**Weather Forecast**

Logo

Description automatically generated

**Investigatory Project Work**

**Submitted By**

**Sarath Chandra Godithi- 12A**

**Under the Guidance of**

**Mrs. Bharati Rameshbhai Patel**

**CERTIFICATE**

This is to certify that Sarath Chandra Godithi of Class 12 A has prepared the investigatory project in Computer Science entitled Weather Forecast. The report is the result of his efforts and endeavours. The report is found worthy of acceptance as the final project report for the subject Computer Science of Class XII. He has prepared this report under my guidance.

**Internal Examiner: Signature:**

**Name: Mrs. Bharati Rameshbhai Patel**

**External Examiner: Signature:**

**ACKNOWLEDGEMENT**

I would like to express my deep sense of thanks and gratitude to the Subject guide Mrs. Bharati Rameshbhai Patel, HOD of Computer Science for guiding me immensely through the course of my project. The teacher had always evinced keen interest in my work. The constructive advice and constant motivation provided, have been responsible for successful completion of this project.

I also thank my parents and my classmates for their timely help and guidance. I sincerely extend my thanks to all those who had helped directly or indirectly towards the completion of this project in fulfilment of my course.

Name of the Student: Signature:

Sarath Chandra Godithi

**CONTENT**

1. Certificate 2
2. Acknowledgement 3
3. Introduction 5

* Python
* SQL
* Tkinter

1. Overview 7
2. Source Code 8
3. Output 9
4. Shortcomings 10
5. Bibliography 11

**INTRODUCTION**

**PYTHON:**

Python is a widely used, interpreted, object-oriented, and high-level programming language with dynamic semantics, used for general-purpose programming. It was created by Guido van Rossum, and first released on February 20, 1991.

While you may know the python as a large snake, the name of the Python programming language comes from an old BBC television comedy sketch series called **Monty Python’s Flying Circus.**

One of the amazing features of Python is the fact that it is actually one person’s work. Usually, new programming languages are developed and published by large companies employing lots of professionals, and due to copyright rules, it is very hard to name any of the people involved in the project. Python is an exception.

Of course, van Rossum did not develop and evolve all the Python components himself. The speed with which Python has spread around the world is a result of the continuous work of thousands (very often anonymous) programmers, testers, users (many of them aren’t IT specialists) and enthusiasts, but it must be said that the very first idea (the seed from which Python sprouted) came to one head – Guido’s.

Python is used by hundreds of thousands of programmers and is used in many places. Sometimes only Python code is used for a program, but most of the time it is used to do simple jobs while another programming language is used to do tasks that are more complicated.

Its standard library is made up of many functions that come with Python when it is installed. On the Internet, many other libraries available make it possible for the Python language to do more things. These libraries make it a powerful language; it can do many different things.

Some things that Python is often used for are:

* AI and machine learning
* Scientific programming
* Data Analytics
* Data Visualisation
* Programming Applications

**SQL:**

SQL (Structured Query Language) is a standardized programming language that's used to manage relational databases and perform various operations on the data in them. Initially created in the 1970s, SQL is regularly used not only by database administrators, but also by developers writing data integration scripts and data analysts looking to set up and run analytical queries.

The uses of SQL include modifying database table and index structures; adding, updating, and deleting rows of data; and retrieving subsets of information from within a database for transaction processing and analytics applications. Queries and other SQL operations take the form of commands written as statements -- commonly used SQL statements include select, add, insert, update, delete, create, alter, and truncate.

**Tkinter:**

Tkinter is the inbuilt python module that is used to create GUI applications. It is one of the most used modules for creating GUI applications in Python as it is simple and easy to work with. The installation of the Tkinter module is simple and efficient as it comes with Python already. It gives an object-oriented interface to the Tkinter GUI toolkit.

**OVERVIEW**

### The Weather Forecast App is a replica of an official Weather Forecast websites made simple.

### It collects data about the current state of the atmosphere (including the temperature, humidity, and wind) from online sources and understands atmospheric processes to determine how the atmosphere will change over the next two weeks.

### Thus, this simplified version of Weather Forecast App gives the user an idea about the prediction of what the atmosphere will be like in a particular place by using technology and scientific knowledge to make weather observations and gives a clear representation of the data. The Database of Weather App can then later be used for analysing with various queries.

**SYSTEM REQUIREMENTS:**

**For development:-**

OS: Windows 7 SP1+, 8, 10, 32-bit and 64-bit versions, 2gb RAM.

**For running the application software:-**

* MySQL Workbench
* Python 3
* MySQL client module installed through pip installation
* Python Modules: Requests, beautifulsoup4, pywin32

### SOURCE CODE

### MySQL CODE:

**Output:-**

A blue sky with clouds

Description automatically generated with low confidence

A picture containing text, sky, cloudy, clouds

Description automatically generated

Text

Description automatically generated

**SHORTCOMINGS**

* We don’t have a satellite which we can directly access for weather data, so we had to use web scrapping instead to get data from another website.
* If we had more time to work on this project, we could have implemented a harsh weather warning system. The login system was meant to collect Mail IDs to serve this purpose.
* Due to shortage of time, we couldn’t expand on the weather forecast data. For example: Adding hourly forecast and analysis of data.

**BIBLIOGRAPHY**

**Web Links:**

https://www.timeanddate.com

https://stackoverflow.com

https://docs.python.org/3/

https://docs.python-requests.org/en/latest/

https://www.crummy.com/software/BeautifulSoup/bs4/doc/

https://www.youtube.com/watch?v=rfscVS0vtbw

https://www.youtube.com/c/Coreyms

https://www.dataquest.io/blog/web-scraping-python-using-beautiful-soup/

https://www.w3schools.com/python/