(1) On Grace NUC Side

I. Launch HR Backend

Make sure the mobile base has been shut down first. Power on the supply and the switches.

Open Teamviewer and enter IP for Grace NUC `192.168.99.10`

Enter the password for Grace NUC: `hrobotics12`

Run the commands below in a new terminal

```
cd ~/HKUST/Grace_Project/Grace_Connector
```

```
source Setup.bash
```

II. Doublecheck the audio config

Run the commands below in a new terminal

```
pavucontrol
```

Make sure ALSA output is connected to 'GraceCancelSink'

For more information, refer to document

III. Launch web gui

Open chrome and go to 'http://192.168.99.10:8000/#/'

Make sure "ChatEnabled" is False, "Moderator Mode" is Off, Language is selected to the desired one.

(2) Jetson for RGBD Camera

run 'ssh hr@192.168.99.20' with PW: hr2045

Run the commands below

```
cd ~/Grace_Project/Grace_Connector
```

```
source SetupJetson.bash
```

if no "WAIT_VISION" is seen, kill the program and rerun the command above.

(3) On Workstation

I. GUI for Control

In a terminal:

```
cd ~/HKUST_GRACE/Grace_Project
```

```
source launch_gui.bash
```

II. VISION: TRACKING (detail: document)

In a terminal:

```
docker container start container-graceproject-attention-tracking
```

```
docker attach container-graceproject-attention-tracking
```

```
cd /home/HKUST_GRACE/Grace_Project/
```

```
source launch_attention_tracking.bash
```

III. VISION: HEAD POSE, GAZE, FACIAL EXPRESSION (detail: document)

In a terminal:

```
docker container start container-graceproject-attention-head-emotion
```

```
docker attach container-graceproject-attention-head-emotion
```

```
cd /home/HKUST_GRACE/
```

```
source ./Grace_Connector/IP_Setup_Local.bash
```

```
cd Grace_Emotion_HeadPoseAttention/
```

```
python grace_emotion_headposeattention.py
```

IV. Sensor Interface

```
cd ~/HKUST_GRACE/Grace_Project
```

```
source launch_sensor_new.sh
```

Optionally, monitor audio -- need a headset plugged into the work station.

Run the following commands on WORKSTATION

```
cd ~/HKUST_GRACE/Grace_Project
```

```
source launch_sensor_new.sh
```

Run the following commands on the NUC

```
cd ~/HKUST/Grace_Project/Grace_Connector/
```

```
source IP_Setup_Master.bash
```

```
roslaunch audio_capture capture.launch
```

V. Sentiment Analysis for Backchanneling

In a first terminal:

```
conda activate vllm
```

```
CUDA_VISIBLE_DEVICES=1 python -m vllm.entrypoints.openai.api_server --model Qwen/Qwen2-7B-Instruct-GPTQ-Int4 --host 0.0.0.0 --enforce-eager --max-model-len 2048
```

In a second terminal:

```
conda activate vllm
```

```
python Grace_TurnManager/utils/sentiment_analysis2.py
```

VI. Launch Turn Manager

Use the debugger of vscode and launch debug on grace_tm.py inside Grace_TurnManager

First run will fail with "master may not be running yet. Will keep trying." In this case, tn the debug terminal run:

```
source ../Grace_Connector/IP_Setup_Local.bash
```

VII. Launch Disengage Command Server

Make sure this is the LAST thing you boot!

Boot the mobile base by pressing the bigger button for 2 seconds, then two beeps should sound.

In the first terminal:

```
source Grace_Connector/IP_Setup_Local.bash
```

```
cd ~/HKUST_GRACE/Grace_Project/Grace_Behav_Executor/utils
```

```
python3 exit_dialogue_server.py
```

In the second terminal

```
source ../Grace_Connector/IP_Setup_Local.bash
```

Make sure to power down the base by long-pressing the bigger button for 10 seconds.

VIII. Web GUI for Showing Results of COPD

In a new terminal:

```
cd ~/HKUST_GRACE/Grace_Project/chatbot_frontend/
```

```
conda activate vllm
```

```
streamlit run frontend_display_result.py
```