Progress Presentation-I

e-Yantra Summer Intership-2016
Robot State Collector

Amit Raushan
Amanpreet Singh
Mentor:
Shubham Gupta

IIT Bombay

June 25, 2016

Robot State Collector

- Objective
  1. To collect timed data of the state(like sensor values,velocity etc,) of firebird V robot during its traversal along any given path.
  2. Implementation of a code which can accurately transfer the data through xbee module.
  3. Development of a GUI that picks up the data from the robot through xbee module,encrypts it and sends it to e-Yantra servers.

- Deliverables
  1. Design of such a state collection mechanism which does not affect user's program performance.
  2. GUI for extracting information from the robot.
  3. Documentation of the state collection and encryption process.

Task Lists

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

Task completed

- Relevant reading about firebird V robot.
- Interrupt based state collection is achieved.
- Transmission of state data of the robot through xbee module.
- GUI development for receiving the state data.

Major challenges

- Implementation of code keeping in mind user's program should not be interfered.
- On transmitting through USB, terminal software was receiving correct value but through wireless(using Xbee) transmission sometimes a byte was missing or getting clumsy with other byte.
- Storing the Encryption key for sharing it to the e-yantra server.
- Selecting the type of encryption.

Task remaining

- Encryption of the data so that no one can manipulate the original state data.
- Uploading of the collected data to e-Yantra servers.
- Decryption of the data received.
- Testing our code for various other time periods.
- Making our code more secure.
- Proper documentation.

THANK YOU !!!