ACKNOWLEDGEMENT

It gives us immense pleasure and satisfaction in presenting this report of System development Project undertaken during the 8th semester of B.E.

As it is the first step into our Professional Life, we would like to take this opportunity to express our sincere thanks to several people, without whose help and encouragement, it would be unfeasible for us to carry out the desired work.

We would like to thank to **Dr. H. S. Mazumdar** (Project Leader) for giving us an opportunity to work with them. An enviable work culture and an environment that encourages creativity and innovation have inculcated in us a sense of discipline and perseverance.

From the bottom of our heart, I would like to express my sincere thanks to our Head of Department and internal guide **Prof. R.S.Chhajed,** who gave us an opportunity to undertake such a great challenging and innovative work. We are grateful to him for his guidance, encouragement, understanding and insightful support in the development process.

With sincere regards,

Nookala Lakshmi V.

Khandelwal Ankit M.

ABSTRACT

Our project DDU-ROBO 2008(- a mobile multifunctional robot) is a prototype model of the final model to be built. This model will perform several functions which include:-

- A robot which can move with different modes of speed.
- Array of optical sensors to track path.
- Proximity sensors to avoid obstacle.
- Interface with remote control.
- Horizontal gripper for pick and place.

The aim to build robot is to provide security service. The security service would include sensing the unidentified objects, if object could cause any kind of harm then to dispose it and it can be also operated by human through some kind of interface device between robot and human. The above specified functionality is the first step to build the complete end product. This multifunctional robot can also have various other uses which are specified in the documentation.

During the entire project the different task undertaken from its design discussions to its construction and programming principles are also specified here in documentation. During this project the difficulties faced and overcome upon them are also specified. Apart from all this the construction and designing according to different constraints kept are also specified here in documentation. This documentation will guide you through entire project and answer to the what, why & how of the project.

After the study of complete documentation the novice user would be able to operate it easily and with complete understanding about strength and weakness of project.

COMPANY PROFILE

ABOUT DDU

DDU was established in 1968, with a view to provide education in engineering and technology to the youth. It is the only technical institute that received accreditation in Gujarat by NBA. All India Council of Technical Education.

DDU founded in 1968 with Chemical branch. Eventually it expanded to nine branches, with student strength more than 3000. It was the first autonomous technical institute in Gujarat State. It has collaboration with IOWA state university. In Collaboration program, student exchange, short term courses and visitors to other side are invoked. Also, seminar, symposiums and National level Technical Competitions have become part of institute. The branches are organizing guest lectures, industrial visit, seminar-completing students are taking part in various national level and expanding their knowledge and also winning prizes.

DDU has established a Research and Development Centre in 1998. It is oriented towards assisting industries in high technology areas. The institute has also set up mechanisms, beyond that normally what is normally available in an academic institution for accepting and executing R & D projects. The other objective of this centre is to provide training through courses and projects at different levels to strength the undergraduates, postgraduates of the institutes.

About Research & Development Centre, DDU

- About the head of R & D Centre:-

Dr. H. S. Mazumdar

He is a project leader and Head of Department for many years. He is the head of Dharmsinh Desai Research Center at Nadiad. He is the member of many professional institutes. He has guided many graduate and undergraduate students.

List of Current Projects:-

- Color Portrait Building System for National Crime Record Bureau
- DDU Robo-2008
- R & D Website with mobile Authentication Tools
- E-Trading Website for Student Community
- PC Based Data Acquisition System Institute of Plasma Research
- Email Bulletin Board for Villages using POCSAG code
- Printing Press Automation with MISC(paper monitoring)
- IVR Hardware Software Design for Telephone and Large DBMS Interface
- Stock Exchange On-Line Information Display System
- GUJ -WAN Gujarat State WAN Project(Planning State)
- Internet Server, Search Engine & Portal Design
- Loom Data System –ORACLE-PLC-MODBUS-Data Unit
- Conducting High Tech Short Term Courses

List of Projects Completed:-

- Spectrophotometer Payload Onboard Electro Dynamic Explorer Satellite
- Space Shuttle Payload Electronics With Onboard Control Software To Detect & Measure Cosmic Ray Particles For NASA,TIFR and PRL(ISRO Project)
- VHF Packet Switching Network for Delhi Police(DOE Project)
- Skull Image to Face Identification System For Forensic Laboratory
- Election I-Card Printing System involving Image Processing, Multimedia, Gujarati DTP(DOS)
- Textile Design Packages For Jaquard and Dobby Looms
- Walking and Multilingual speaking Robot
- Yearn Evenness Monitoring System
- Hand Written Text Recognition With Speech Output
- AutoCAD Viewer & Red Line Editor
- Indian Classical Music Trainer with 200 Ragas Database
- Medical Information Management using Internet with On-Line ECG Machine
- PC Based Data Acquisition System
- Neural Network Tool Box using C++
- Multi Variable Optimizer using Neural Network for Teacher Classroom Scheduling Problem
- Pattern Recognition Tool Box using Neural Network
- PC Based IR Remote Control System For Control & Data Acquisition

- Simulation of Two Legged AI Based Walking Robot using Neural Network
- Time Series Data Prediction using Time Delay Neural Network
- Image Band Compression using Vector Quantization
- Continuous Tubular Reactor Simulator(GUI)

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