

Gujarat Technological University



Sarvajani College of Engineering
and Technology



Department of Computer Engineering
Year : 4TH Semester : VIII

Subject : Project-II (2180706)

Project Title : Internet of Brain

Academic year
2020-2021

About Team

Team Leader Name : Kartik Gondaliya (170420107015)

Team Members Name : Sahil Shingala (170420107051)
Bhumi Chavda (180423107001)
Dhwani Desai (180423107002)
Dhrumi Kansara (180423107005)

Guide Name : Prof. (Dr) Keyur Rana

Internet Of Brain

Brain Complexity



- 100 billion neurons.
- Every neuron is connected with 1000-10000 other neurons.
- Connections change over time.
- It's like fingerprint.

Available solutions

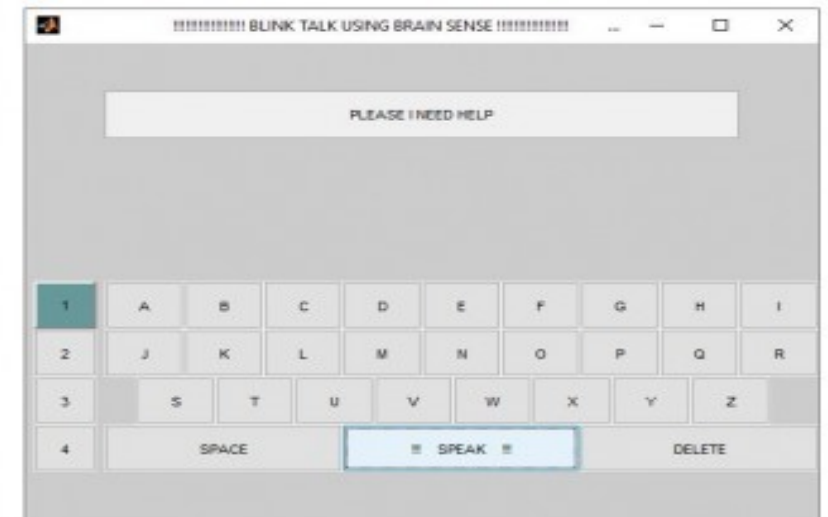
1. Games



2. Wheel chairs



3. Typing



Way Forward

	Emotive	Neurosky
Channel	14	01
Meditation	✓	✓
Attention	✓	✓
Raw-data ML(16 bit)	5★	1★
ASIC_EEG power (24 bit) ML	4★	1★
Eye blink	✓	✓
9X motion censer	✓	✗



OUR MODULE

eVidhya

Major Problem in E-learning

1. Concentration
2. Eye Strain
3. Screenshots



Concentration is the key to success



Articles

[Home](#) / [Chandigarh](#) / [Online classes leading to stress, eye problems in children, say parents](#)

Online classes leading to stress, eye problems in children, say parents

Health problems are cropping up as screen time increases for students due to schools being shut because of the Covid-19 pandemic

CHANDIGARH Updated: Jul 20, 2020 21:18 IST

Eyestrain from digital classes a major health concern for students

Doctors reporting many cases since online classes started in the state, recommend extra care



THE HINDU



MENU



HOME

NEWS

CORONAVIRUS

OPINION

BUSINESS

SPORT

CROSSWORD+

ENTERTAINMENT

Free Games

STATES ▼

ANDHRA PRADESH

KARNATAKA

KERALA

TAMIL NADU

TELANGANA

OTHER

NEWS > STATES > ANDHRA PRADESH

ANDHRA PRADESH

Online classes: students complain of eye and ear problems



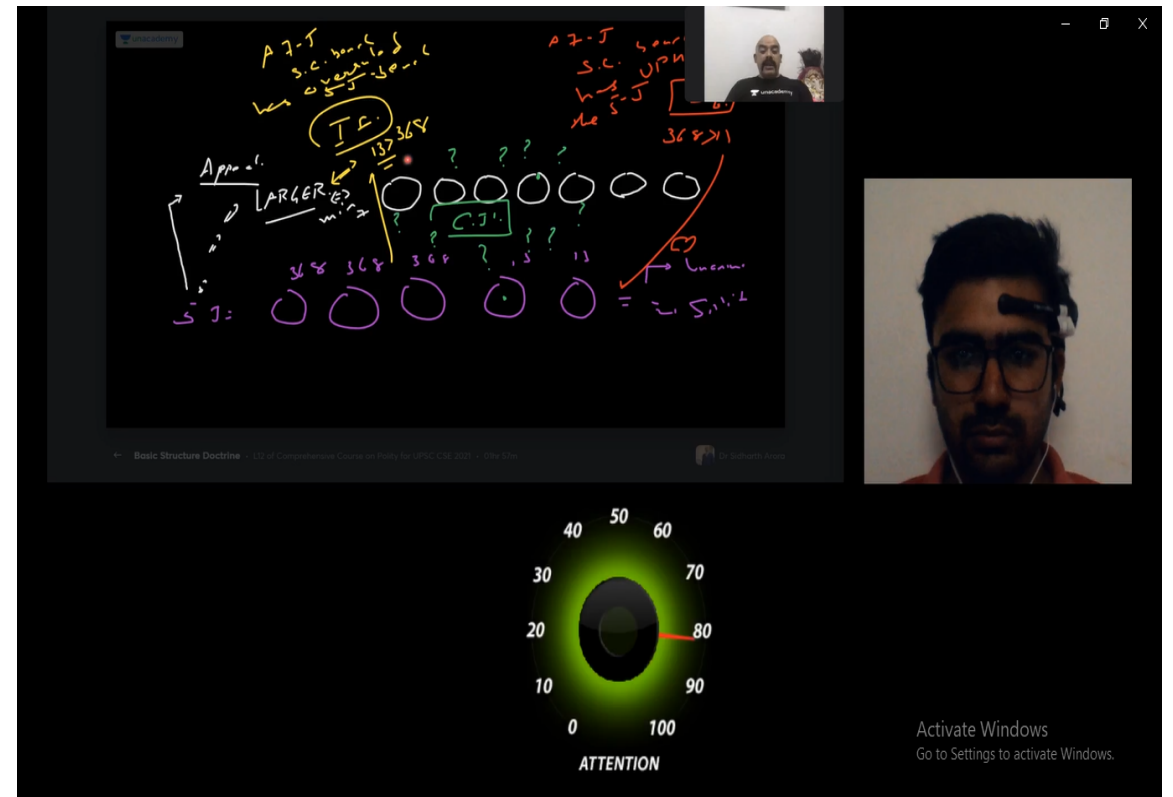
B. Madhu Gopal

B. MADHU GOPAL VISAKHAPATNAM, JUNE 18, 2020 22:32 IST

UPDATED: JUNE 19, 2020 08:29 IST

Features

- Taking Attention value during video.
- Based on attention Resume/Pause.
- Fastest Screen Shots using Eye-wink.



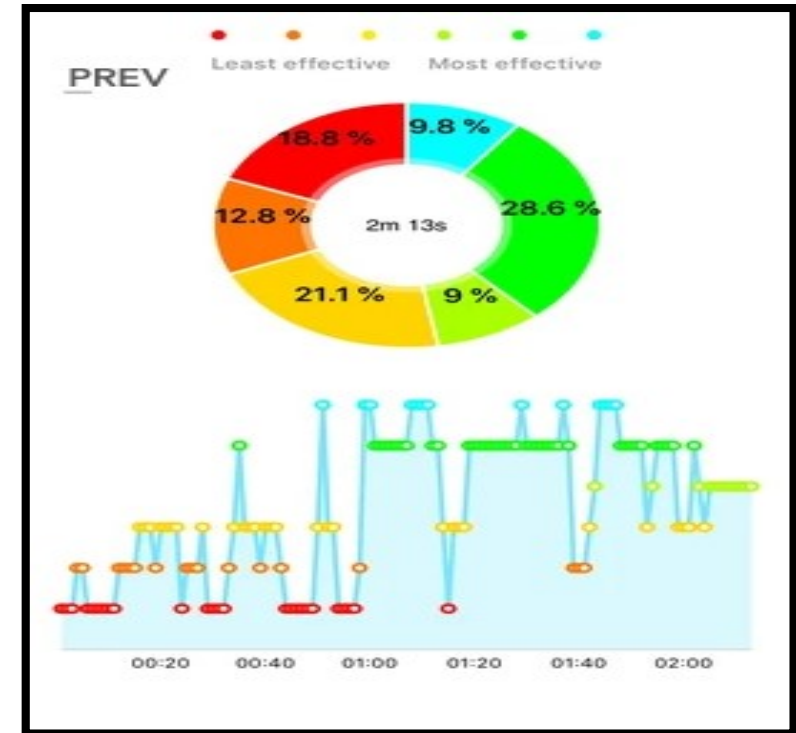
Features

- 50-10 division.
- 10 min Eye relaxation based on Meditation value.



Features

- Teacher can generate student's attention report.
- Fetching student's disinterest in particular portion of lecture





Summary



Work Done

Future Claim

Device Automation

True/lie detection
Using 8 signals
Using Raw Data
Using Beta Signal.
Implement ML using NeuroSky
Attention level
One Device can be controlled.

eVidhya

1. According to
Student's
Concentration
Video will be
Paused/Resume

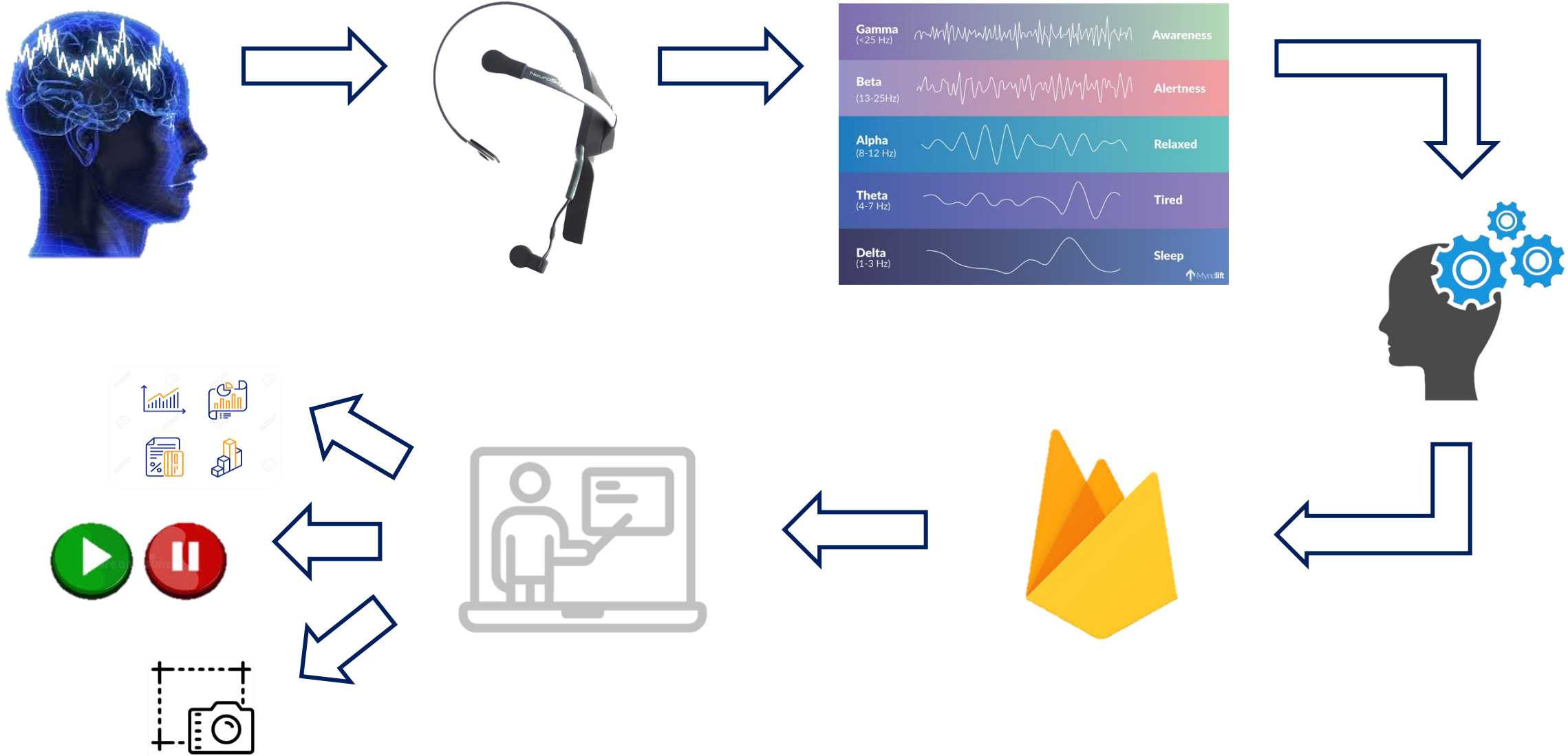
eVidhya

1. Remove Arduino
2. Web Portal
1. Meditation
2. Screenshot
3. Report Analysis

Additional Feature

We try to classified left and right blinks

Flow Of System





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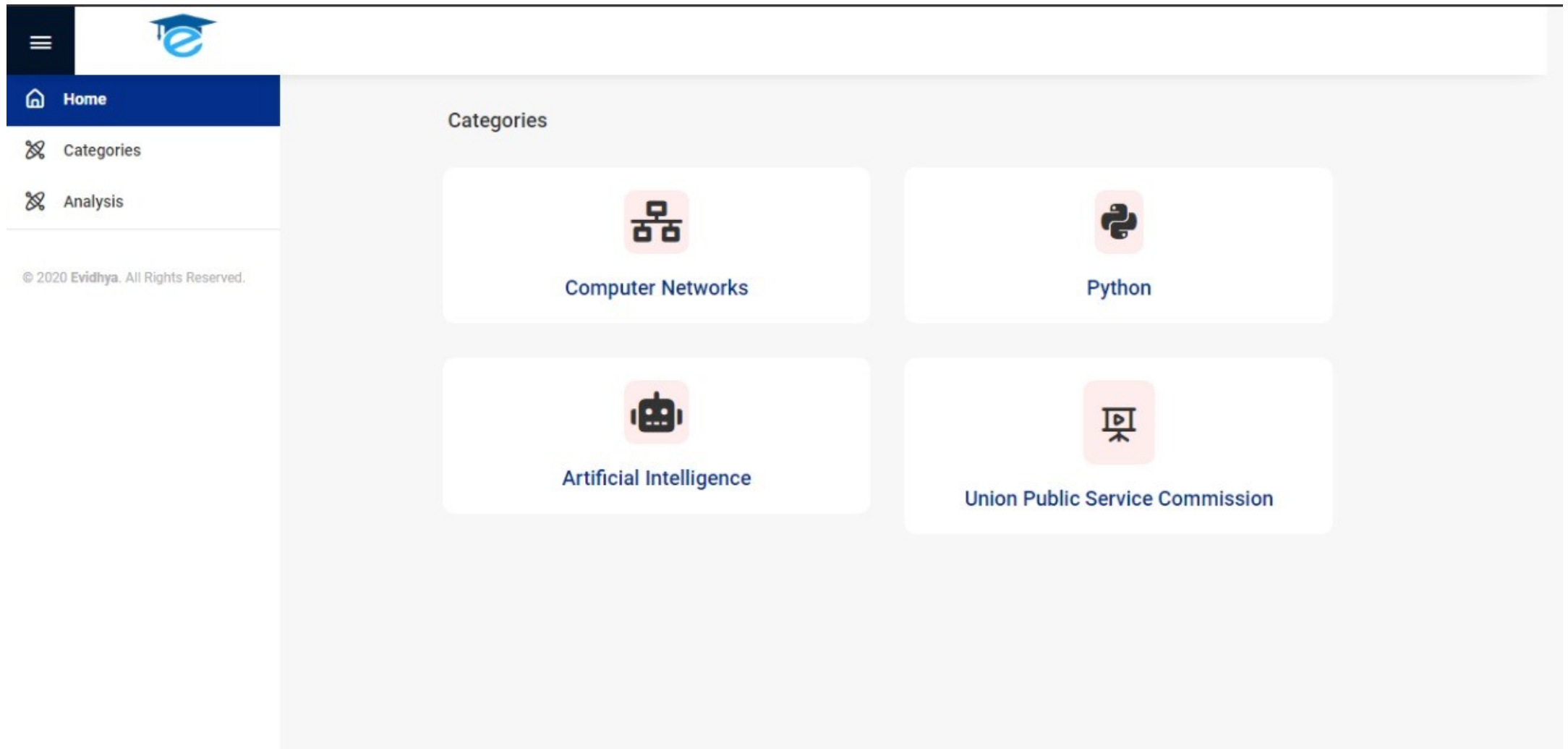
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Web portal





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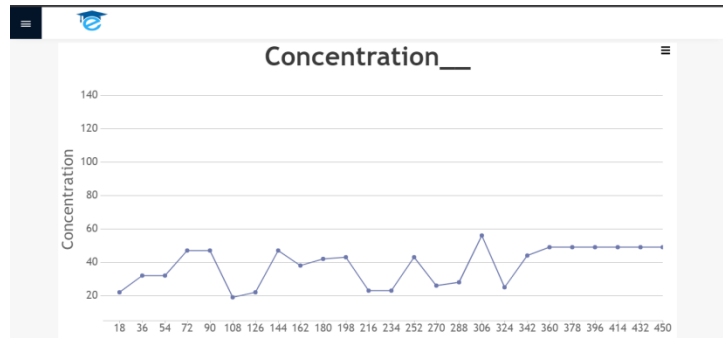
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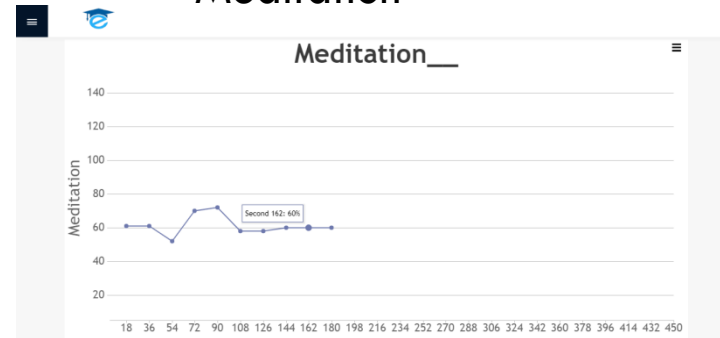
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Attention and meditation graph

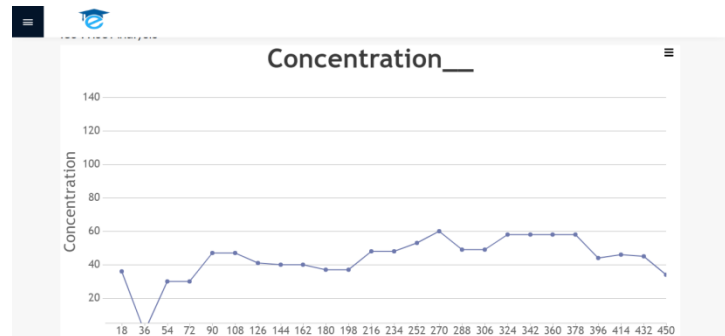
Attention



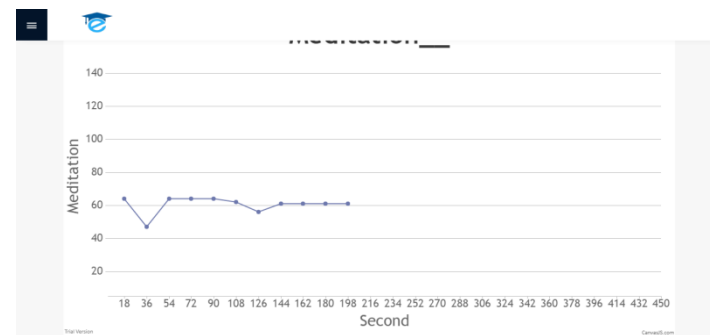
Meditation



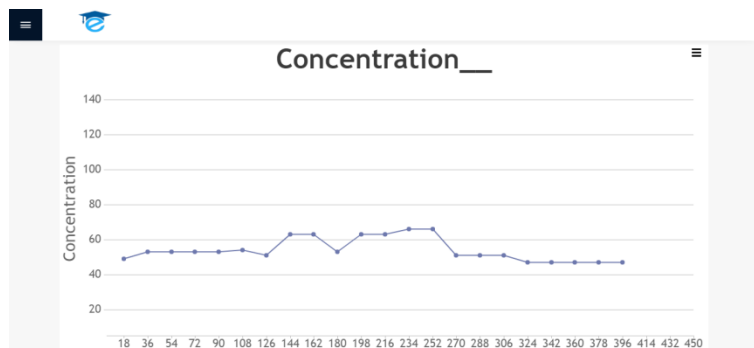
Attention



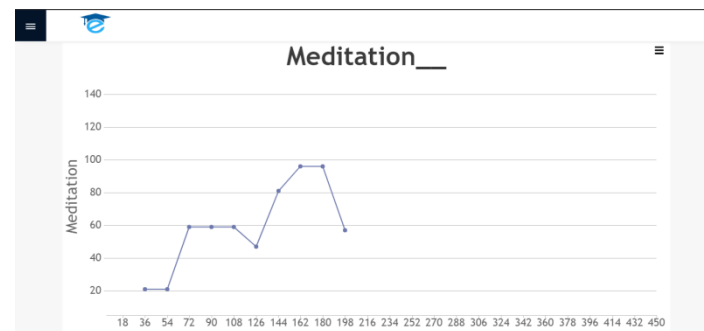
Meditation



Attention



Meditation





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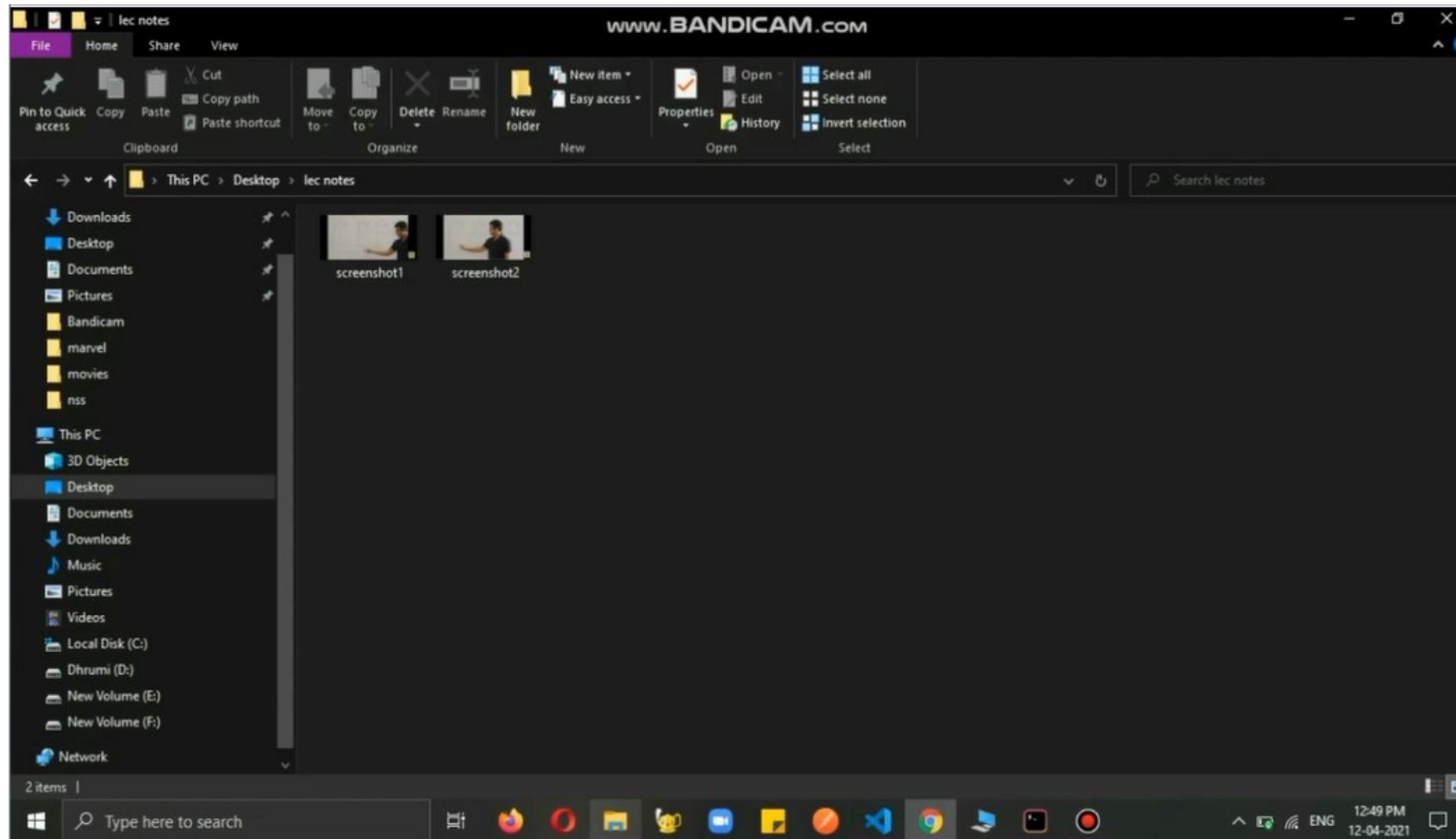
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Screenshot using eye blink

- Student can easily take a screenshot of particular screen at a time using just by their blink.





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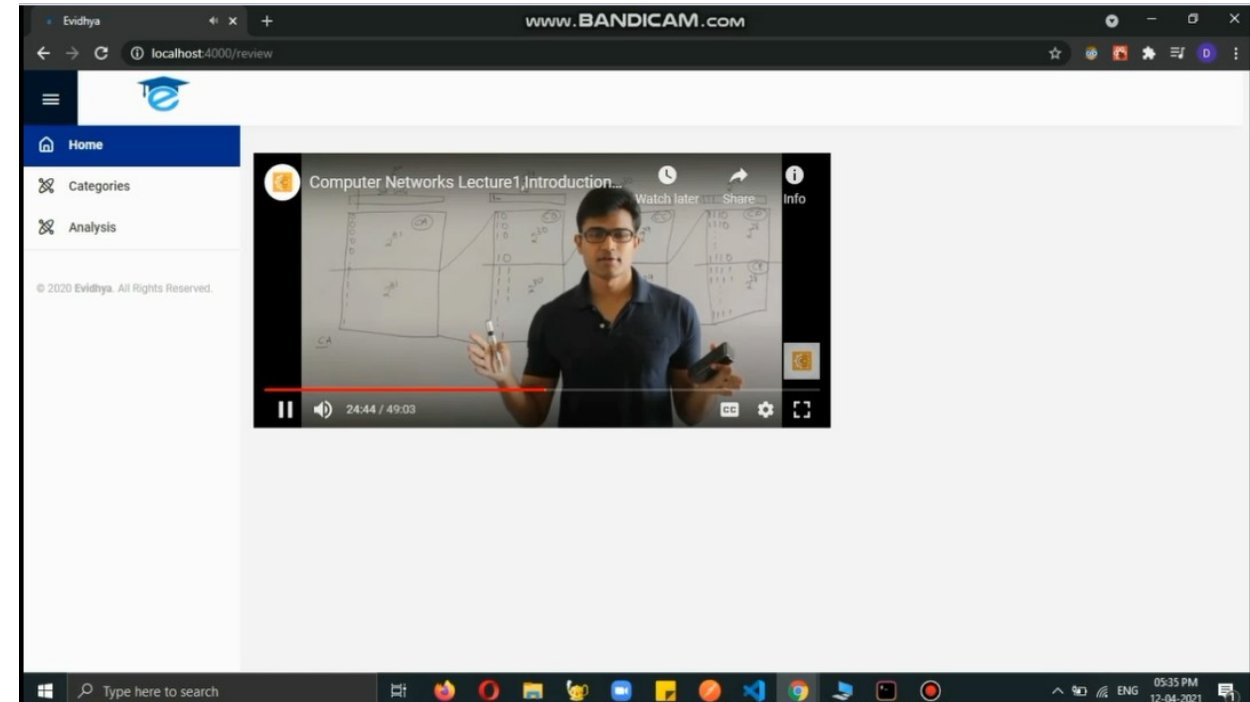
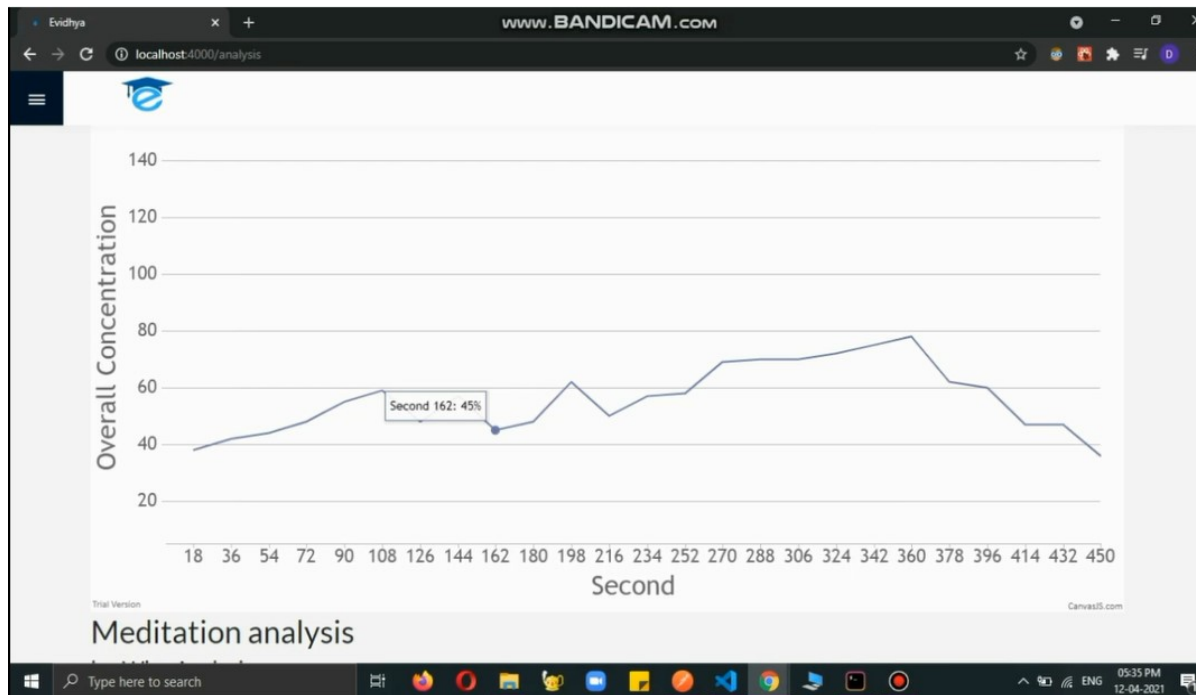
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Students average graph and analysis

- By click on any point on Graph, Educator can get at which topic concentration was lapse.





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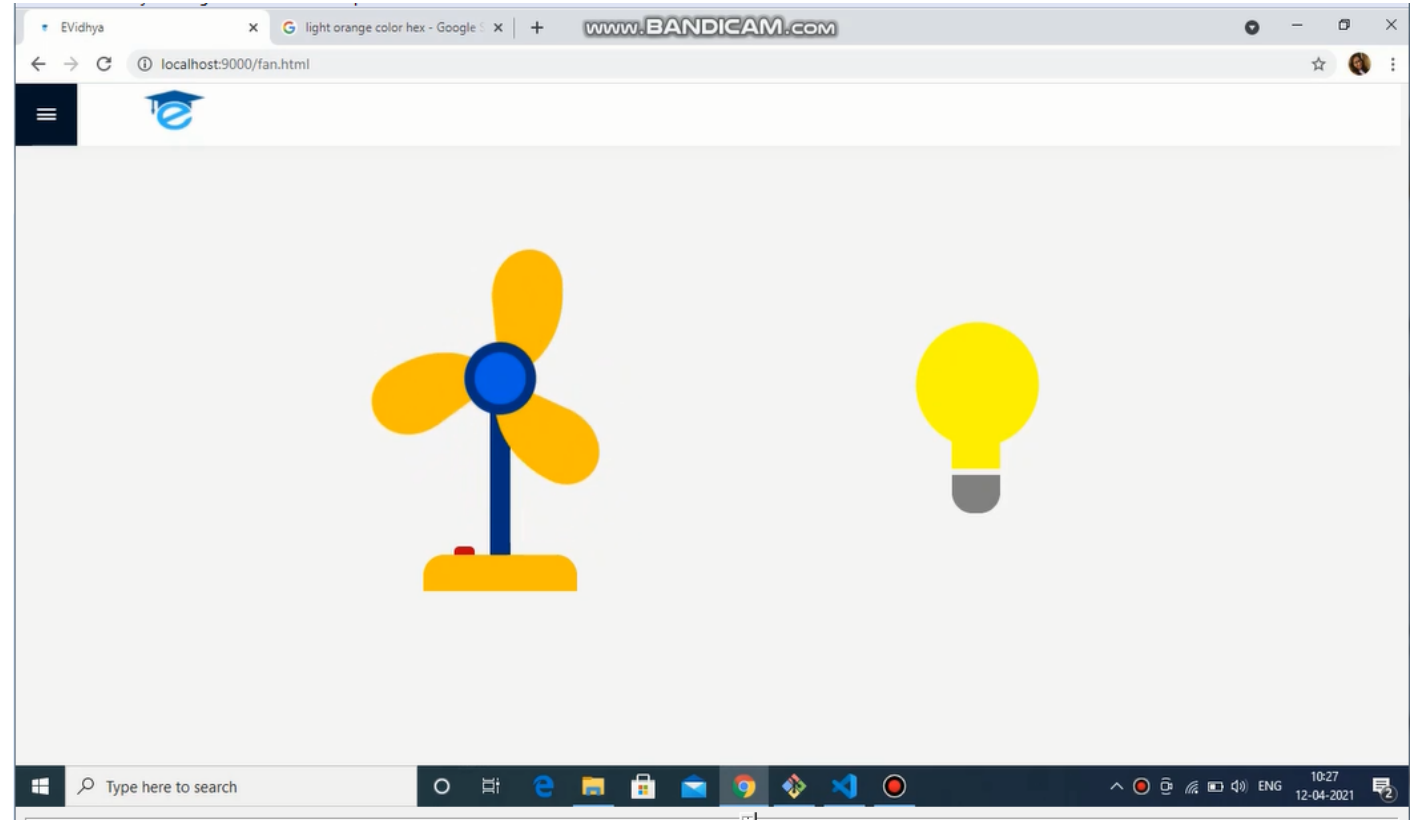
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Additional Feature

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Device automation using eye blink

- By applying machine learning we successfully separated both right and left blinks.
- It enable a student to control their surrounding devices by just using their left or right blinks.





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Question Answer

Thank You