

PROJECT DEVELOPMENT PHASE - SPRINT 4

Date	15 November 2022
Team ID	PNT2022TMID42243
Project Name	Smart Solutions for railways

SPRINT 4– Ticket Verification

Once the payment is successful, QR Code will be generated. The ticket collector can scan the generated QR Code from the user and verify it. By scanning the QR Code the user details will be displayed.

CODE:

```
import cv2
import numpy as np
import time
import pyzbar.pyzbar as pyzbar
from pyzbar.pyzbar import decode
from ibmcloudant.cloudant_v1 import CloudantV1
from ibmcloudant import CouchDbSessionAuthenticator
from ibm_cloud_sdk_core.authenticators import BasicAuthenticator

authenticator = BasicAuthenticator('apikey-v2-k0li2r9edsevyjyqtgzh0j653g1g81j24lfbe7hzz2h',
'71b524ba05a9592d11221ed267338f27')
service = CloudantV1(authenticator=authenticator)

service.set_service_url('https://apikey-v2-
k0li2r9edsevyjyqtgzh0j653g1g81j24lfbe7hzz2h:71b524ba05a9592d11221ed267338f27@af6aa2
e1-088e-4c99-960c-9faea5d31cf8-bluemix.cloudantnosqldb.appdomain.cloud')

cap= cv2.VideoCapture(0)
font = cv2.FONT_HERSHEY_PLAIN

while True:
    _, frame = cap.read()
    decodedObjects = pyzbar.decode(frame)
    for obj in decodedObjects:
        #print ("Data", obj.data)
        a=obj.data.decode('UTF-8')
        cv2.putText(frame, "Ticket", (50, 50), font, 2, (255, 0, 0), 3)
        #print (a)
```

```

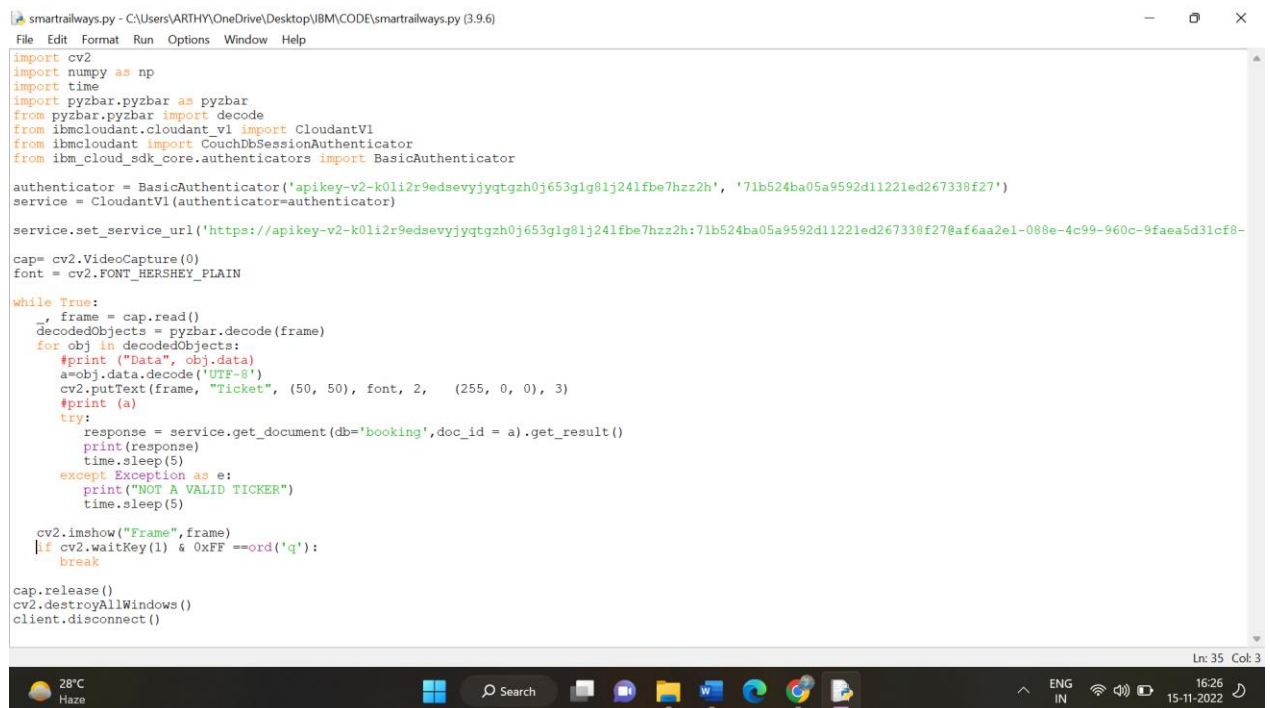
try:
    response = service.get_document(db='booking',doc_id = a).get_result()
    print(response)
    time.sleep(5)
except Exception as e:
    print("NOT A VALID TICKER")
    time.sleep(5)

cv2.imshow("Frame",frame)
if cv2.waitKey(1) & 0xFF ==ord('q'):
    break

cap.release()
cv2.destroyAllWindows()
client.disconnect()

```

PYTHON CODE FOR QR CODE VERIFICATION:



The screenshot shows a Python IDE window titled 'smartrailways.py - C:\Users\ARTH\OneDrive\Desktop\IBM\CODE\smartrailways.py (3.9.6)'. The code is a script for QR code verification using OpenCV and a custom service. It includes imports for cv2, numpy, time, pyzbar, and IBM Cloudant. The main logic is in a while loop that reads a QR code from a video capture, decodes it, and verifies it against a database. The code is as follows:

```

import cv2
import numpy as np
import time
import pyzbar.pyzbar as pyzbar
from pyzbar.pyzbar import decode
from ibmcloudant.cloudant_v1 import CloudantV1
from ibmcloudant import CouchDbSessionAuthenticator
from ibm_cloud_sdk_core.authenticators import BasicAuthenticator

authenticator = BasicAuthenticator('apikey-v2-k0li2r9edsevyjyqgtgzh0j653glg8lj24lfbe7hzz2h', '71b524ba05a9592d11221ed267338f27')
service = CloudantV1(authenticator=authenticator)

service.set_service_url('https://apikey-v2-k0li2r9edsevyjyqgtgzh0j653glg8lj24lfbe7hzz2h:71b524ba05a9592d11221ed267338f27@af6aa2e1-088e-4c99-960c-9faea5d31cf8-

cap= cv2.VideoCapture(0)
font = cv2.FONT_HERSHEY_PLAIN

while True:
    frame = cap.read()
    decodedObjects = pyzbar.decode(frame)
    for obj in decodedObjects:
        #print ("Data", obj.data)
        a=obj.data.decode('UTF-8')
        cv2.putText(frame, "Ticket", (50, 50), font, 2, (255, 0, 0), 3)
        #print (a)
        try:
            response = service.get_document(db='booking',doc_id = a).get_result()
            print(response)
            time.sleep(5)
        except Exception as e:
            print("NOT A VALID TICKER")
            time.sleep(5)

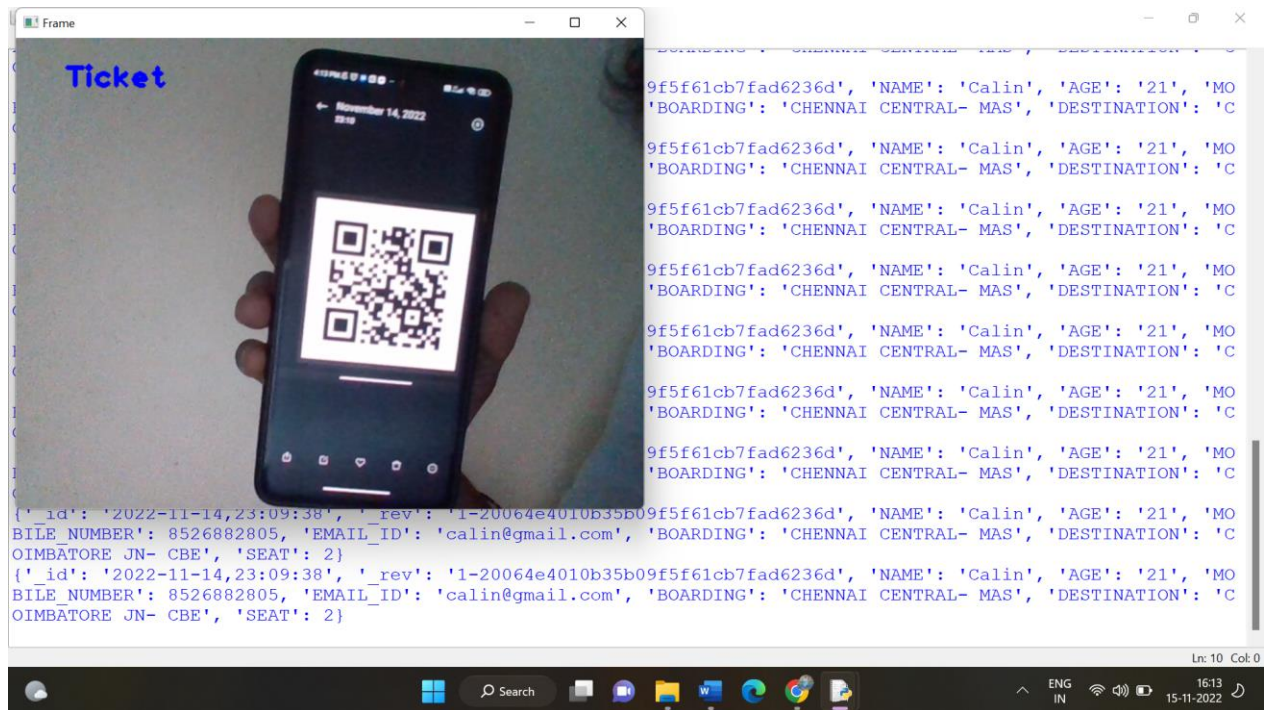
    cv2.imshow("Frame",frame)
    if cv2.waitKey(1) & 0xFF ==ord('q'):
        break

cap.release()
cv2.destroyAllWindows()
client.disconnect()

```

The IDE interface includes a menu bar (File, Edit, Format, Run, Options, Window, Help) and a status bar at the bottom showing 'Ln: 35 Col: 3'. The Windows taskbar at the very bottom displays the date and time as '15-11-2022 16:26'.

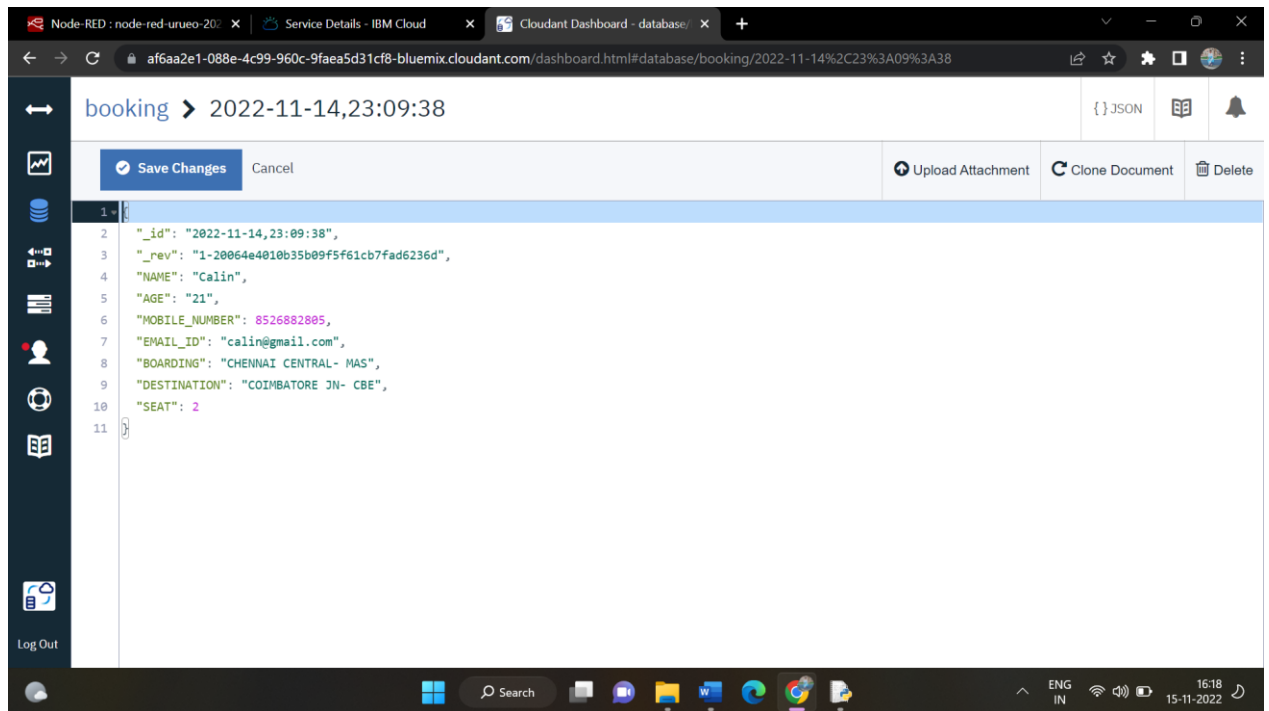
QR CODE VERIFICATION:



DISPLAYING USER DETAILS:



USER DETAILS STORED IN CLOUDANT:



The screenshot displays the Cloudant Dashboard interface in a web browser. The browser's address bar shows the URL: `af6aa2e1-088e-4c99-960c-9faea5d31cf8-bluemix.cloudant.com/dashboard.html#database/booking/2022-11-14%2C23%3A09%3A38`. The dashboard header includes the breadcrumb `booking > 2022-11-14,23:09:38` and icons for JSON, document, and notifications. Below the header, there are buttons for `Save Changes`, `Cancel`, `Upload Attachment`, `Clone Document`, and `Delete`. The main content area shows a JSON document with the following details:

```
1 {
2   "_id": "2022-11-14,23:09:38",
3   "_rev": "1-20064e4010b35b09f5f61cb7fad6236d",
4   "NAME": "Calin",
5   "AGE": "21",
6   "MOBILE_NUMBER": "8526882805",
7   "EMAIL_ID": "calin@gmail.com",
8   "BOARDING": "CHENNAI CENTRAL- MAS",
9   "DESTINATION": "COIMBATORE JN- CBE",
10  "SEAT": "2"
11 }
```

The left sidebar contains various navigation icons, and the bottom of the screen shows the Windows taskbar with the date and time as 15-11-2022, 16:18.