

Progress Presentation-I

e-Yantra Summer Internship-2016
Robot State Collector

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Overview of Project

Progress
Presentation-I

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Overview of
Project

Overview of
Tasks

Tasks
Accomplished

Challenges Faced

Future Plans

Thank You

Robot State Collector

■ Objectives

- 1 To collect data about Robot State (sensor values, velocity etc.) as the robot is being used.
- 2 To experiment with different transfer mechanisms for transferring State Information from Robot to Laptop/PC.
- 3 To develop a Java based GUI for:
 - 1 Receiving State Information from the Robot.
 - 2 Encrypting collected State Information.
 - 3 Sending Encrypted data to e-Yantra Servers.
- 4 To implement Decryption of State Information sent by Client on Server Side.

Overview of Project (Cont.)

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■ Deliverables

- 1 State Collection Code for Robot and associated Tutorials.
- 2 GUI with all the functionalities mentioned in Objectives.
- 3 Documentation of state collection, encryption and decryption process.

Overview of Tasks

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List of Tasks

Task	Deadline
Study and set up Linux and understand problem statement	3 days
Relevant Reading and Getting started	4 days
Interrupt based state collection	6 days
Exploring other possibilities	6 days
Creating a GUI for fetching collected state	6 days
Encrypting and sending data to server	3 days
Testing and Debugging	4 days

Tasks Accomplished

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Tasks Completed

- Relevant reading about ATmega2560 microcontroller.
- Interrupt based State Collection has been achieved.
- Transmission of State Information from Robot to Laptop via XBee module.
- In the process of finalizing the GUI.
- Decryption of received data.

Challenges Faced

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Major Challenges

- Minimizing the Interference between State Collection Code and User Code.
- Dealing with the Unreliability of Wireless Communication via XBee.
- Storing the Encryption key to be shared with the e-Yantra servers.
- Dealing with Block Level Padding for File Decryption.

Future Plans

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Tasks Remaining

- Adding Checksum to preserve Integrity of Received file.
- Uploading collected data to e-Yantra servers.
- Testing State Collection code for different time periods.
- Making the code more secure.
- Proper documentation.

Thank You

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Thank You

Thank You!