

TRAIN ROBOT TO CLIMB STAIRS: MAINTAIN STABILITY OF ROBOT

21_22-J 34

Research Project Logbook

Balasooriya T.D – IT18212150

Supervisor – Mr. Samantha Rajapakshe

Co-Supervisor – Mr. S.M.B. Harshanath

B.Sc. (Hons) Degree in Information Technology Specializing in Information
Technology

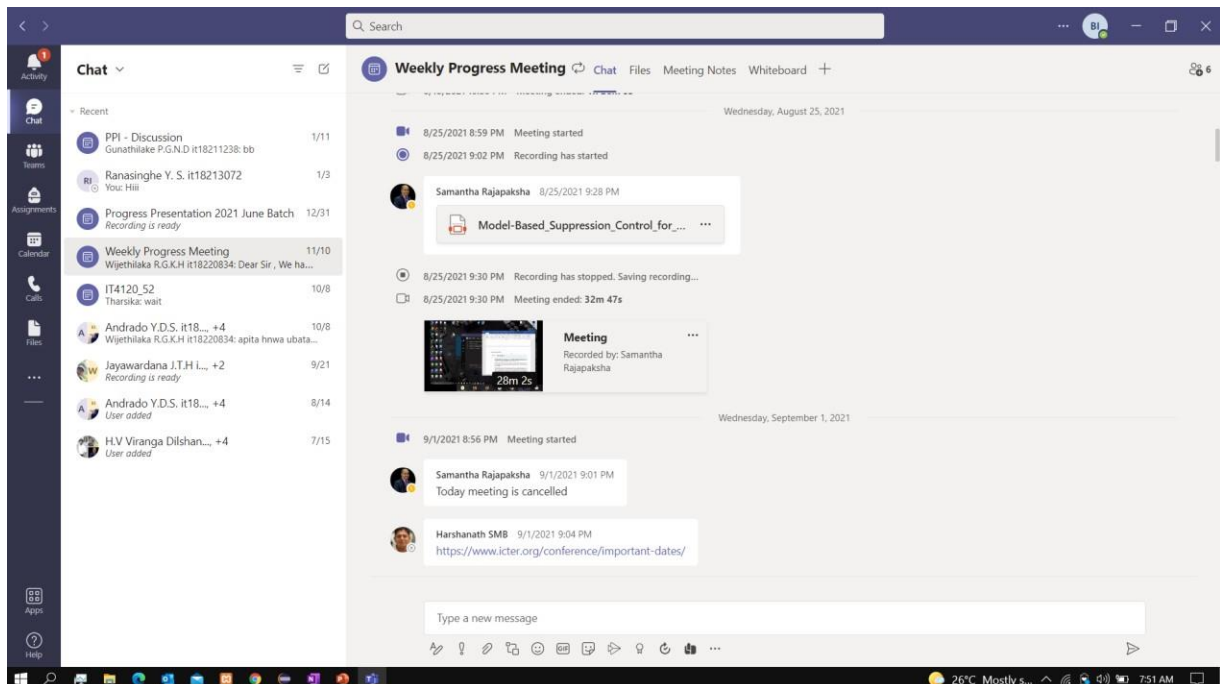
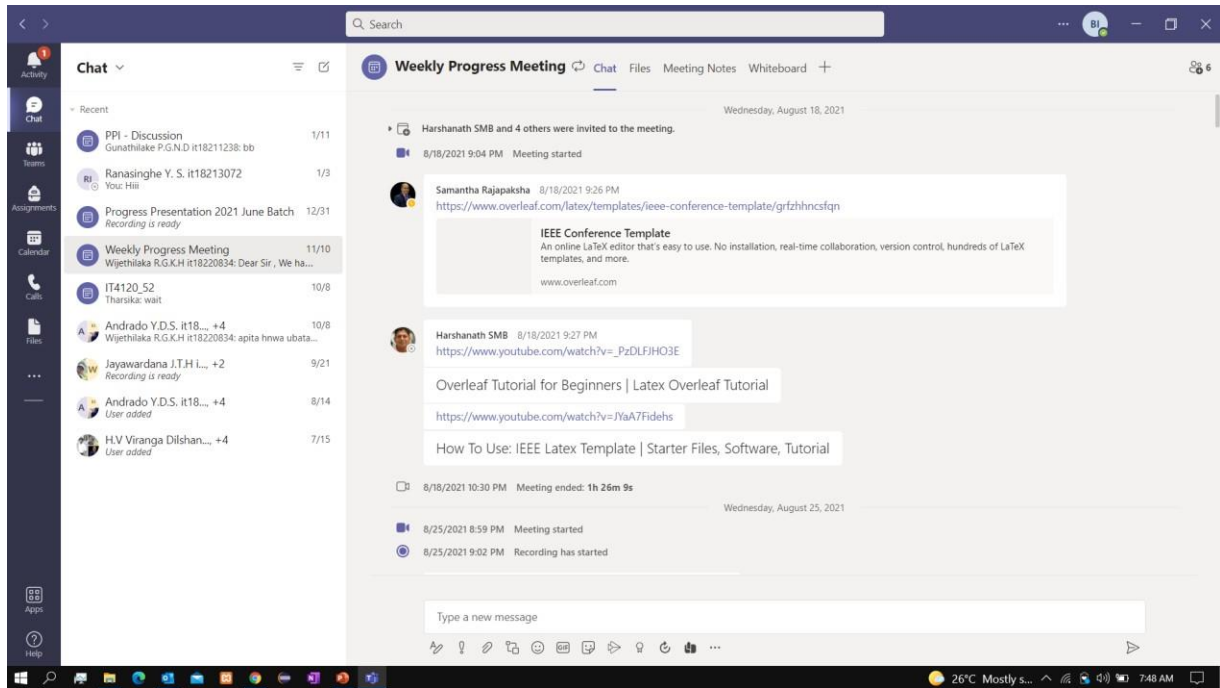
Department of Information Technology

Sri Lanka Institute of Information Technology

Sri Lanka

June 2022

1. Supervisor Meeting Evidence



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Chat

Weekly Progress Meeting

Recent

- PPI - Discussion
Gunathilake P.G.N.D it18211238: bb 1/11
- Ranasinghe Y. S. it18213072 1/3
- Progress Presentation 2021 June Batch
Recording is ready 12/31
- Weekly Progress Meeting
Wijethilaka R.G.K.H it18220834: Dear Sir , We ha... 11/10
- IT4120_52
Tharsika: wait 10/8
- Andrado Y.D.S. it18... +4
Wijethilaka R.G.K.H it18220834: apita hnwa ubata... 10/8
- Jayawardana J.T.H i... +2
Recording is ready 9/21
- Andrado Y.D.S. it18... +4
User added 8/14
- H.V Viranga Dilshan... +4
User added 7/15

Samantha Rajapaksha 9/8/2021 9:05 PM
<https://www.theconstructsim.com/>
<https://www.udemy.com/>
Online Courses - Learn Anything, On Your Schedule | Udemy
 Udemy is an online learning and teaching marketplace with over 155,000 courses and 40 million students. Learn programming, marketing, data science and more.
www.udemy.com

Harshanath SMB 9/8/2021 9:15 PM
<https://pubmed.ncbi.nlm.nih.gov/23835772/>
Functional predictors of stair-climbing speed in older adults - PubMed
 An older adult's stair-climbing speed can be accurately estimated by using a model that includes his or her usual gait speed and OLSI. This information will help health care professionals and direc...
pubmed.ncbi.nlm.nih.gov

<https://pubmed.ncbi.nlm.nih.gov/9309638/>
Energy cost of stair climbing and descending on the college alumnus questionnaire - PubMed
 In calculating the physical activity index (PAI) on the college alumnus questionnaire, it is assumed that 8 kcal are expended for every 20 steps climbed. This value is equal to an energy cost of 0...
pubmed.ncbi.nlm.nih.gov

<https://journals.sagepub.com/doi/full/10.1177/1729881417720783>
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Type a new message

26°C Mostly s... 7:53 AM

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Weekly Progress Meeting

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- Andrado Y.D.S. it18... +4
User added 8/14
- H.V Viranga Dilshan... +4
User added 7/15

Harshanath SMB 9/19/2021 9:49 AM



3:27 Now playing

Robot Learns to Climb Stairs Blind
<https://www.youtube.com/watch?v=MPhEmC6b6XU>

Robot Learns to Climb Stairs Blind - YouTube
 We successfully used reinforcement learning to train a recurrent neural network to control our bipedal robot Cassie to climb stairs without any perception se...
www.youtube.com

Cassie: Dynamic Planning on Stairs <https://www.youtube.com/watch?v=qV-92Bq96Co>

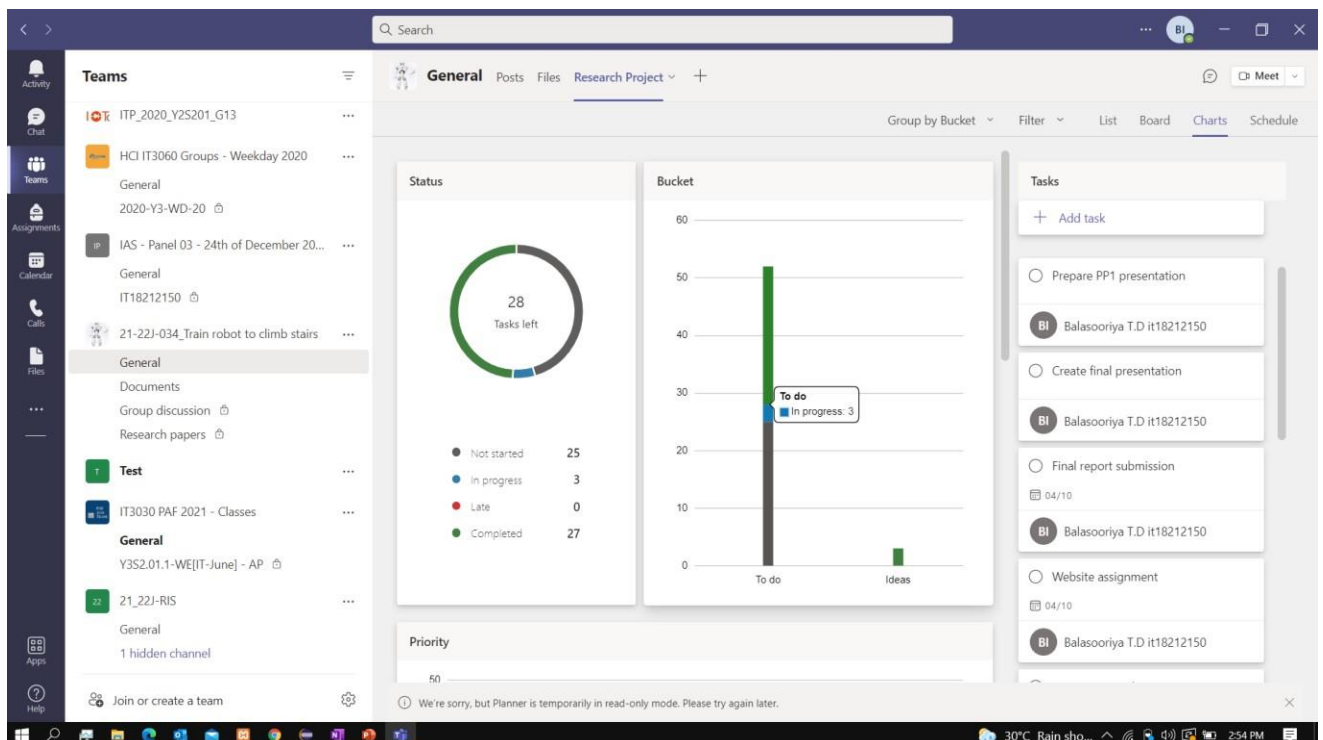
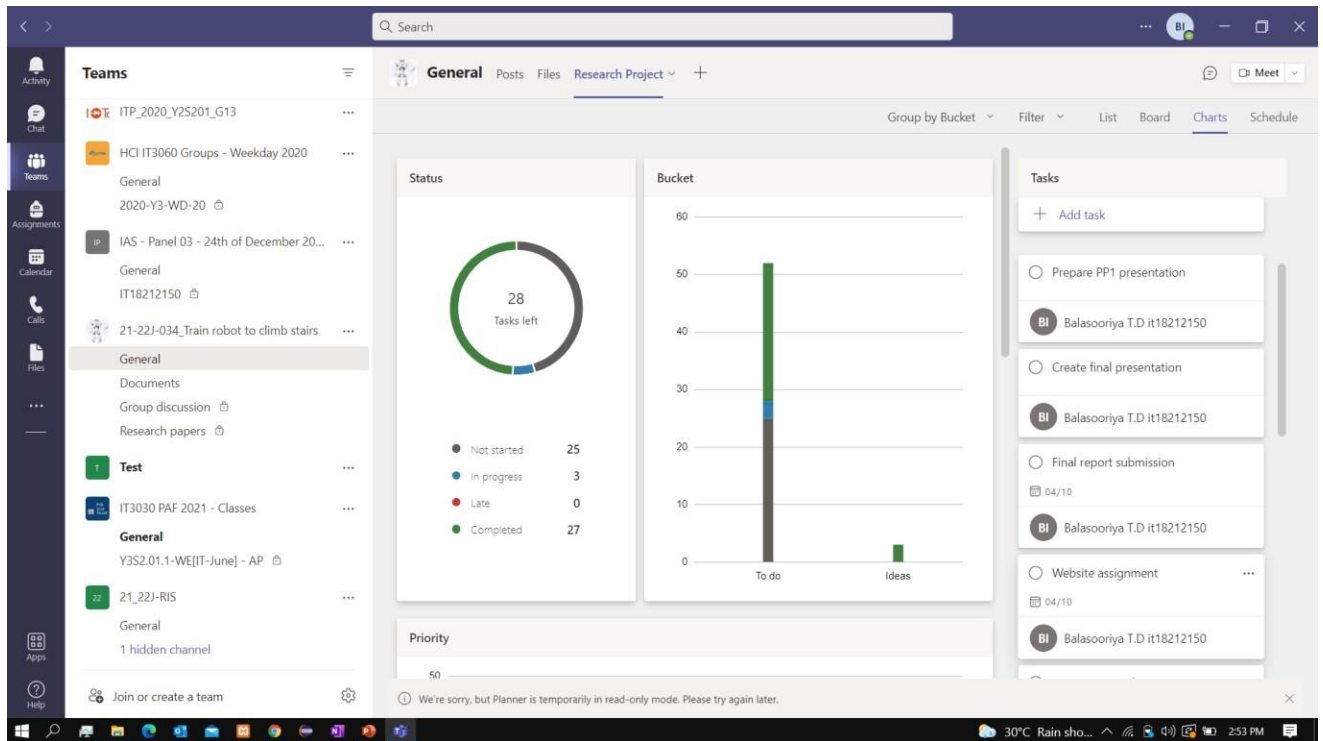
Cassie: Dynamic Planning on Stairs - YouTube
 This video shows the progression of increasingly complex gait strategies from ATRIAS through recent results with Cassie. Specifically, Cassie's controller no...
www.youtube.com

Type a new message

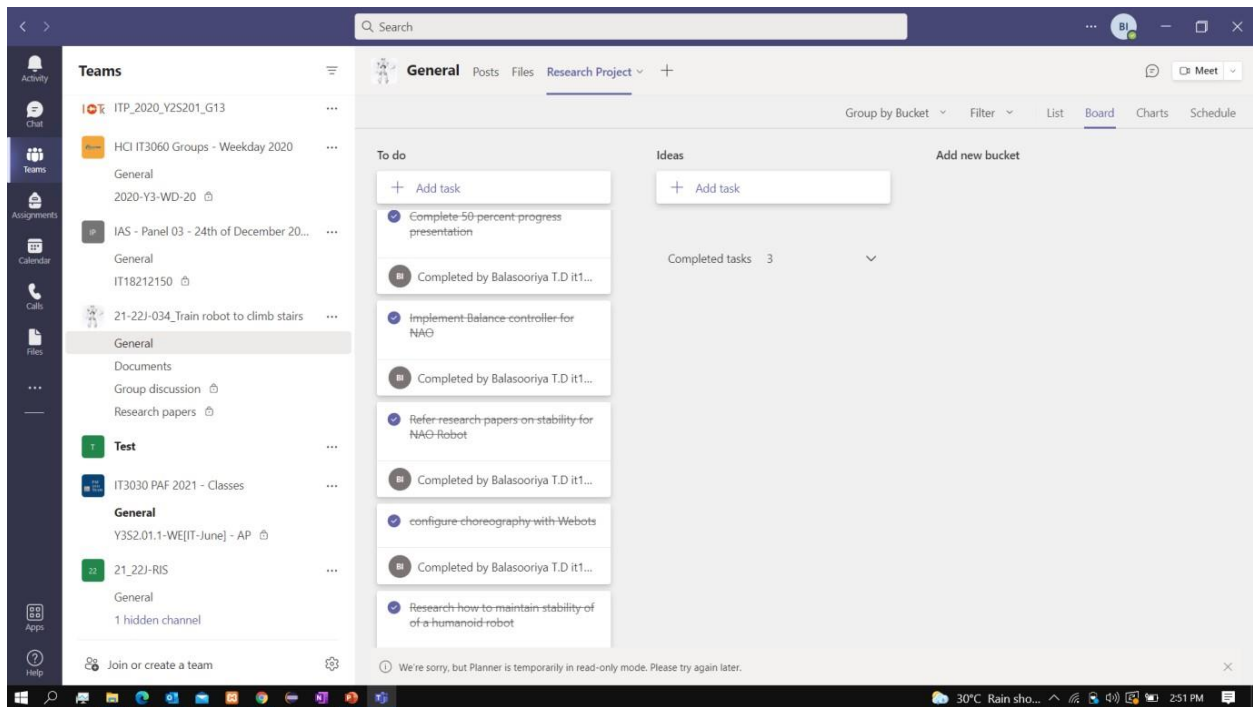
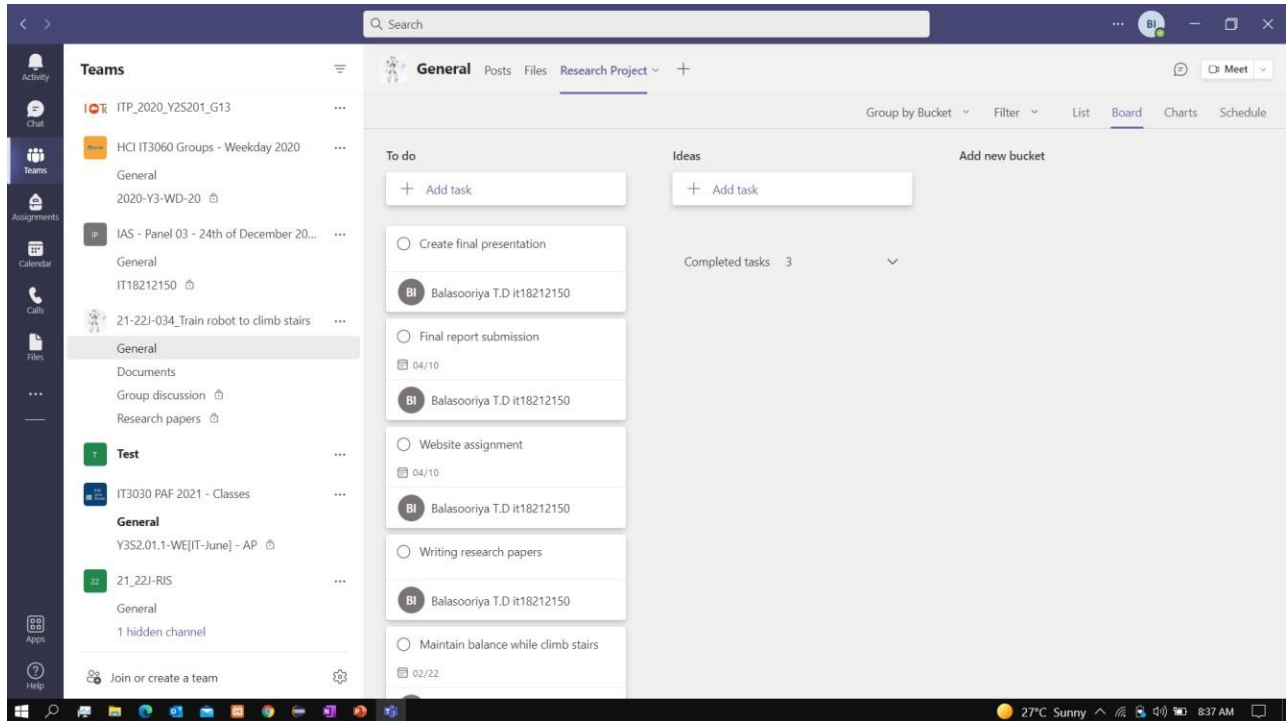
26°C Mostly s... 7:59 AM

2. Individual Project logs

- MS Planner



- Work Breakdown Structure



- Gitlab

The screenshot displays the GitLab web interface in a browser. The address bar shows the URL: `http://gitlab.sliit.lk/21_22-j-34/21_22-j-34/tree/IT18212150/Maintain_Stability`. The page title is "Maintain_Stability · IT18212150 · 2". The left sidebar contains navigation links: "Project overview", "Repository" (selected), "Files", "Commits", "Branches", "Tags", "Contributors", "Graph", "Compare", "Charts", "Issues" (0), "Merge Requests" (0), and "Collapse sidebar". The main content area shows the repository path "21_22-j-34 > 21_22-j-34 > Repository". Below the path, there is a dropdown menu showing "IT18212150" and "21_22-j-34 / Maintain_Stability /". To the right of the path, there are buttons for "History", "Find file", "Web IDE", and a download icon. A section titled "Add new file" shows a commit by "Thanushka Dulanja Balasooriya" 2 months ago with a commit ID of "5bf54551". Below this, a table lists the files added in the commit:

Name	Last commit	Last update
..		
.gitkeep	Add new directory	2 months ago
HeadControl	Add new file	2 months ago
LArm	Add new file	2 months ago
Maintain_Stability_Constraint	Add new file	2 months ago
RArm	Add new file	2 months ago

The bottom of the screen shows a Windows taskbar with various application icons, a system tray with weather information (28°C, Light rain), language settings (ENG, INTL), and the date/time (12:37 AM, 6/14/2022).