOVERNMENT POLYTECHNIC PORBANDAR

COMPUTER ENGINEERING DEPARTMENT

VISION OF THE DEPARTMENT

To achieve excellence in Computer Engineering by imparting technical and problem-solving skills along with ethical value to meet industrial requirements having social and environmental concerns.

MISSION OF THE DEPARTMENT

M1: To provides a learning ambiance to enhance discipline knowledge, technical skill and problem-solving skill.

M2: To motivates students for lifelong learning to adapt challenges in rapidly changing technology.

M3: To induces ethical values and spirit of social commitment.

M4: To provide opportunities to promote leadership skill required in Computer Engineering industry's diverse culture

Subject: Project 1

Subject Code: C305, 3350706

Course Outcomes:

C3051	Identify problem statement by surveying variety of domains.
C305.2	Identify design methodologies based on requirement analysis.
C305.3	Apply advanced programming techniques.
C305.4	Present technical report by applying different visualization tools and Evaluation metrics.

Rubrics for Presentaion-1

Presentation 1 Maximum Marks : 20			
Criteria	**Level of Achievement**		
	Good	**Average**	**Poor**
Identification of Problem and Title Selection	Detailed and extensive explanation of the purpose and need of the project (5-7)	Average explanation of the purpose and need of the project (4-5)	Minimal explanation of the purpose and need of the project (0-3)
Study of the Existing Systems and Feasibility of Proposed Project	Detailed and extensive explanation of the specifications and the limitations of the existing systems (5-6)	Moderate study of the existing systems and collects some basic information (4-5)	Minimal explanation of the specifications and the limitations of the existing systems incomplete information (0-3)
Design of Project.	All objectives of the proposed work are well defined and Steps to be followed to solve the defined problem are clearly specified. (5-7)	Incomplete justification to the objectives proposed; Steps are mentioned but unclear without justification to objectives (4-5)	Objectives of the proposed work are either not identified or not well defined and Incomplete and improper specification. (0-3)

Rubrics for Presentaion-2

Presentation 2 Maximum Marks : 20			
Criteria	**Level of Achievement**		
	Good	**Average**	**Poor**
Partial Implementation of Project	Group has completed partial implementation and working correctly. (5-7)	Group has completed partial implementation and but not working some functionality according project requirement. (4-5)	group has completed less partial implementation . (0-3)
Testing of Project	Partial implemented Project work is Properly tested with all validations. (5-6)	Partial implemented Project work is tested but not properly validated. (4-5)	Implemented Project work is tested without validated. (0-3)
Report	Project report is according to the specified format, References and citations are appropriate. (5-7)	Project report is according to the specified format but some mistakes , In-sufficient references and citations (4-5)	Project report not prepared according to the specified format, References and citations are not appropriate. (0-3)

Rubrics Evaluation by Guide:

Evaluation by Guide Maximum Marks : 20			
Criteria	**Level of Achievement**		
	Good	**Average**	**Poor**
Working within a Team	Collaborates and communicates in a group situation and integrates the views of others. (5-7)	Exchanges some views but requires guidance to collaborate with others.(4-5)	Makes little or no attempt to collaborate in a group situation(0-3)
TechnicalKnowledge and Awareness related to the Project	Extensive knowledge related to the project (5-6)	Fair knowledge related to the project. (4-5)	Lacks sufficient knowledge (0-3)
Regularity	Reports to the guide regularly and consistent in work(5-7)	Not very regular but consistent in the work(4-5)	Irregular in attendance and inconsistent in work (0-3)

ACKNOWLEDGEMENT

I am grateful to **Prof. Manilal B. Kalariya,** Head of Department, department of computer engineering for providing me all the facility that was required for the successfully completion of our project. Our special thanks of gratitude to our subject guide and internal guide **Prof. Vanraj Dangar** for their valuable guidance and support in completing our project. I would like to thanks to all professors, parents, friends and CodeWithHarry(youtuber) who helped me a lot in finalizing this project within the limited time frame. Last but not the least we are grateful to authors of the reference and other literatures referred to in this project.

Name of Student
Kakoo Vivek
Lodhari Jash
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Satyadev Manthan

ABSTRACT

Unit converter is a simple, smart and elegant tool. Currently, the global standard of measurement is the International System of Units (SI), which is a modern form of the metric system. In this project we are going to create a website on multipurpose unit converter which is used to convert measurement units like length, temperature, data, speed, mass, time, discount etc. Through this unit converter the converting of measurement becomes easy.

Chapter-1 Introduction

1.1 Project Introduction

This unit converter software let you convert units for a variety of measurement quantities. Some of these tools let you convert unit for standard measurement categories, like **Data, Discount, Length, Area, Temperature, Speed, Time, and Mass.**

1.2 Project Purpose

Unit conversion is necessary because it helps with carrying out formula-based calculations. At times, the values provided for certain measurements are not in standard form, thus you need to convert them before calculations can be carried out. In most of these unit conversion calculators, all you have to do is select a measurement category, then choose from and to units, and enter the value of the unit which you want to convert. Almost all of these unit converter tools operate the same way.

1.3 Scope

The scope of the project is to build a website for Multipurpose Unit Converter. Through this website the users can able to convert their such units in another units. Through this website the converting of unit became easier and faster. In this website there are many types of converters like Area, Length, Temperature, Data etc. The user just needs a unit of physical quantity to convert it into another appropriate units. Through this website user can also able to contact admin for query and feedback purpose.

1.4 Objective

It provides the facility to convert the units of physical quantities to another unit easily and accurately. This website has been developed after the deep study of all physical quantities such as temperature, distance, area, length, data etc. It is faster and more user-friendly to use. This website is free for all user through this the user can able to access the site without any cost.

1.5 Technology

Tools required for testing the site

- Laptop or PC
- Internet connection

Tools required for developing website

- VS code
- Notepad++

Other Software and Languages required

Languages	Python (Back End) HTML,CSS and JavaScript (Front End)
Framework	Django (Python)
Other tools	Notepad++, VS code

Chapter - 2 System Requirements Specification

2.1 User Characteristics

2.1.1 End-User

User can access the site and use the converter to convert the length of their measurement and user can also able to contact the site admin through contact us page.

2.1.2 Admin

Admin can access the site and also able to handle the database. Admin can give response to user through the user contact details.

2.2 Functional Requirements

2.2.1 Unit Converter

User can able to use this converter to convert their units of physical quantities into another appropriate unit. For ex. In area the user can convert like cm to m, m to km, km to cm, mm to m, etc. In this converter such physical quantities like area, length, data, age, temperature, volume etc. are included. So, by that user can get many choices to convert their unit's physical quantity.

2.3 Non-Functional Requirements

2.3.1 Contact Us

User have to submit details in form, like phone number, email, name and query/feedback to contact the admin through which the admin can able to solve the problem of user. By this the user can get solution of their queries.

2.3.2 About Us

Through this page the user can see the details about the admin. Through this they can also contact the particular admin of the site. This page contains the details of admin like the name, email, about his qualification etc.

2.4 Time Scheduling

Time scheduling is a collection of techniques used to develop and present schedules that show when work will be performed. The results of all techniques usually presented as activities or bars on a timeline, known as a Gantt chart.

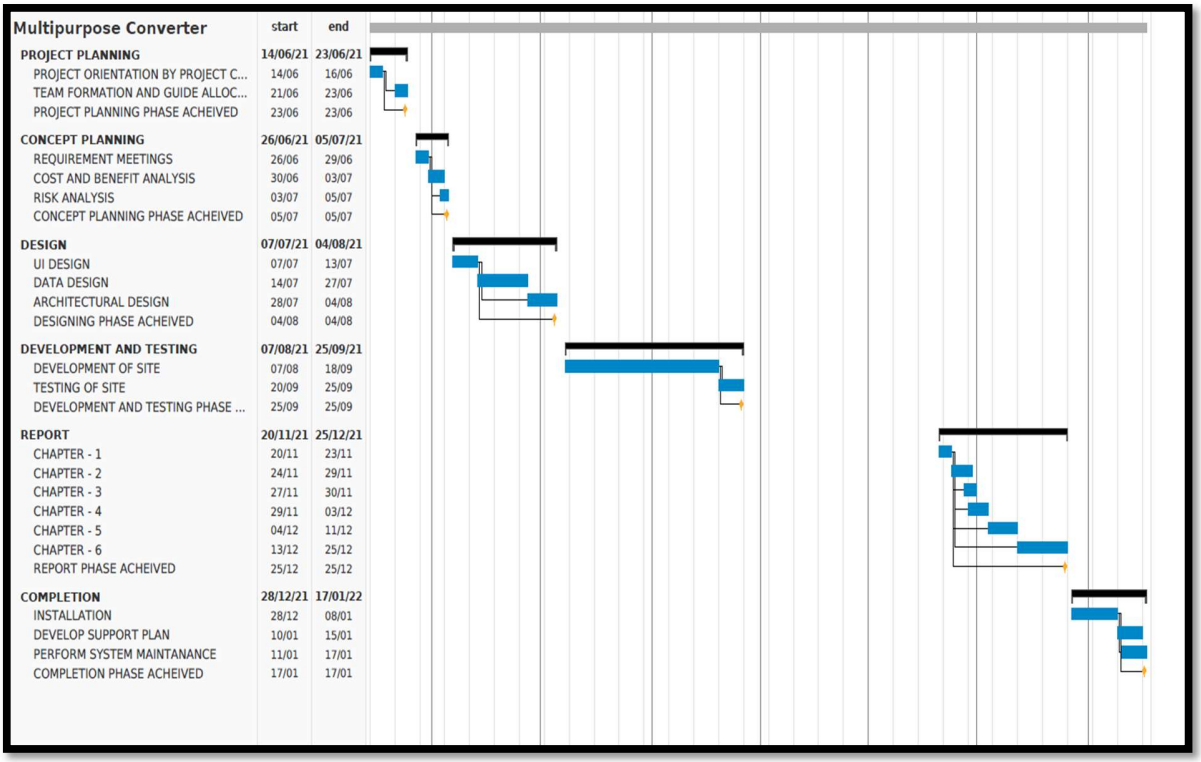

Fig 1 Time Scheduling Gantt chart

Chapter – 3 System Analysis Modelling – User-Based

3.1 Feasibility Study of New System

3.1.1 Technical Feasibility

This project doesn't require any enhanced system requirement to run it. So, it is technical feasible to run in any system. This site is very easy to implement so by that user can freely use this site. In this site there was no login or signup thing so the user can able to use converter without any details. But if they want to contact the admin for any queries then user have to submit their detail like name, number, email and query details.

3.1.2 Time Feasibility

In this project we are going to make website on Multipurpose Unit Converter. So, we need to collect details of many unit converters and we have to implement into this website. Due to this all things, it will be going to take 7 to 8 months for completion of website.

3.1.3 Cost-Benefit Feasibility

To produce a website requires a high-speed connection of internet, a web server, and software. But this website is made for the educational purpose so it doesn't cost the developers. And this site is free to use so it also doesn't cost the users. Thus, this website is user friendly and easy to use.

3.2 User-Based Modelling

3.2.1 Use Case Diagram

A use case diagram at its simplest is a representation of a user's interaction with the system that shows the relationships between end user and admin and the different use cases in which there are involved.

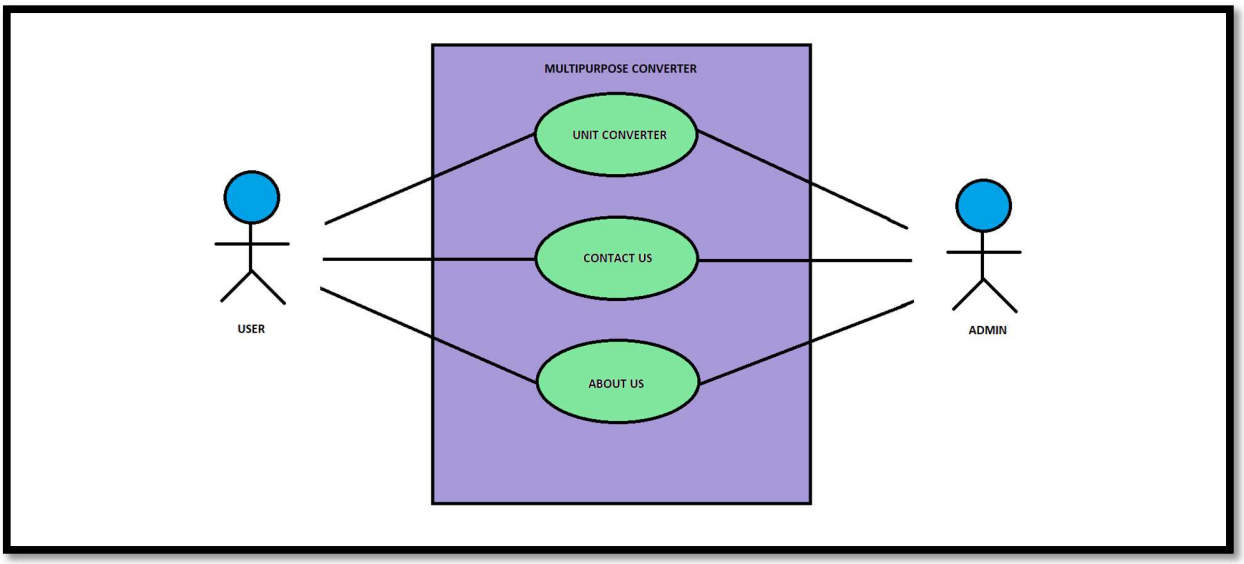

Fig 2 Use Case Diagram of Multipurpose-Converter

Chapter - 4 System Analysis and Design - Data-based

4.1 Data Modeling

4.1.1 Data Dictionary

4.1.1.1 Admin Login Table

FIELD NAME	FIELD SIZE	DATA TYPE	CONSTRAINT	DESCRIPTION
Username	30	Varchar2	NOT NULL	The admin can use this username to login into their account.
Password	16	Varchar2	NOT NULL	The admin login password

Table 1. Admin Login Data Dictionary

4.1.1.2 Contact Table

FIELD NAME	FIELD SIZE	DATA TYPE	CONSTRAINT	DESCRIPTION
Name	120	Varchar2	NOT NULL	The name of the user for submitting the contact form
Email	120	Varchar2	NOT NULL	The email of the user for submitting the Contact form
Phone no.	12	Integer	NOT NULL	The phone number of user for submitting the contact form
Feedback/Query	300	Vaechar2	NOT NULL	The feedback or query by user for submitting the contact form

Table 2. Contact Data Dictionary

4.1.2 ER Diagram

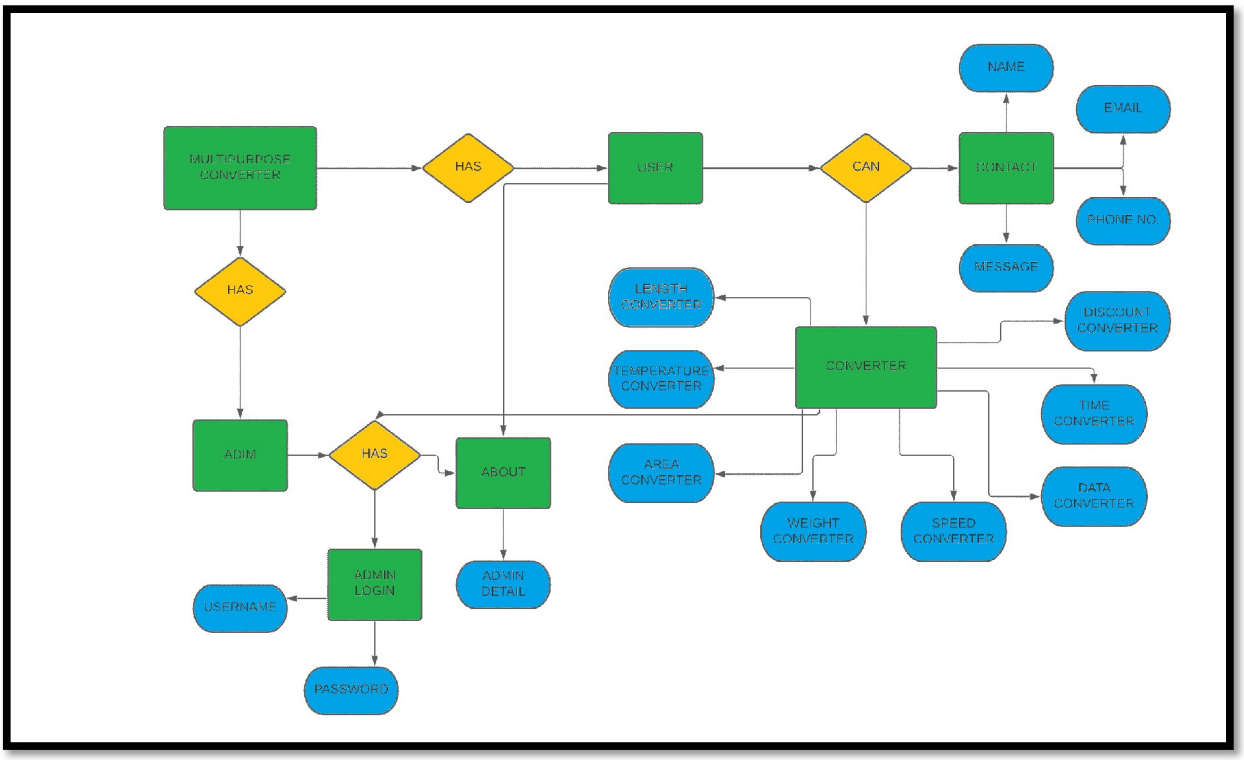

Fig 3. ER Diagram

This the ER diagram of the proposed system that has seven entities named admin, user and converter each entity has 'ID' attribute as their primary key and each entity has relationship like admin creates converters.

4.2 Behavioral Modeling

4.2.1 Data Flow Diagram

4.2.1.1 Context Level Diagram (Level 0)

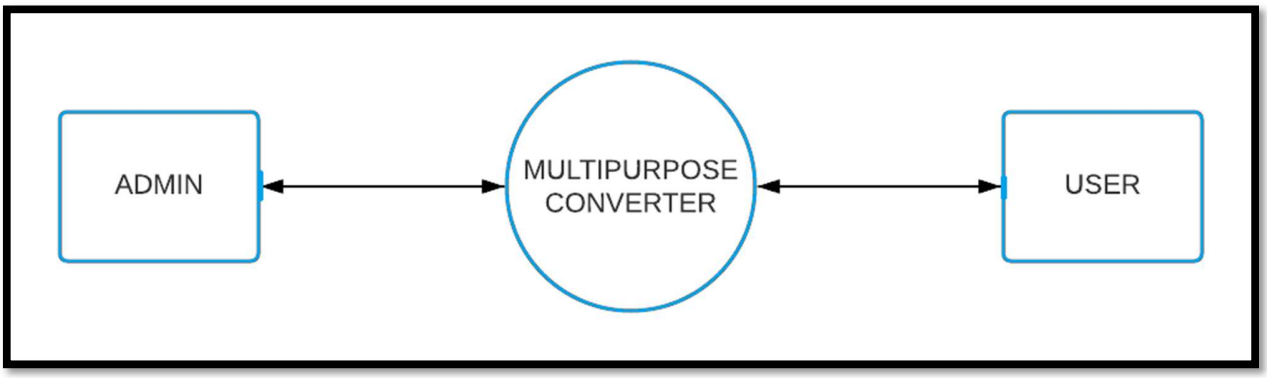

Fig 4. Context Level Diagram (Level 0)

This is the zero level DFD of the system, where we have elaborated the high-level process of the system. It's a basic overview of the whole system or process being analysed or modelled.

4.2.1.2level 1 DFD

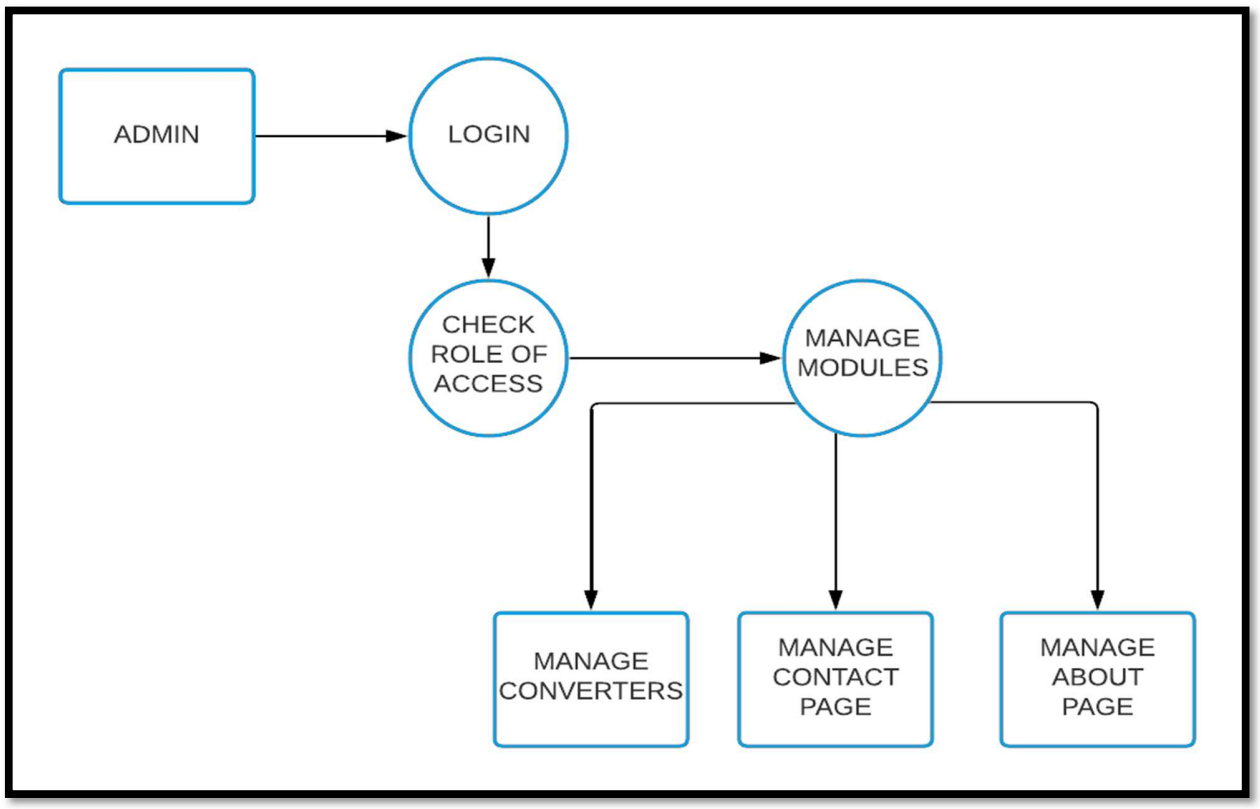

Fig 5. level 1 DFD

First level DFD (1st level) of Admin shows how the System is divided into sub-systems (Processes), each of which deals with one or more of the data flows to or from an external agent, and which together provide all of the functionality of the admin as a whole.

Chapter - 5 System Design UML

5.1 Sequence Diagram

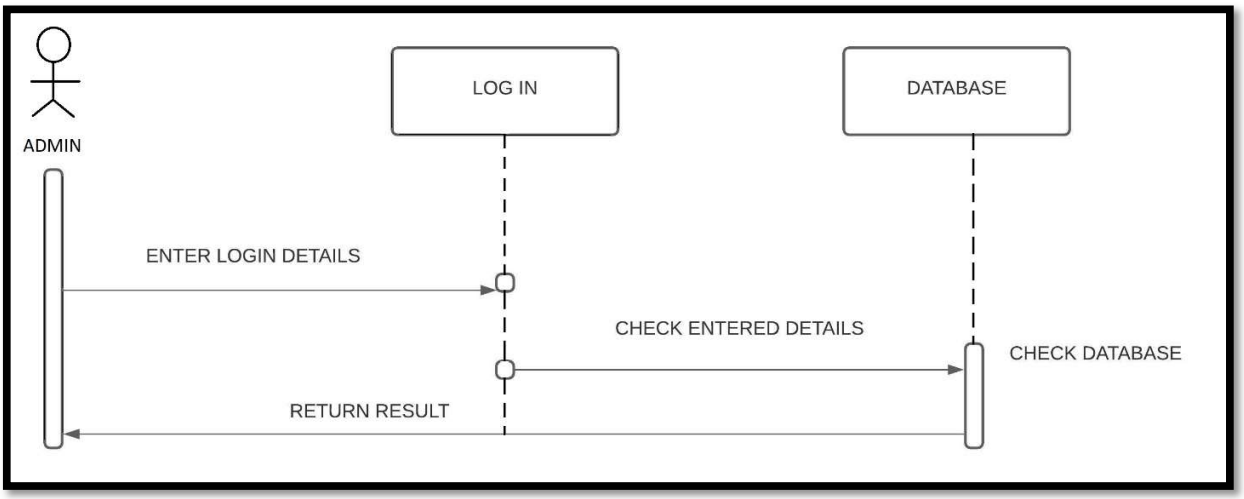

Fig 6. Sequence Diagram

This sequence diagram shows how the login module of the proposed system works when admin enter their details to log in into the system.

5.2 Activity Diagram

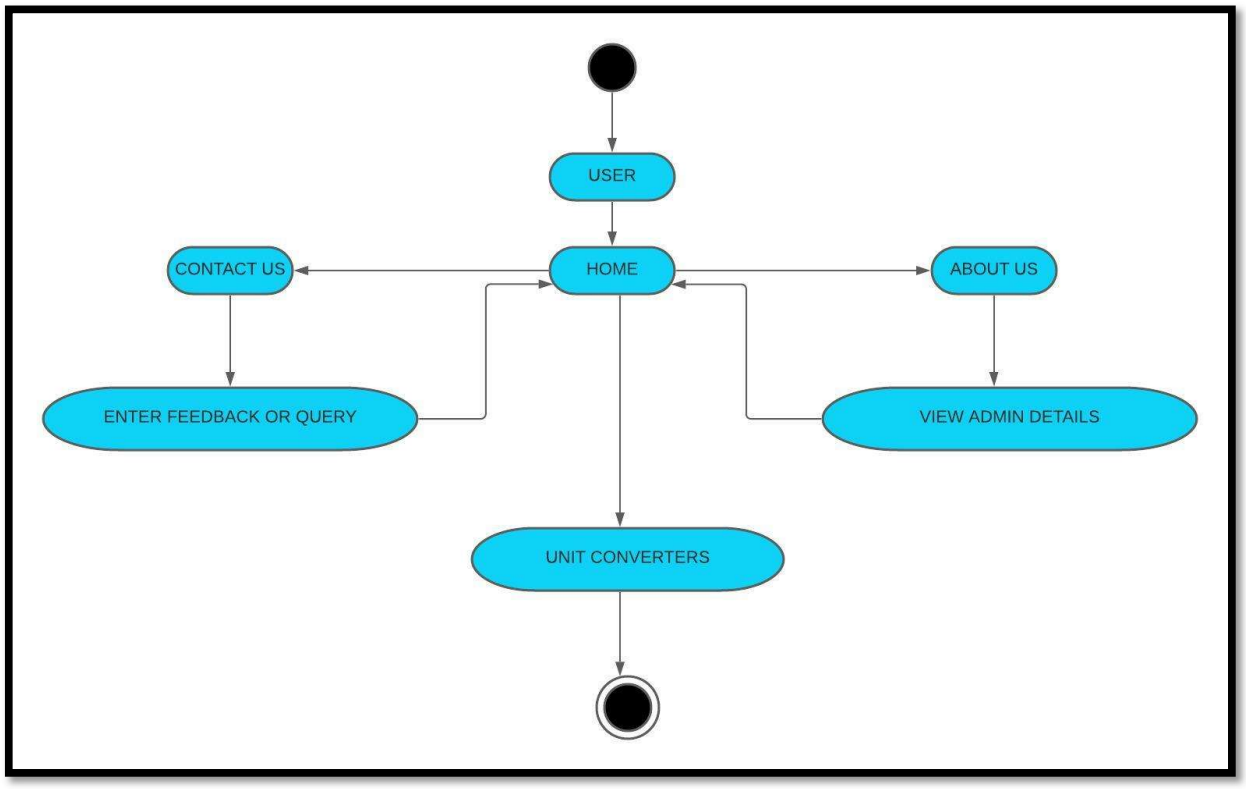

Fig 7. Activity Diagram

This is the activity diagram that shows the flow of the modules chronologically when users first visits the system.

REFERENCES

Bootstrap:

https://getbootstrap.com/docs/5.1/getting-started/introduction/

Learning Django:

https://www.youtube.com/watch?v=JxzZxdht-XY

Learning python:

https://www.youtube.com/watch?v=gfDE2a7MKjA

https://www.youtube.com/watch?v=61a7UkDO50s