

**“Mindමුරු”: MOBILE APPLICATION FOR IMPROVE MENTAL
HEALTH FOR KIDS WHO HAVE ADHD,OCD AND ANXIETY**

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Supervisor: Mr. Koliya Pulasinghe

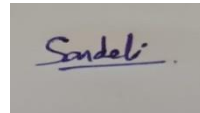
BSc. (Hons) in Information Technology Specializing in
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Sri Lanka

Declaration

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The above candidate has carried out research for the bachelor's degree dissertation under my supervision.

Signature:

Date: 08/01/2024

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Supervisor: Mr. Koliya Pulasinghe

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Figure 1: search research papers and other important information details

The image displays two screenshots of the IEEE Xplore search results page. The top screenshot shows search results for the query "child%20ADHD&highlight=true&returnFacets=ALL&returnType=SEARCH&matchPubs=true&ranges=2020,...". The bottom screenshot shows results for "child%20anxiety&highlight=true&returnFacets=ALL&returnType=SEARCH&matchPubs=true&ranges=2020,...". Both screenshots feature a left-hand navigation panel with filters for "Show" (All Results, Subscribed Content, Open Access Only), "Year" (Range, Single Year), "Author", "Affiliation", "Publication Title", "Publisher", and "Supplemental Items". The main content area lists search results with titles, authors, conference names, and years. The right-hand side contains promotional banners for IEEE eBooks and the IEEE Open Journal of Engineering in Medicine and Biology.

Search Results for ADHD:

- Early Detection and Effective Treatment for ADHD using Machine Learning for Sri Lankan Children**
R.M.I.S Kumarasingha; D.M.C.L.B Dissanayake; P.S.R Pathirathne; K.M.M.Y.S Ranathunga; Samantha Rajapakshe; Vindhya Kalapuge
2023 5th International Conference on Advancements in Computing (ICAC)
Year: 2023 | Conference Paper | Publisher: IEEE
- Differentiating Brain Connectivity Networks in ADHD and Normal Children using EEG**
Roqia Moqadam; Nazila Loghmani; Alireza Khorrami Moghaddam; Armin Allahverdy
2022 30th International Conference on Electrical Engineering (ICEE)
Year: 2022 | Conference Paper | Publisher: IEEE
- Individualized Edutainment and Parent Supportive Tool for ADHD Children**
Achintha Thennakoon; Deneth Perera; Shanuka Sugathapala; Samadhi Weerasingha; Pradeepa Samarasinghe; Dulangi Dahanayake; Vijani Piyawardana
2020 2nd International Conference on Advancements in Computing (ICAC)

Search Results for Anxiety:

- UVM KID Study: Identifying Multimodal Features and Optimizing Wearable Instrumentation to Detect Child Anxiety**
Bryn C. Loftness; Julia Halvorson-Phelan; Aisling O'Leary; Nick Cheney; Ellen W. McGinnis; Ryan S. McGinnis
2022 44th Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC)
Year: 2022 | Conference Paper | Publisher: IEEE
Cited by: Papers (4)
- A Computer Software SPSS Study on the Effect of Taste Preference on Anxiety of Preschool Children**
Hongmei Hu; Qingyan Deng; Xin Zhao; Fang Tan
2020 International Conference on Artificial Intelligence and Education (ICAIE)
Year: 2020 | Conference Paper | Publisher: IEEE
- Research on the Interactive Product Design for Children with ASD Based on Cognitive Behavioral Therapy**
Xiaowen Liu; Xiaowei Liu; Ni Liu
2023 4th International Conference on Intelligent Design (ICID)
Year: 2023 | Conference Paper | Publisher: IEEE

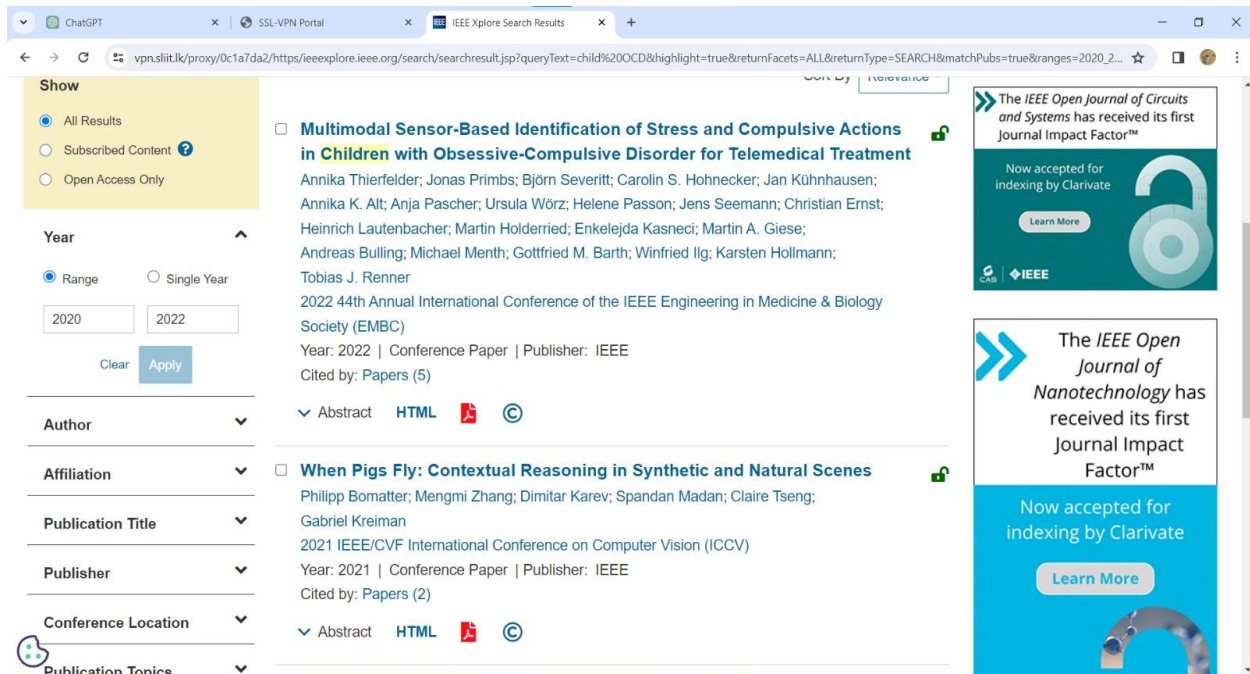
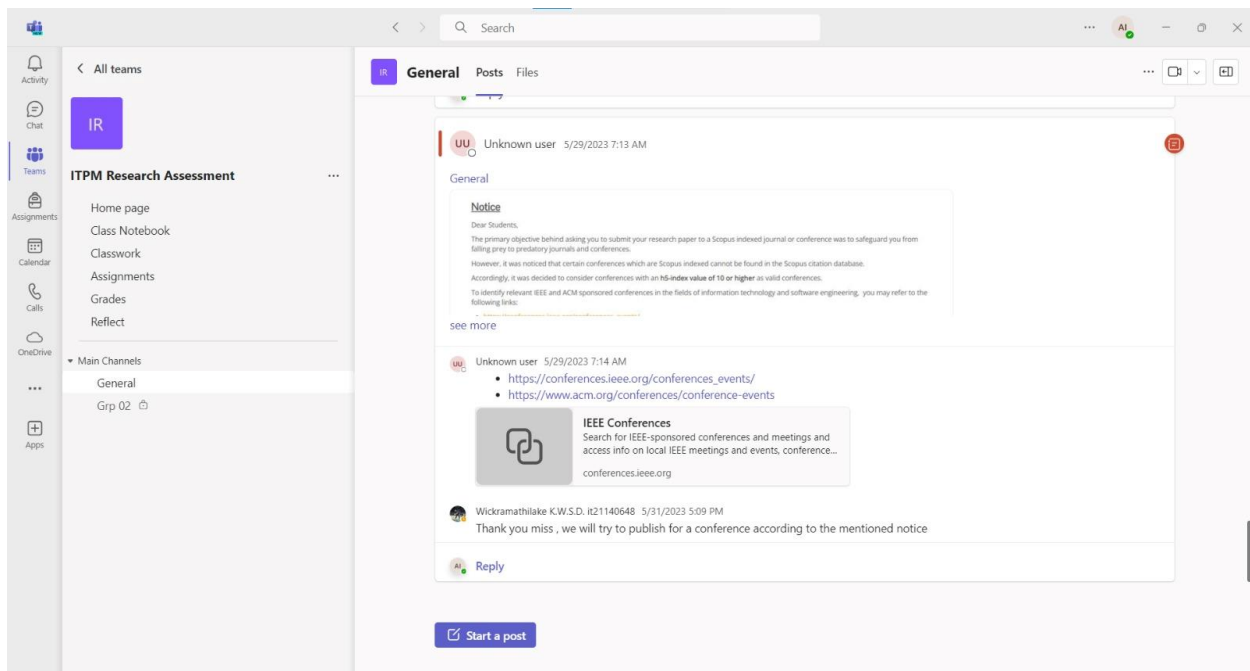


Figure 2: Requesting other information details



AutoSave

ADHD Test - Saved to this PC

Search

Abeywickrama SA, it20646042

Comments

Share

FileHomeInsertPage LayoutFormulasDataReviewViewAutomateHelp

Paste

Aptos Narrow

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Merge & Center

General

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Conditional Formatting

Format as Table

Cell Styles

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Cells

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Sort & Filter

Select

Sensitivity

Add-ins

Analyze Data

EditingSensitivityAdd-ins

A1

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Weight gain		introvert	popping up	stressful	having nightmares	avoids people	or active	feeling negative	trouble concentrating	blaming yourself	hallucinations	repetitive behaviour	seasonally	increased energy	Disorder
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 anxiety
2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1 ADHD
3	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1 ADHD
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 anxiety
5	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1 ADHD
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 anxiety
7	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0 anxiety
8	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0 anxiety
9	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1 ADHD
10	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0 anxiety
11	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1 ADHD
12	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0 anxiety
13	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0 anxiety
14	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0 anxiety
15	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1 ADHD
16	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0 anxiety
17	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1 ADHD
18	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0 anxiety
19	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1 ADHD
20	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1 ADHD
21	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1 ADHD
22	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0 anxiety
23	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0 anxiety
24	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1 ADHD
25	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1 ADHD
26	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0 anxiety
27	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1 ADHD
28	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0 anxiety
29	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0 anxiety
30	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0 anxiety
31	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0 anxiety
32	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1 ADHD
33	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0 anxiety
34	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1 ADHD
35	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0 anxiety

The screenshot shows a Microsoft Teams meeting interface. In the center, an Excel spreadsheet titled 'ADHD_Final - Sent to the RC' is displayed. The spreadsheet contains a table with 29 rows of data. The columns include demographic information (Age, Sex, Race) and various clinical scores (Number of Number of Poverty, SAD, GAD, Social Phobia, ADHD, CD, Depression, GDD, Number of Impairments). On the right side of the Teams window, a large circular logo with the letters 'AI' is visible, along with the name 'Abeywickrama S.A. it20646042'.

	Age	Sex	Race	Number of Number of Poverty	SAD	GAD	Social Phobia	ADHD	CD	Depression	GDD	Number of Impairments
1	0	F	0	2	1	1	0	1	1	0	1	4
2	1	M	1	2	0	3	1	0	0	1	0	5
3	2	F	1	3	2	1	0	1	1	0	0	0
4	3	F	0	4	2	0	0	0	0	0	0	0
5	4	F	0	5	2	3	0	1	1	1	1	7
6	5	M	0	3	0	0	0	0	0	0	0	0
7	6	F	0	2	2	0	0	0	0	0	0	0
8	7	M	0	3	2	0	0	1	1	0	0	2
9	8	M	1	2	2	2	1	0	0	0	0	0
10	9	M	0	4	1	0	0	0	0	0	0	0
11	10	M	0	2	2	0	0	1	0	0	0	0
12	11	F	1	2	1	0	0	0	0	0	0	4
13	12	M	1	3	1	0	1	0	0	0	0	0
14	13	P	1	3	1	2	0	1	0	0	0	0
15	14	P	2	2	3	1	0	0	1	0	0	2
16	15	M	1	3	1	1	1	0	0	0	0	0
17	16	M	1	3	2	1	0	0	0	0	1	3
18	17	M	1	5	1	1	1	1	0	0	0	0
19	18	M	1	2	1	1	1	0	0	0	0	0
20	19	P	1	5	1	2	0	0	0	0	0	0
21	20	M	1	5	1	1	0	0	0	0	0	4
22	21	M	0	2	1	1	0	0	0	0	0	2
23	22	M	0	2	2	0	0	0	1	0	0	4
24	23	F	1	5	1	1	0	1	0	0	0	1
25	24	F	1	2	1	0	0	0	1	1	0	1
26	25	M	1	5	1	0	0	0	1	0	0	3
27	26	M	0	2	1	0	0	1	0	0	0	0
28	27	F	1	2	1	3	0	0	0	0	0	0

Figure 5: Data modeling

The screenshot shows a Jupyter Notebook titled 'ADHD Classification.ipynb' in a VS Code environment. The notebook contains Python code for hyperparameter tuning using GridSearchCV. The code defines a grid of parameters for a DecisionTreeClassifier and performs a search to find the best combination. The output shows that the best estimator is a DecisionTreeClassifier.

```

In 130: # hyper parameter tuning
1
2
3 from sklearn.model_selection import GridSearchCV
4
5 grid_params = {
6     'criterion': ['gini', 'entropy'],
7
8     'max_depth': [3, 5, 7, 10],
9     'min_samples_split': range(2, 10, 1),
10    'min_samples_leaf': range(2, 10, 1)
11 }
12
13 grid_search = GridSearchCV(dtc, grid_params, cv = 5, n_jobs = -1, verbose = 1)
14 grid_search.fit(X_train, Y_train)

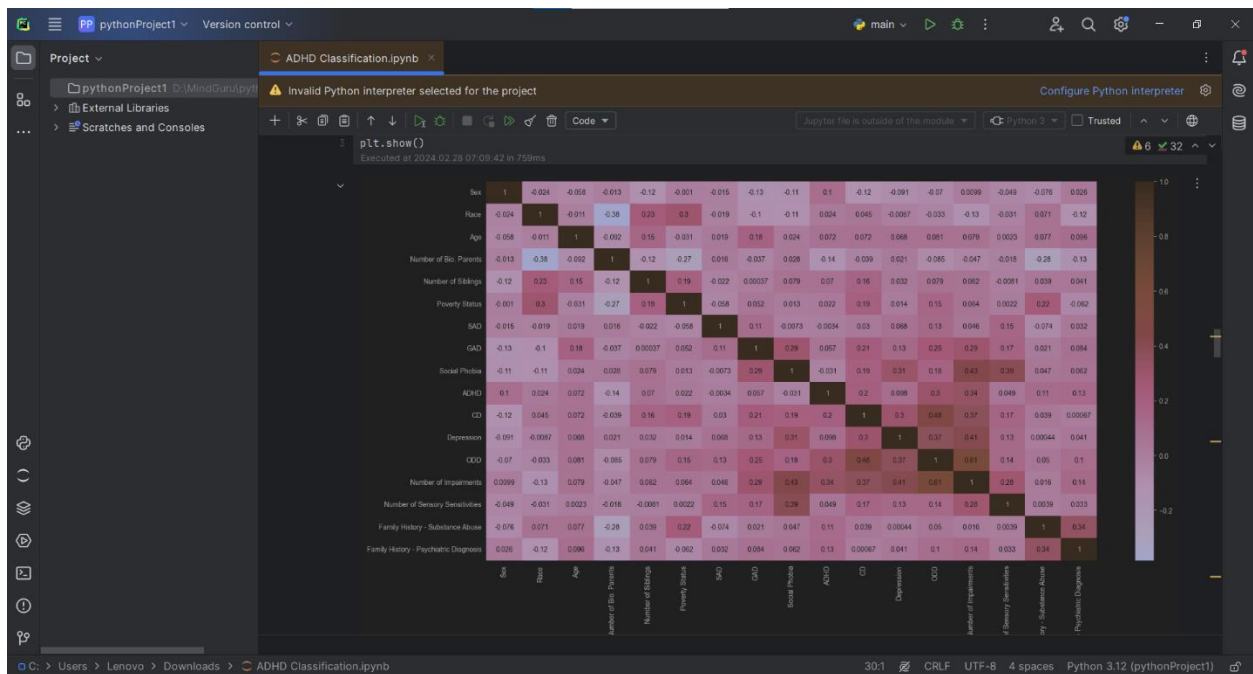
```

Output:

```

Out 130: GridSearchCV
estimator: DecisionTreeClassifier
DecisionTreeClassifier

```

```

LOG Student-003
LOG Ranil Rajapaksha
LOG All answers: [1, 10, 2, 3, 1, 1, 1]
LOG Prediction Message: Less Chance to Have ADHD Symptoms

```

Figure 6: Discussion about data model

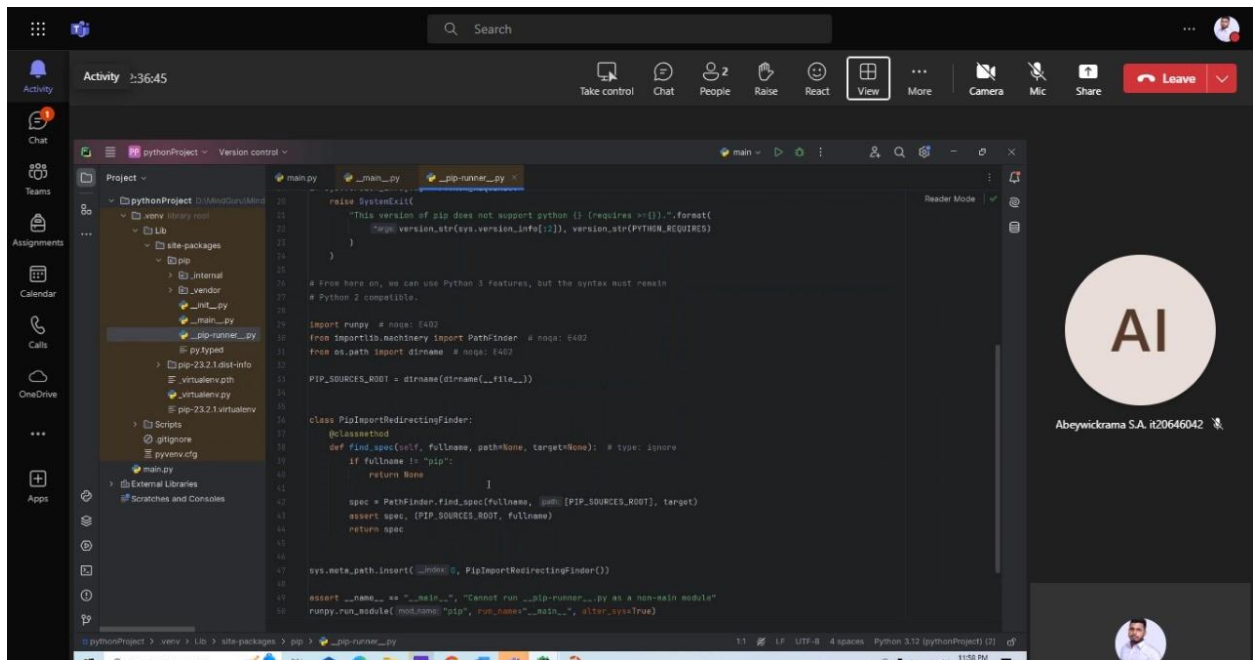


Figure 7: School approve letter for collect to data for research



මාර/කැකණදුර විජයබා කනිටු විදුහල

වෙහෙරහේන පාර , කැකණදුර

දිනය : 2024.03.14

ශ්‍රී ලංකා තොරතුරු තාක්ෂණ ආයතනය

06/10/2023

දත්ත ලබාගැනීම සඳහා අවසර ලබාදීම

ශ්‍රී ලංකා තොරතුරු තාක්ෂණ ආයතනයේ අවසන් වසර ඉගෙනුම ලබන සඳලි අබේවික්‍රම , අංජලි විජේසිංහ , දිනේෂ් ජයසිංහ සහ ලහිරු ගයාගාන් යන සිසුන්ගේ අවසන් වසර පර්යේෂණය සඳහා දත්ත ලබාගැනීමට මාර/කැකණදුර විජයබා කනිටු විදුහල අවසර ලබාදුන් බව සහතික කරමි.


විදුහලපති

G. K. P. Madhushrini
Principal
MR/ Kekanadura Vijayaba K.V.
Kekanadura

Figure 8: Introduce mobile app for teachers



Figure 9: Data collection in schools and pre schools







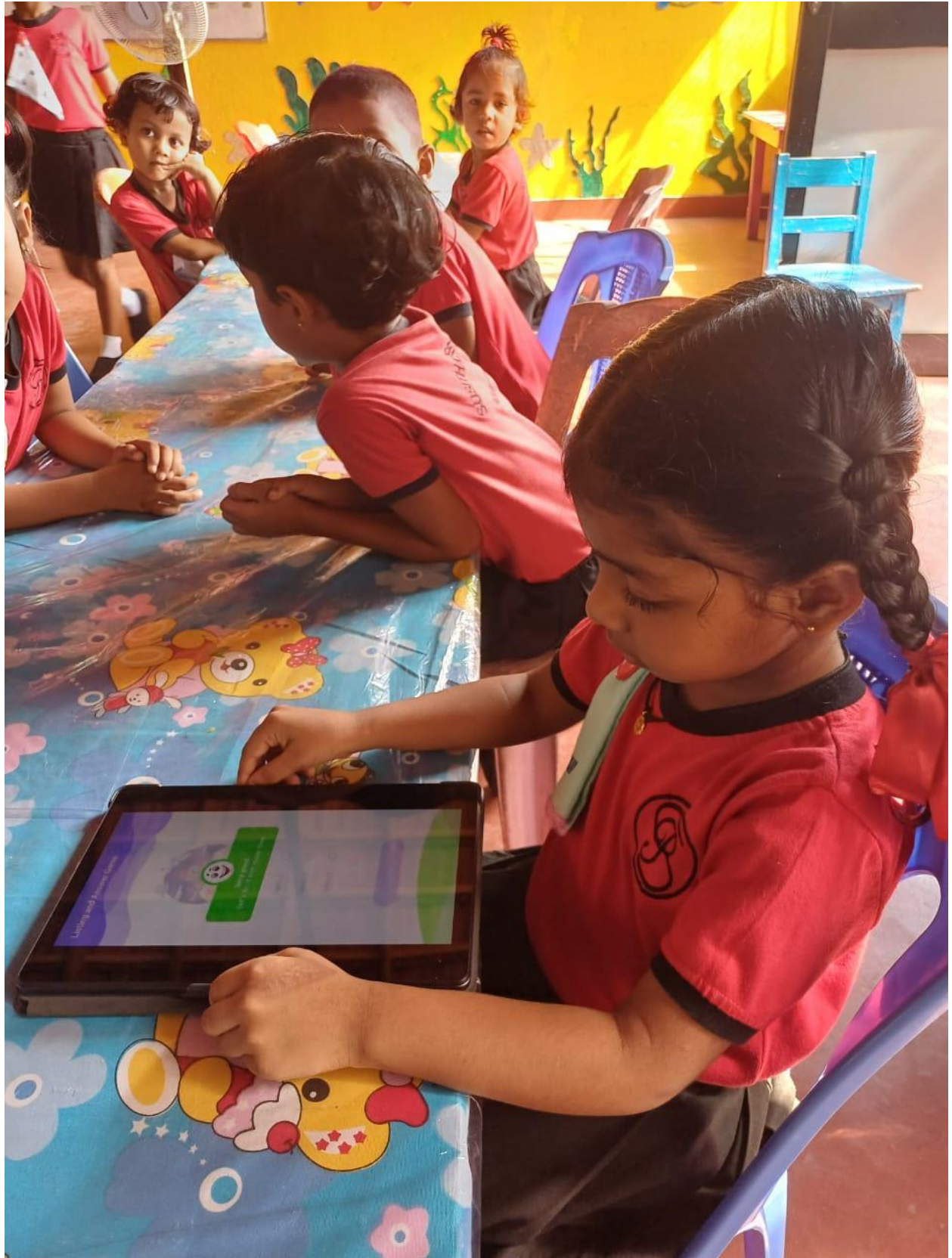
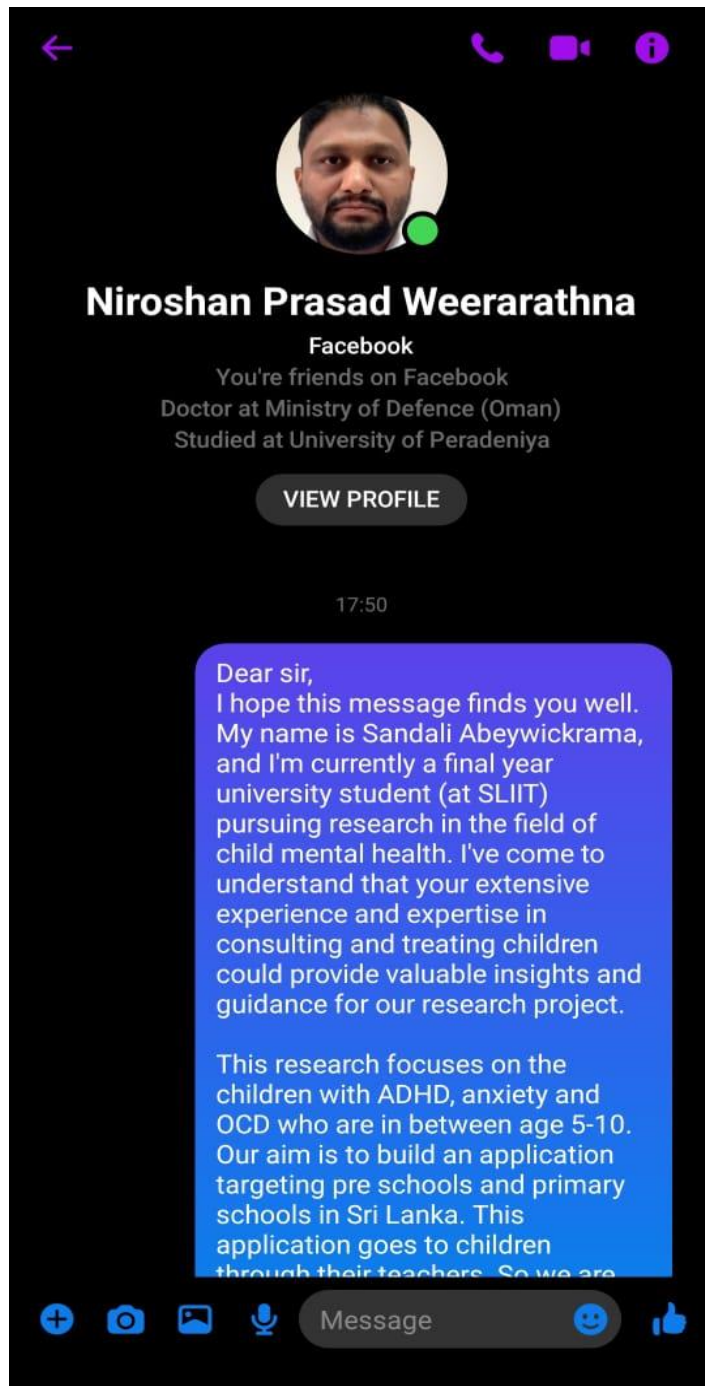








Figure 10: Contact medical experts



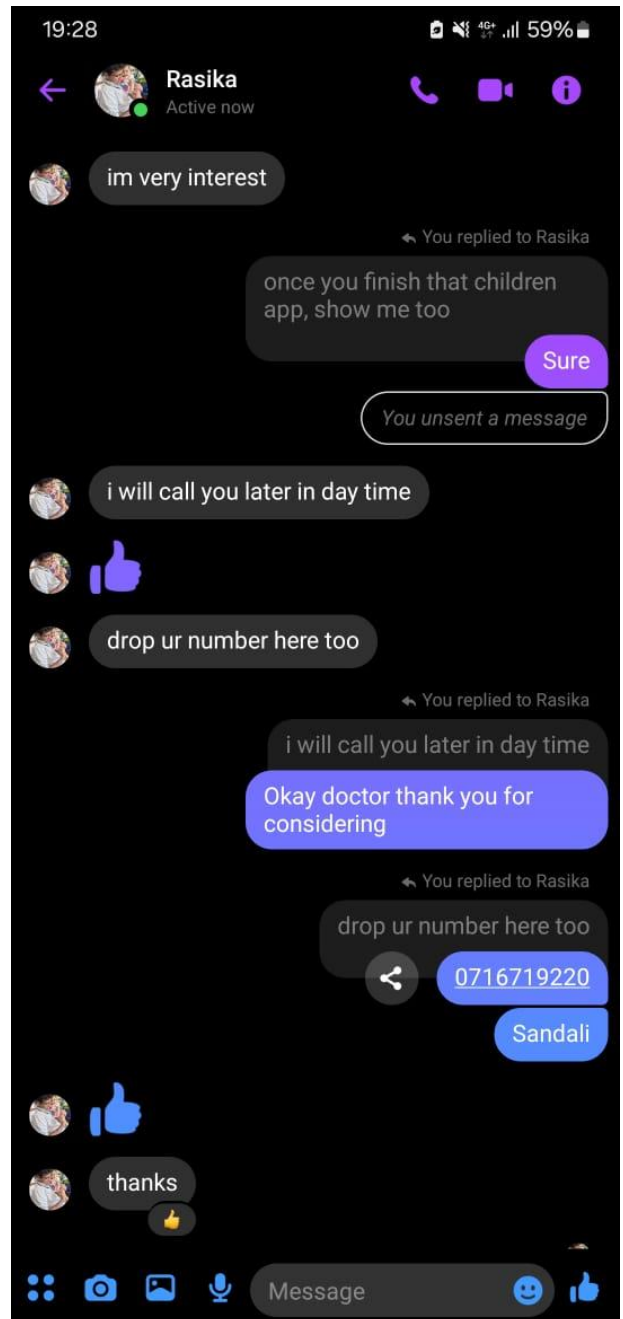
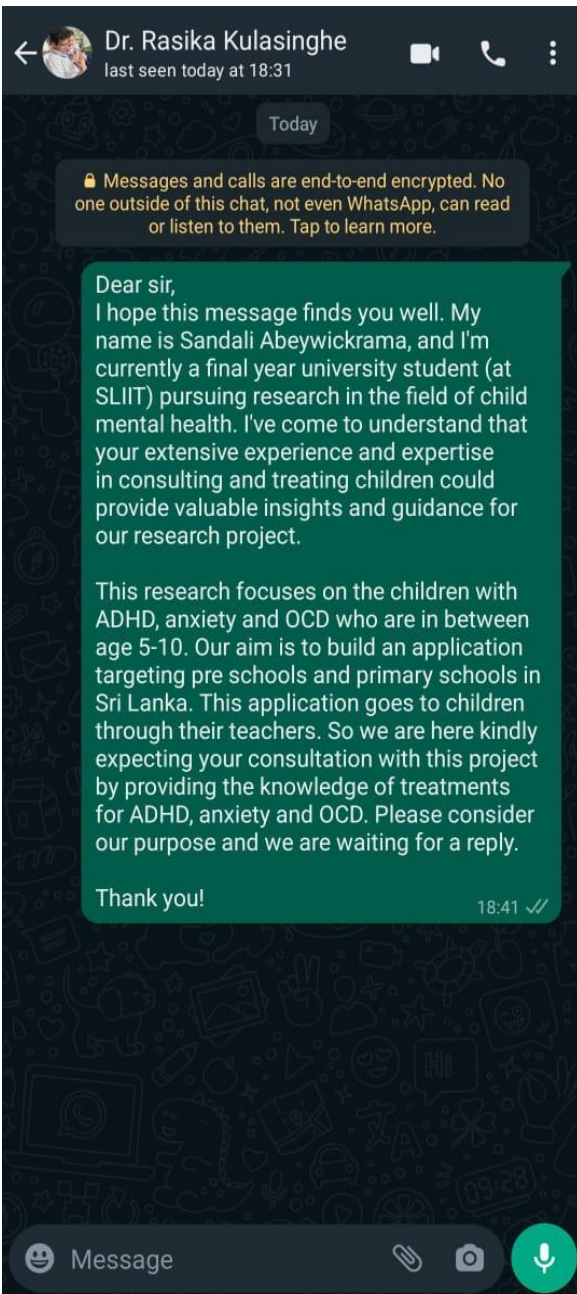


Figure 11: Gantt chart

