PROJECT REPORT

On

"OTP Generation & Verification"

Submitted By

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CERTIFICATE

This is to certify that the Project titled **"OTP Generation & Verification"** is a bonafide work of Mr. Tejas Kawale carried out for the partial fulfillment of the requirement for the award of Degree of Bachelor of Engineering in **Computer Science & Engineering.**

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LIST OF FIGURE

CHAPTER 1

INTRODUCTION

In these project we generate and verify the six digit OTP by using python library and some APIs.

A one-time password, also known as a one-time PIN, one-time authorization code or dynamic password, is password that is valid for only one login session or transaction, on a computer systemor other digital device.

One-time password (OTP) systems provide a mechanism for logging on to a network or service using a unique password that can only be used once, as the name suggests. In OTP-based authentication methods, the user's OTP app and the authentication server rely on shared secrets.

Fig 1.1 OTP view

CHAPTER 2

METHODOLOGY

Here in these project that is OTP generation and verification we use one APIs to send OTP. We connect that APIs with our python code using twilio labrary. When we run the program the OTP come on Mobile number. These OTP then enter on the run time and verify that number. If the user enter the wrong OTP for verification then it shows invalid OTP.

In these way we design the project for OTP generation and verification.the process of identifying and validating an individual is the rudimentary step before granting access to any protected service (such as a personal account). Authentication has been built into the cyber security standards and offers to prevent unauthorized access to safeguarded resources. Authentication mechanisms today create a double layer gateway prior to unlocking any protected information.

This double layer of security, termed as two factor authentication, creates a pathway that requires validation of credentials (username/email and password) followed by creation and validation of the **One Time Password (OTP)**. The OTP is a numeric code that is randomly and uniquely generated during each authentication event. This adds an additional layer of security, as the password generated is fresh set of digits each time an authentication is attempted and it offers the quality of being unpredictable for the next created session.

CHAPTER 3

TOOLS/PLATFORMS

For that project we used –

- Python language

  Python is a high-level, general-purpose programming language. Its design philosophy emphasizes code readability with the use of significant indentation. Its language constructs and object-oriented approach aim to help programmers write clear, logical code for small- and large-scale projects. Python is dynamically-typed and garbage-collected.

- VS code

  Visual Studio Code is a code editor redefined and optimized for building and debugging modern web and cloud applications. Visual Studio Code is **free** and available on your favorite platform - Linux, macOS, and Windows.

- Pip

  Pip is basically a package manager for Python. Packages is a collection of python files that is needed for a module which you can later include in our project. For example, Pandas is one such package that can be included in our projects for working with series and dataframes. Pip is usually installed automatically when install python from python.org or when we create a virtual environment using Anaconda.

- Twilio APIs

  Twilio's APIs (Application Programming Interfaces) power its platform for communications. Behind these APIs is a software layer connecting and optimizing communications networks around the world to allow your users to call and message anyone, globally.

- Mobile phone

  Mobile phone. A mobile phone, cell phone, cellphone, or hand phone, sometimes shortened to simply mobile, cell or just phone, is a portable telephone that can make and receive calls over a radio frequency link while the user is moving within a telephone service area

CHAPTER 4

DESIGN & IMPLEMENTATION

4.1 ALGORITHM

1. Start
2. First, create a 6-digit random number i.e OTP
3. Then store the number in a variable.
4. Send OTP on Mobile number by using APIs.
5. Received the OTP on Mobile number.
6. Verify that OTP
7. End

4.2 FLOWCHART

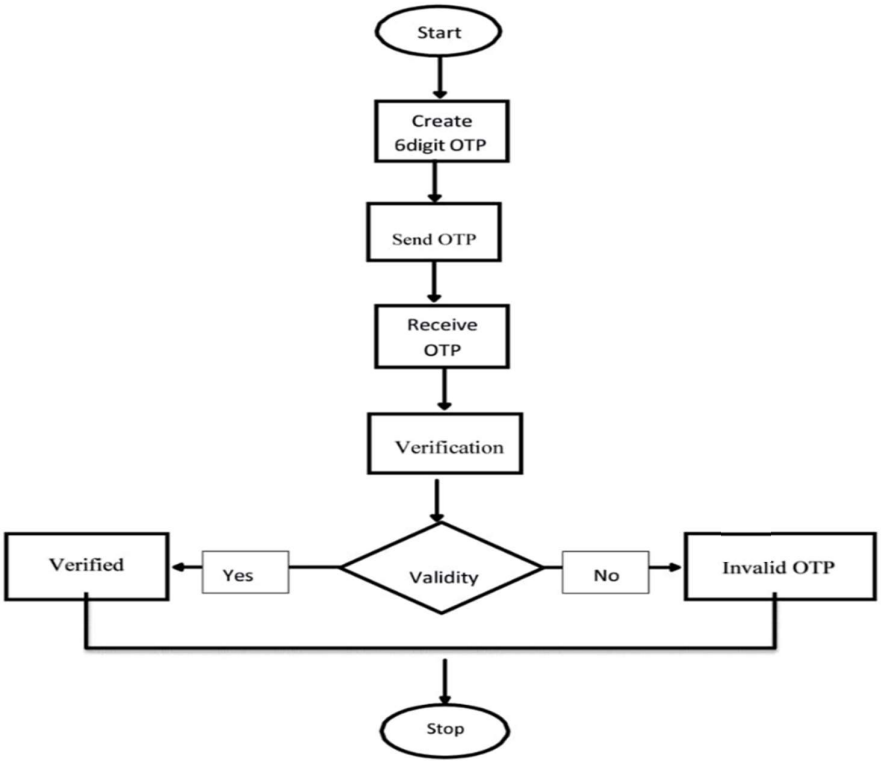

fig 4.2.1 Flowchart

4.3 SOURCE CODE

```
from cProfile import label
from tkinter import Label
import twilio
import random

OTP=random.randint(100000,999999)

from twilio.rest import Client

account_sid ='AC531eaceaa24fa8fc634bfbfa9b15ab78'
auth_token ='61bf9dfb181a0d59941232977f595855'
client = Client(account_sid, auth_token)

message = client.messages.create(
                body="Your OTP is ::"+str(OTP),
                from_='+12312416250',
                to='+917385326237'
            )

print(".....")
print(".....")
print("Successfully sent")
print(".....")
print(".....")
a=input("Enter your OTP ")

print(".....")
print(".....")
```

```
if a==str(OTP):
    print("verified")
    print("____________________")
    print("____________________")

else:
    print("Please enter Valid OTP")
    print("____________________")
    print("____________________")
```

CHAPTER 5

RESULT & DISC

5.1 OUTPUT

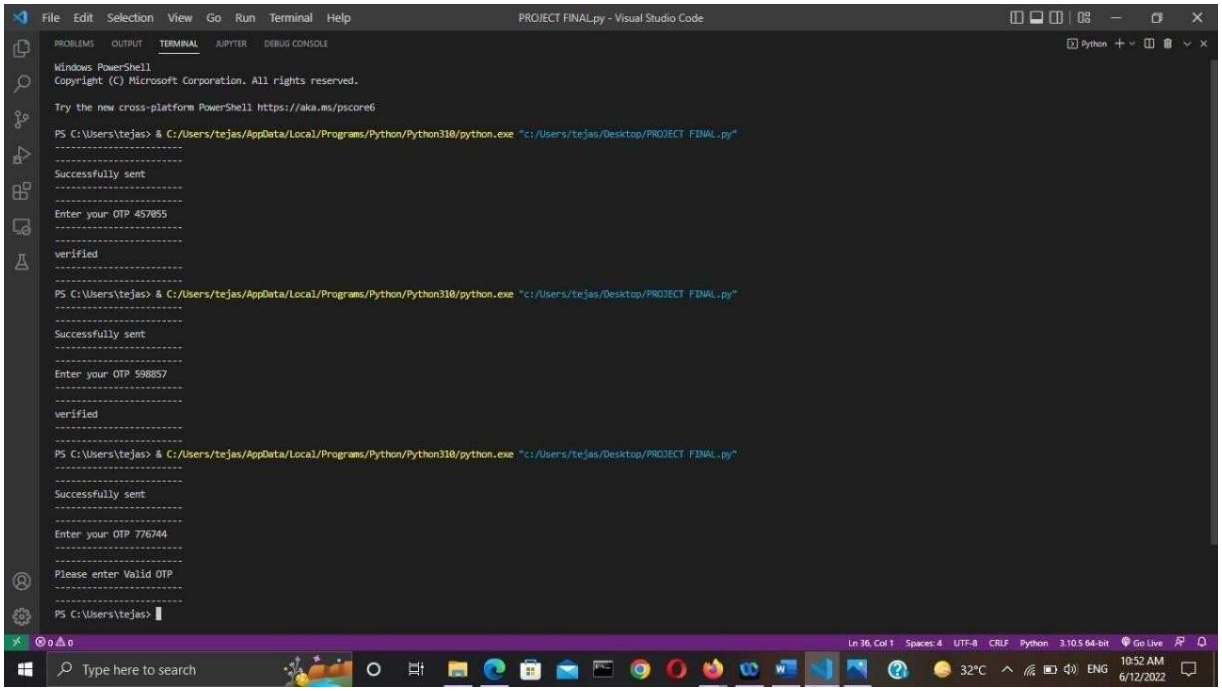

Fig 5.1.1

5.2 DISCUSSION

1. User Enters Phone Number
2. Generate a Random Code
3. Send a request to Twilio to send the user a SMS via the Web API
4. Conditional statement is the app, if code matches original code, you can set the account to verified (stored variable) and navigate to the next screen.

If we can't send the request directly to twilio (depending on how you handle authentication with their api) you can use a middleman software such as Pipedream where we send the request and theysend the request to twillio for the sms.

5.3 APPLICATION

1. For verifying account
2. We use these project for protection of important data from unauthorised user.
3. Secure multiple devices to one account.
4. In banking application when we withdraw the amount more then 10000 then the OTP send on the mobile number which is then verified.

Chapter6

CONCLUSION

We have designed and developed a OTP Generator by applying engineering knowledge which provides an approach in building a device where users can get availability directly from authority figures. It solved the critical problem of society by saving lots of time and energy of visitors who do not know the whereabouts of staff person until they come to the office.

We have used modern tools like python IDE and hardware components like computer Module, APIs, etc to implement this project. During the development of the project we have applied professional

ethics and we understood the importance of individual and team work while project management.

While showcasing our project through various seminars ,we enhanced our communication skills and displayed professional ethics which results in lifelong learning

REFERENCE

https://www.twilio.com/
https://youtube/o8NF7qvxa5g