Project: RobBot

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Abstract

There are a lots of Chat-Bots out there and robots, but they are either too cheap or too costly for use. Our moto would be to make such small physical chat-bot that will communicate with us in natural languages like simple English (Hear & Talk) and do some very basic movements using low cost Arduino at it's core. This would be our first step & later we'll jump to extended features like machine learning and artificial intelligence.

1 Phases:

1.1 Requirement Engineering:

Types:

1. Functional Requirements(FR):
   What Functionalities & Software Bahaviour Users Want
   (a) Good Calculation;
   (b) Good data manipulation;
   (c) Good Processing;
   (d) Good logical decision-making.
2. Non-Functional Requirements(NFR):
   System Requirements
   (a) Quality & Attributes
   (b) Design & Architecture

   Cinsiderable things
   - Performance
   - Availability
   - Maintability
   - Portability

- Reliability
- Robustness
- Security
- Scability
- Tastability
- Usability

Approaches:

- Product Oriented:
- Process Oriented:
- Qualitative:
- Quantitative:

3. Interface Specification(IS):
   Link with Softwares
   - Operating Systems: Linux, Windows, Mac, Android
   - Databases: OracleSQL, MySQL, SQLite
   - Database Connector: JDBC connector J
   - Serial Communication: RxTx Library
   - Program Uploader: Arduino IDE

   Hardwares
   - Computer HardDisk (to save Controlling Software)
   - ArduinoUNO (atmel-328p)
   - Breadboard, PCB, Wires & connectors
   - Motors & Wheels
   - Bluetooth/WiFi module
   - Ultrasonic Sensors, Infrared Sensors
   - Speakers

Steps:

1. Requirement Development:
   - Feasibility Study:
     - Operational Feasibility:
       Does the system serve the organizational objectives? YES(requirements inside letter & high usability in near future)

- Technical Feasibility:
  Can the system be built using available technology in given time & integrated with other surrounding systems as required by overall architecture?: YES(Tech. Avail. OSs(Linux, Windows, Mac, Android), Arduino, Java, SQL)
- Economical Feasibility:
  Can the system be built using available technology in given time and budget? YES(OSs(Linux: Free (donation: optional), Windows: Rs. 8000(original) or free(pirated), Mac: Rs. 1000, Android: Rs. Rs. 10000...****If one has anyone of these, no need for extra cost execpt charging power*), ArduinoUNO(Rs. 500 approx.), Java, SQL: FREE; time=8 weeks...enough, budget=1000 Rs.)

- Eliciting Requirements:
- Requirements Analysis:
- Specify and Validate Requirements:

2. Requirements Management:

Models:

1. Structured Analysis Model:
2. Object Oriented Analysis Model:

1.2 Designing:

1.3 Coding & Testing:

1.4 Implementation:

1.5 Maintenance: