

# **Smart Travel Recommendation and Tourism Support Mobile Based System**



Group ID: 2023-308

Status Document II

**Sri Lanka Institute of Information Technology**

**B.Sc. Honors Degree in Information Technology**

**Specialized in Information Technology**

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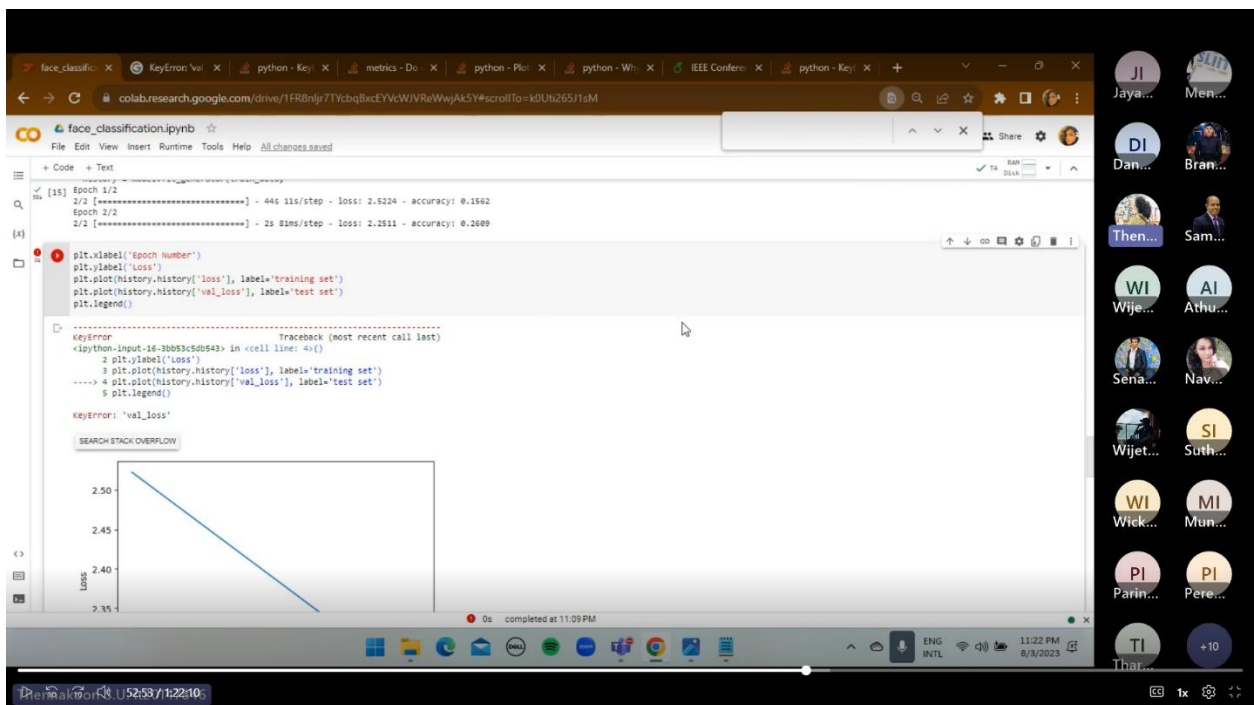
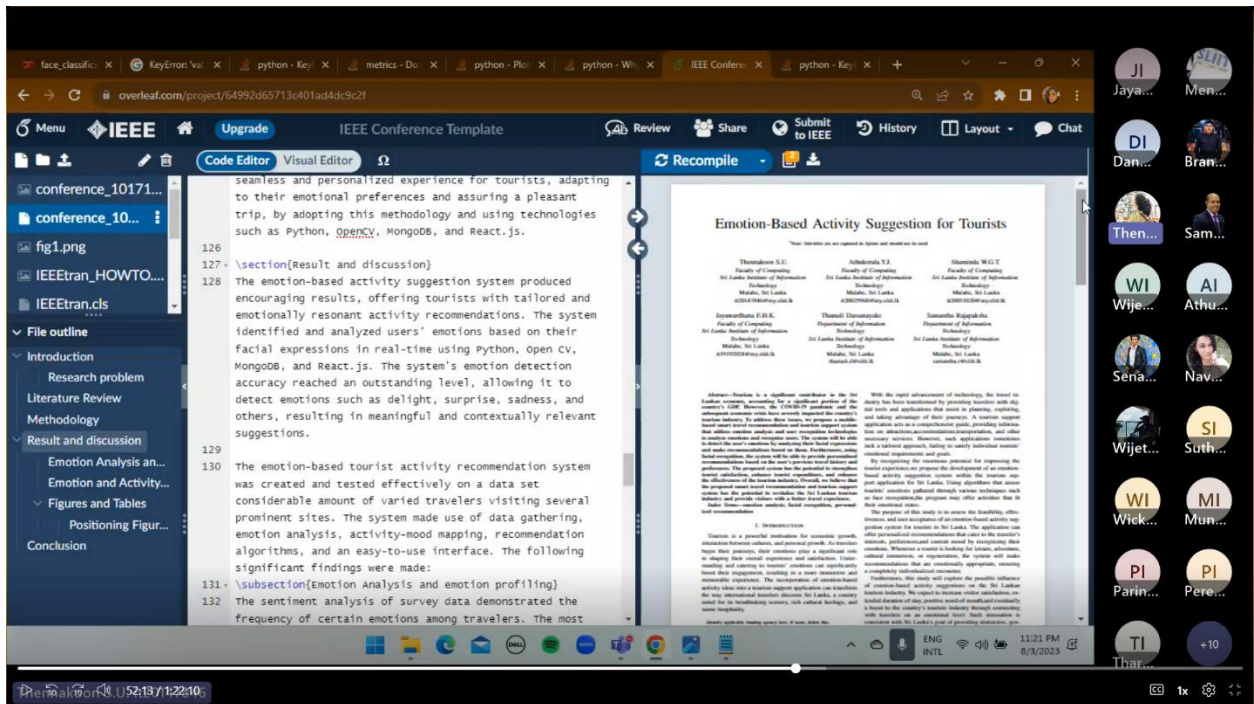
# 1 Microsoft Teams Group

The screenshot shows the Microsoft Teams interface for the 'TMP-23-308 Research Group'. The left sidebar contains navigation icons for Activity, Chat, Teams, Assignments, Calendar, Calls, Files, and Apps. The main content area shows the group's name and a search bar. Below the search bar, there are two sections: 'Owners (3)' and 'Members and guests (3)'. The 'Owners' section lists three members: Thamali Dassanayake (Lecturer, Malabe), Samantha Rajapaksha (Head of Department, Malabe), and Athukorala.Y.J. it20029968 (Owner). The 'Members and guests' section lists three members: Shaminda W.G.T it20051020 (Member), Thennakoon S.U. it20147846 (Member), and Jayawardhana E.H.K it1919... (Member).

Name	Title	Location	Tags	Role
Thamali Dassanayake	Lecturer	Malabe		Owner
Samantha Rajapaksha	Head of Department	Malabe		Owner
Athukorala.Y.J. it20029968				Owner
Shaminda W.G.T it20051020				Member
Thennakoon S.U. it20147846				Member
Jayawardhana E.H.K it1919...				Member

The screenshot shows the 'General' channel of the 'TMP-23-308 Research Group'. The top bar includes a search bar and a 'Meet' button. The channel content shows a meeting announcement: 'Meeting in "General" started' with 2 replies from you and IT19192024. Below this, there is a post from Thennakoon S.U. it20147846 dated 7/31 10:28 PM. The post contains three images: a placeholder for a logo, a placeholder for a logo, and a placeholder for a logo. The post has 4 replies from you and IT20147846. At the bottom of the channel, there is a 'New conversation' button.

- Meetings were held as much as possible to discuss issues that were occurred during implementation.
- Present the progress of task have been done during the Co-supervisor meeting



## 2 Creating Progress Presentation II

Course: Research Project (Comp) x Smart Travel Recommendation x CDAPSubmissionCloud - 23-308 x WhatsApp x

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PowerPoint Smart Travel Recommendation and Tourism Support Mobile Based System PP2 Search (Alt + Q)

65 Gantt Chart

66 References

67 Demonstration

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69 Developing a system that analyze the emotional state of the user and suggest personalized activities according to their emotional state.

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Slide 68 of 83 English (U.S.) Give Feedback to Microsoft Notes 97%

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Slide 69 of 83 English (U.S.) Give Feedback to Microsoft Notes 97%

Course: Research Project (Comp) x Smart Travel Recommendation x CDAPSubmissionCloud - 23-308 x WhatsApp x

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PowerPoint Smart Travel Recommendation and Tourism Support Mobile Based System PP2 Search (Alt + Q)

## Algorithms behind the implementation

- The code mounts Google Drive to access a dataset containing images of facial expressions representing different emotions.
- It loads the data using TensorFlow's `image_dataset_from_directory` function.
- Data preprocessing will be performed using an `ImageDataGenerator`.
- `InceptionV3` is used for feature extraction, followed by custom layers for regularization and classification.
- The model is compiled with `Adam` optimizer, categorical cross-entropy loss, and accuracy metric.
- The model is trained on the training dataset over specified epochs, and training history is recorded.

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## Data collection

CCO 1.0 Universal (CCO 1.0) Public Domain Dedication

No Copyright

Other Information

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### 3 Implementing Backend

- Implementation of the model by using google colab platform

```
7 prediction = model.predict(img_preprocessed)
8 class_index = np.argmax(prediction)
9 class_name = classes[class_index]
10
11 plt.title("Predicted Class: {}".format(class_name), size=18, color='red')
12 plt.imshow(img_array)
13 plt.axis('off')
```

```
[31] 1 # Example usage of predict_image
2 classes = ["Angry", "Happy", "Sad", ...] # Define your class names here
3 predict_image('/content/drive/MyDrive/Smart Travel App/Face detect/Happy/11.jpg', model,
4
1/1 [.....] - 0s 103ms/step
```

Predicted Class: Happy



```
[32] 1 # Example usage of predict_image
2 classes = ["Angry", "Happy", "Sad", ...] # Define your class names here
3 predict_image('/content/drive/MyDrive/Smart Travel App/Face detect/Angry/12.jpg', model,
4
1/1 [.....] - 0s 355ms/step
```

Predicted Class: Angry



```
[33] 1 # Example usage of predict_image
2 classes = ["Angry", "Happy", "Sad", ...] # Define your class names here
3 predict_image('/content/drive/MyDrive/Smart Travel App/Face detect/Sad/13.jpg', model, c1
4
1/1 [.....] - 0s 378ms/step
```

Predicted Class: Sad



```
File Edit Selection View Go Run Terminal Help app.py - emotion_model - Visual Studio Code

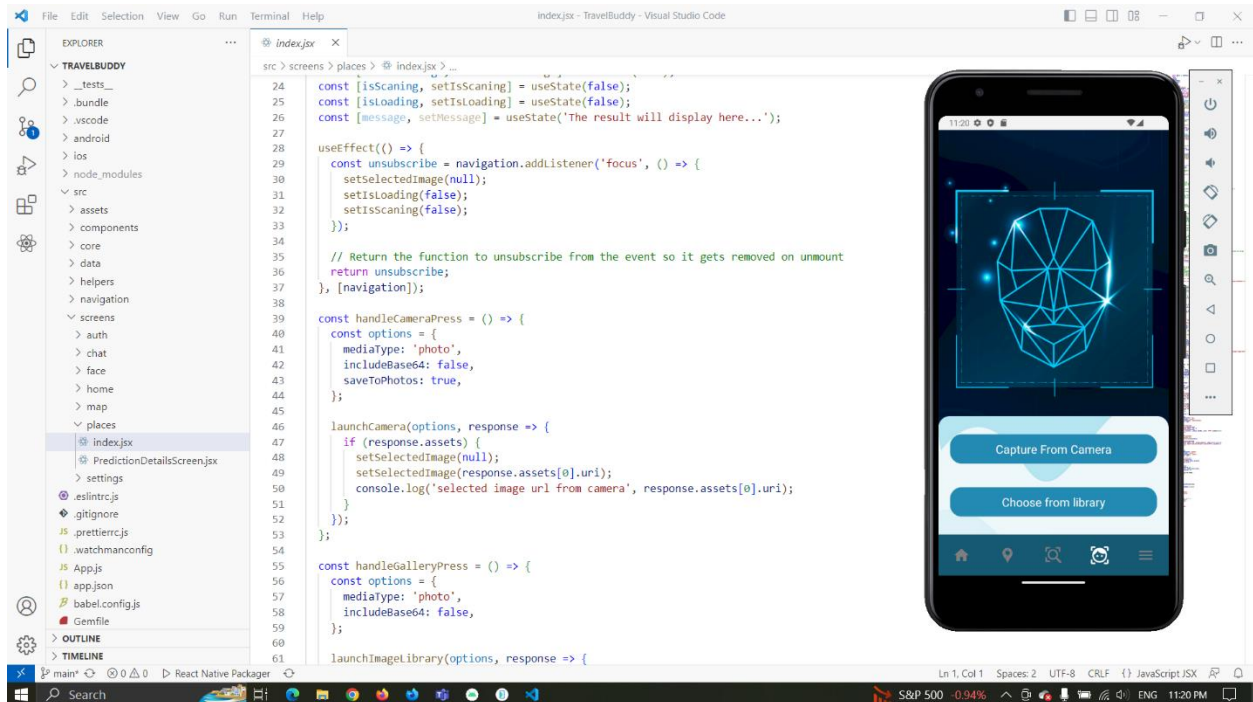
EXPLORER
> EMOTION_MODEL
> OUTLINE
> TIMELINE

app.py 1 x face_modelh5
app.py > index
1 from flask import Flask, request, render_template, jsonify
2 import numpy as np
3 from PIL import Image
4 from io import BytesIO
5 from tensorflow.keras.models import load_model
6
7 app = Flask(__name__)
8 model = load_model('face_model.h5')
9 class_map = {0: 'Angry', 1: 'Happy', 2: 'Neutral', 3: 'Sad', 4: 'Surprise'}
10
11 @app.route('/')
12 def index():
13     return render_template('index.html')
14
15 @app.route('/predict', methods=['POST'])
16 def predict():
17     try:
18         img_file = request.files['image']
19         img = Image.open(img_file.stream).convert("RGB") # Convert to RGB format
20         img = img.resize((80, 80)) # Resize to the model's input size
21         img_array = np.array(img)
22         img_processed = np.expand_dims(img_array, axis=0)
23         img_processed = img_processed / 255.0
24
25         prediction = model.predict(img_processed)
26         emotion_label = class_map[np.argmax(prediction)]
27
28         return jsonify({'emotion': emotion_label})
29
30 except Exception as e:
31     return jsonify({'error': str(e)})
32
```





## 4 Implementing Frontend

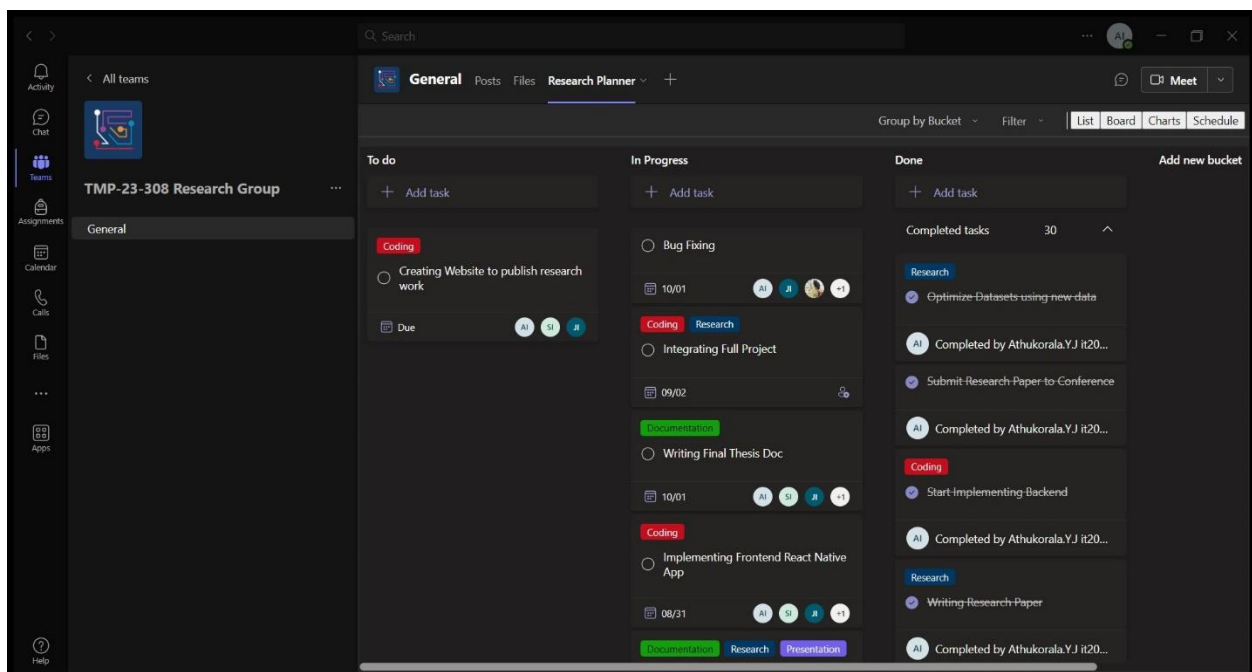


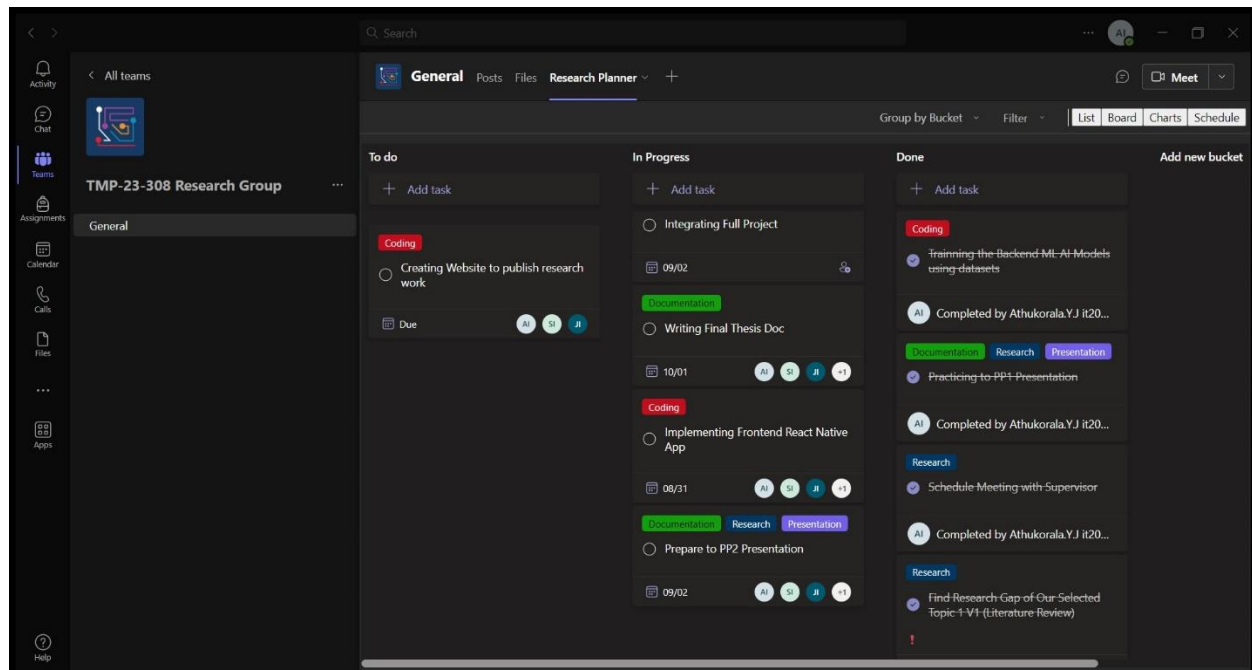
## 5 Updated Gantt Chart

Task Name	2022		2023											
	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
<b>Planning Phase</b>														
Initial discussion with the supervisor														
Feasibility study														
Requirement analysis														
Literature review														
System overview diagram														
Topic assesment form														
Project proposal														
Prepaering SRS Document														
<b>Software Design Phase</b>														
UML diagram														
Design wireframe & mock-ups														
<b>Implementation Phase</b>														
Collection dataset														
Training Model														
Frontend development														
Backend development														
<b>Testing Phase</b>														
System Training														
Bug fixing														
<b>Documentation Phase</b>														
Research paper														
Final report														
Project status document & Log book														
Final Presentation & Viva														
<b>Integration Phase</b>														
Intigrate backend and frontend														

	Completed
	In progress
	Not started yet

## 6 Work load allocation





## 7 Future Development and Tasks

1. Thesis and final report writing
2. Final Presentation

Current Progress – 90%