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ENG 224 ASSIGNMENT

① COVID-19 has caused a serious pandemic across the world with serious impacts being felt. As a young Engineer working with a multi-national health company, you are saddled with a huge responsibility of designing a web-based application that can detect, keep track rate (degree of infection), store, transmit data obtained wirelessly and access the data via the web together with other features which the board of directors allow you to come up with

↳ DESIGN:

The application would be installed on a device with a computer-like with unique accessories. The application would request for the patient's details which he/she, would input using the console. It would also ask for a blood sample. Which should be poured into the blood storage vessel.

The container would automatically open once the request is made; and close (with the aid of sensors) when all the blood has been poured in. Below Above, the container is a vessel that contains a chemical called reverse transcription polymerase chain reaction, or RT-PCR (It amplifies ~~the proteins~~ the presence of proteins associated with the virus, making it easily detectable).

The app has images of these protons stored and sensors in the container match that with what is present in the container. Then they find the concentration of the protons and

(II) Hardware and Software features

Hardware features

(i) Sensors - Are an integral part of this assembly because they are measuring devices and the app relies COVID-19 data the sensors counting the number of times cells

(ii) Pump: Transfers the some of the RT-PCR from its vessel to the entrance having the blood sample.

(iii) Valve: Opens when RT-PCR is to be transferred

(iv) Monitor: Displays the graphical user interface.

(v)

Software Features

(i) Graphical User Interface: The texts and graphics on the monitor that aids communication between the user & program. It is displayed on the monitor.

(2) Uploading of each patient's details and results to cloud: All the data of patient's can be accessed via to an online storage space called a cloud. This because all data are sent there.

(3) Restricted Access to The Cloud: This to maintain patient confidentiality. Only authorized personal know the password to access patient's files

(4) Storage: All data used by the app is stored internally but to locked.

(II) Algorithm

STEP 1: Start

STEP 2: Display

STEP 4: Read

STEP 5: Display

STEP 6:

STEP 7: Add

STEP 8:

STEP 9:

STEP 10:

STEP 11:

STEP 12:

STEP 13:

STEP 14:

STEP 15:

STEP 16:

STEP 17:

STEP 18

Occupation and Gender

STEP4: Read Name, Address, Occupation, Gender

STEP5: Display "Put blood sample"

STEP6: Containers opens

STEP7: Add RT-PCR to the blood sample

STEP8: no of viruses, volume of blood, concentration of viruses(N) = 0

STEP9: concentration of viruses(N) = no of viruses / volume of blood

STEP10: Get no of viruses, volume of blood

STEP11: Display "concentration of virus"

STEP12: Display "Loading...."

STEP13: Calculate N

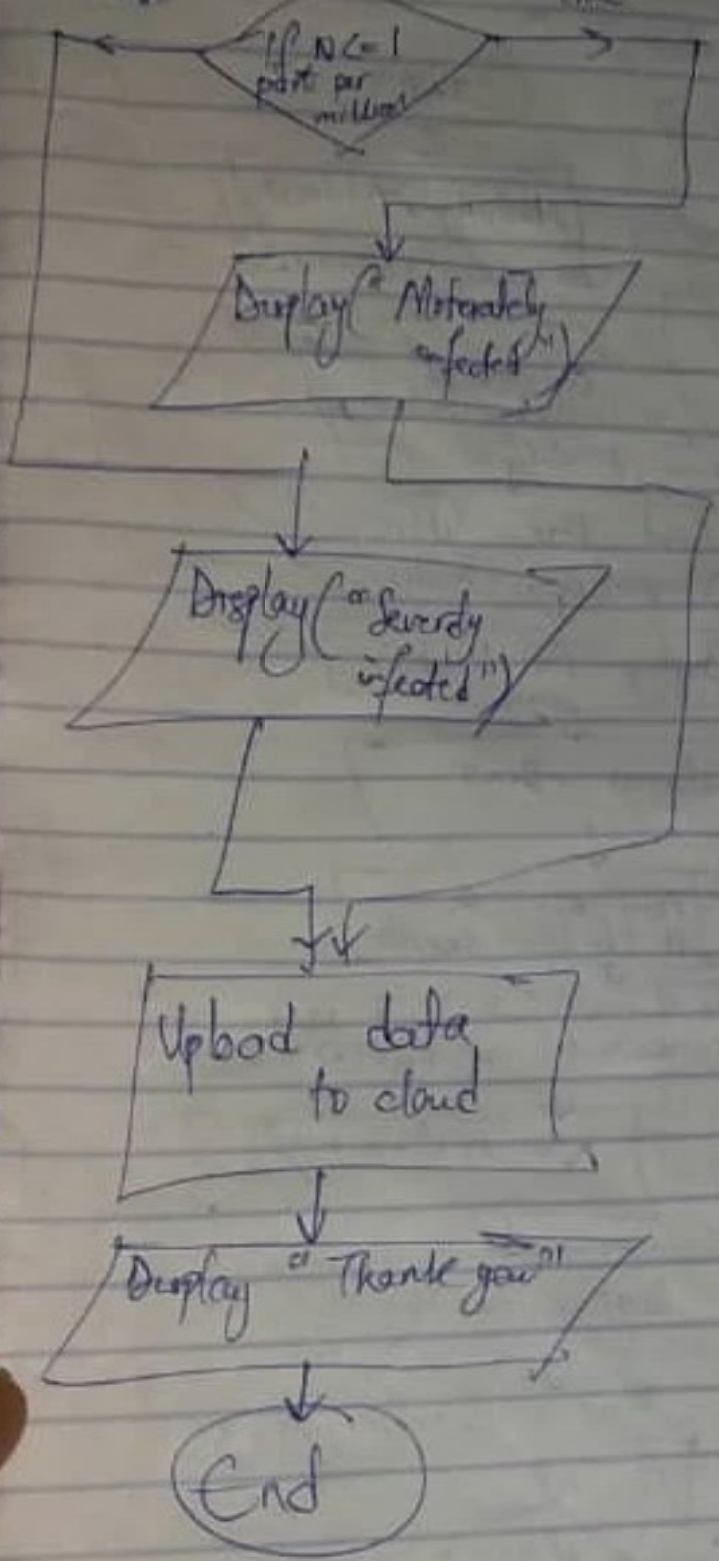
STEP14: If (N<=0) {
print("Name" is not infected")}

STEP15: If (N <= 0.01 part per million) {
print("You are midly infected"}

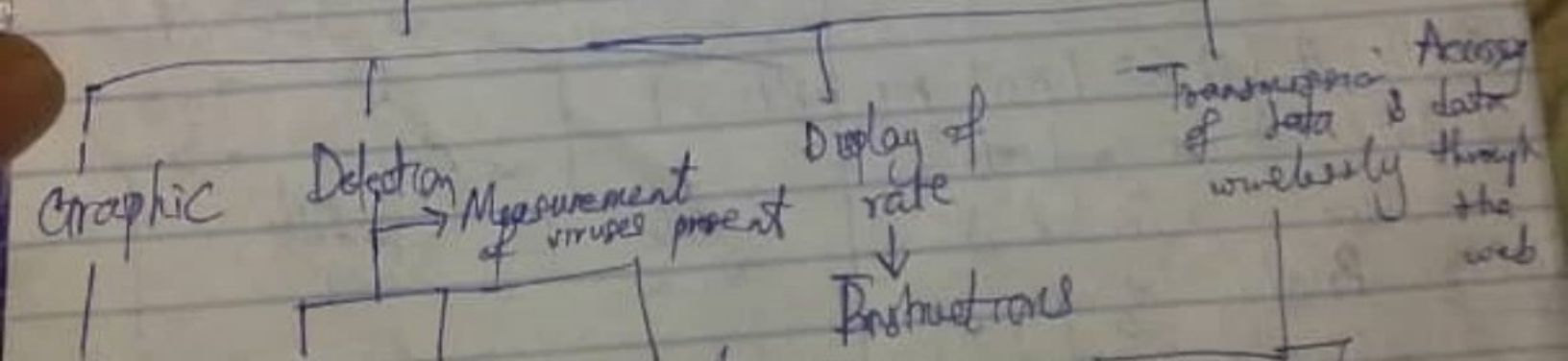
STEP16: If (N <= 1 part per million)
{Print("You are moderately infected"}}
else
Print("You are severely infected")

STEP17: Uploading of the result to cloud.

STEP18: Print "Thank you"


If NC=1
Display("Moderately infected")
Display("Severly infected")
Upload data to cloud
Display "Thank you"
End

(IV) APP


Graphic
Detection
Measurement of viruses present
Display of rate
Instructions
Transmission of data
Access data through the web