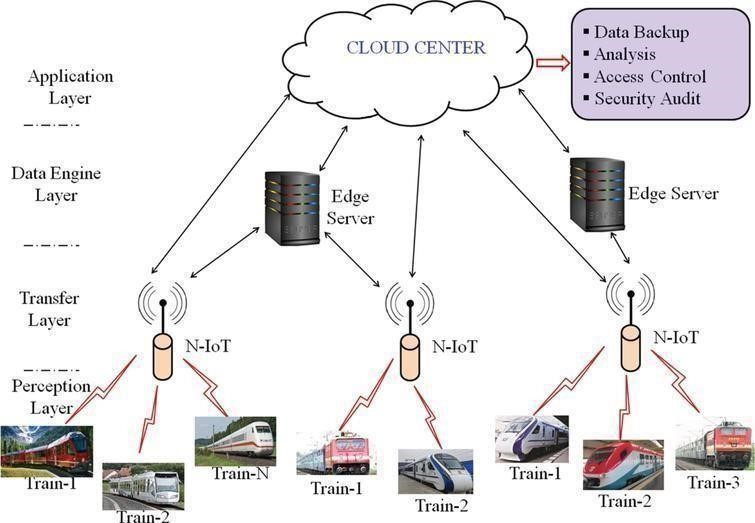
**PROJECT DEVELOPMENT PHASE**

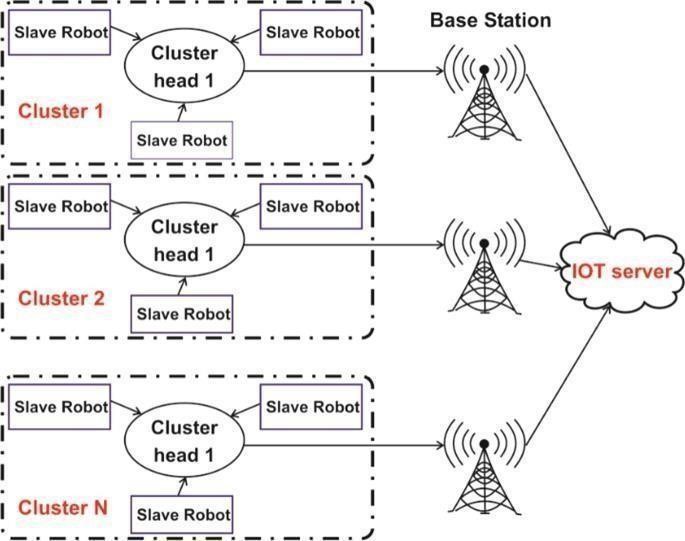
**SPRINT-2**

**Project Title**: Smart Solution for Railways **Team ID**: PNT2022TMID42986

**Proposed architecture for smart track monitoring system.**



**Structural health monitoring of railway tracks using IOT-based multi robot system:**



**Main Program:**

importwiotp.sdk.device

importtime

importrandom

myConfig={

"identity":{

"orgId":"gagtey",

"typeId":"GPS",

"deviceId":"12345"

},

"auth":{

"token":"12345678"

}

}

defmyCommandcallback(cmd):

print("messagereceivedfromIBMIOTPlatform:%s"%cmd.data['command'])

m=cmd.data['command']

client=wiotp.sdk.device.deviceclient(config=myConfig,logHandlers=None)

client.connect()

defpub(data):

client.publishEvent(eventId="status",msgFormat="json",data=mydata,qos=0,

print("publishedatasuccessfully:%s",mydata)

whileTrue:

mydata={'name':'Train1','lat':17.6387448,'lon':78.4754336)

pub(myData)

time.sleep(3)

#mydata={'name':'Train2','lat':17.6387448,'lon':78.4754336)

#pub(myData)

#time.sleep(3)

mydata={'name':'Train1','lat':17.6341908,'lon':78.4744722)

pub(myData)

time.sleep(3)

mydata={'name':'Train1','lat':17.6340889,'lon':78.4745052)

pub(myData)

time.sleep(3)

mydata={'name':'Train1','lat':17.6248626,'lon':78.4720259)

pub(myData)

time.sleep(3)

mydata={'name':'Train1','lat':17.6188577,'lon':78.4698726)

pub(myData)

time.sleep(3)

mydata={'name':'Train1','lat':17.6132382,'lon':78.4707318)

pub(myData)

time.sleep(3)

client.commandCallback=mycommanCallbak

client.disconnect()

**Code:**

importcv2

importnumpyasnp

importtime

importpyzbar.pyzbaraspuzbar

fromibmcloudant.cloudant\_v1importcloudantv1

fromibmcloudantimportcouchDbsessionAuthenticator

fromibm\_cloud\_sdk\_core.AuthenticatorsimportBasicAuhtenticator

authenticator=BasicAuthenticator('apikey-v2-16u3crmdpkghhxefdikvpssoh5fwezrmuup5fv5g3ubz','b0ab119f45d3e6255eabb978)

service=cloudantv1(authenticator=authenticator)

service.set\_service\_url('https://apikey-v2-16u3crmdpkghhxefdikvpssoh5fwezrmuup5fv5g3ubz:b0ab119f45d3e6255eabb978

cap=cv2.videoCapture(0)

font=cv2.FONT\_HERSHEY\_PLAIN

whileTrue:

\_,frame=cap.read(0)

decodeObjects=pyzbar.decode(frame)

forobjindecodeObjects:

#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:

responce=service.get\_document(db='booking',doc\_id=a).get\_result()

print(response)

time.sleep(5)

exceptExceptionase:

print("NotvalidTicket")

time.sleep(5)

cap.imshow("Frame",frame)

ifcv2.waitKey{1}&0XFF==ord('q'):

break

cap.release()

cv2.destroyAllWindows()

client.disconnect()