GUI Development for Firebird - Using JAVA

Project Name: *GUI Development for Firebird (Using JAVA)*
Suggested By: *Sachin P. / Saurav S.*
Mentor Name: *Sachin P. / Saurav S.*
Interns Required: *1*

Abstract:

Develop a GUI using JAVA AWT and Swing for testing a Firebird Component. GUI should communicate with Firebird using Serial Communication. GUI should read values from all firebird sensors and shows output visually. GUI must also actuate DC motors, along with velocity control and servo motor. GUI should be compatible with Linux and mac platform also.

Task List:

All tasks mentioned below are to develop a GUI using JAVA – AWT and Swing for testing a Firebird components.

Task No.	***Task***	***Deadline***
1	*Installation and Study JAVA – AWT, Swing and Layout Manager*	*4 Days*
2	*JAVA Serial Communication*	*4 Days*
2	*Developing a GUI: Buzzer, Motion Control, Velocity Controller*	*6 Days*
3	*Developing a GUI: Servo Motor, IR Sensor, Sharp Sensor*	*6 Days*
4	*Developing a GUI: Line Sensor, Battery Voltage*	*5 Days*
5	*Camera Interface*	*5 Days*
6	*Serial Terminal, Creating CSV file of Input/ Output values*	*3 Days*
7	*Creating executable file and Documentation*	*3 Days*

Prerequisite:

Programming experience ***{JAVA}***

Hardware Required:

1. *Firebird V Robot with serial cable*

Deliverables:

1. *GUI should pass the following Test-cases:*
    a. *Cross-Platform: Windows, Linux, Mac OS*
    b. *GUI – Firebird Communication: Using serial communication*
    c. *Reading values of Firebird Sensors*
    d. *Actuating DC motors, along with velocity control and servo motor*

2. *Fully functional cross-platform (win, Linux, MAC) GUI with user manual, documented code as per given template on PIAZZA.*

Software Required:

JAVA

References:

1. *JAVA*
2. *Serial Communication in JAVA*
3. *Creating a GUI with Swing*
4. *Java Layout Manager*