**A**

**Project Report**

**On**

**“PROGRAMMER`S KEYBOARD”**

**Submitted to**

**CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY**

**BHILAI**

***in partial fulfillment of requirement for the award of degree***

**of**

**Bachelor of Engineering**

**In**

**Computer Science & Engineering**

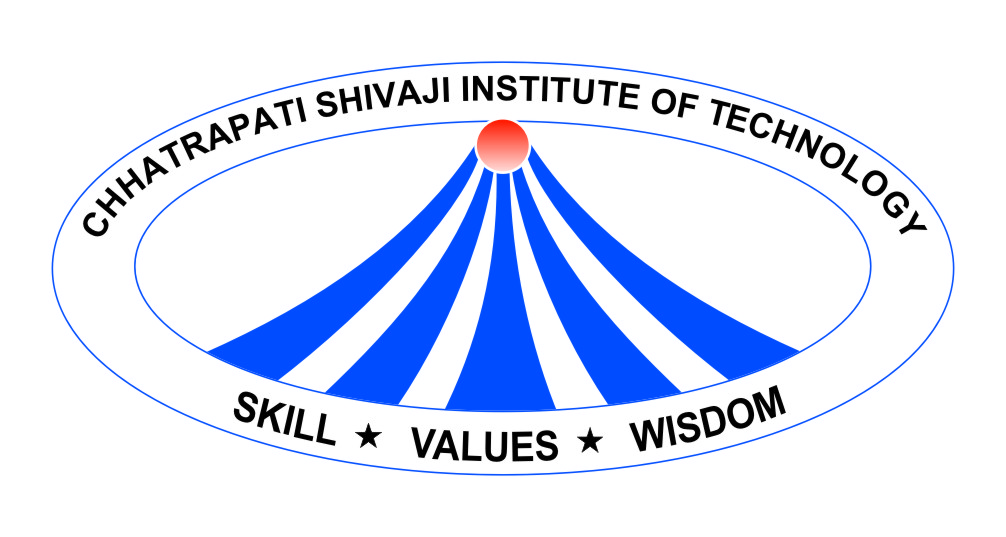
**By**

**ANNIM BANERJEE**

**Under the guidance of**

**Mr. Saket Soni**

**Assistant Professor, CSE Department**



**Department of Computer Science & Engineering**

**Chhatrapati Shivaji Institute of Technology, Durg**

**Shivaji Nagar, Balod Road, Kolihapuri, Post Pisegaon – Durg (C.G.) 491001**

**Session: 2012 - 2013**

**D E C L A R A T I O N**

I undersigned solemnly declare that the report of the project work entitled “**PROGRAMMER`S KEYBOARD**” is based on my own work carried out during the course of my study under the supervision of **Mr. Saket Soni.**

I assert that the statements made and conclusions drawn are an outcome of the project work. I further declare that to the best of my knowledge and belief that the report does not contain any part of any work which has been submitted for the award of any other degree/diploma/certificate in this University or any other University.

(Signature of the Candidate)

**ANNIM BANERJEE**

**Roll No. : 3032209112**

**Enrolment No.:AF4368**

ii

**C E R T I F I C A T E**

This is to certify that the report of the project submitted is an outcome of the project work entitled **“PROGRAMMER`S KEYBOARD”** carried out by

**ANNIM BANERJEE Roll No. : 3032209112 Enrolment No. : AF4368**

carried out under my guidance and supervision for the award of Degree in Bachelor of Engineering in Computer Science & Engineering of Chhattisgarh Swami Vivekanand Technical University, Bhilai (C.G.), and India.

To the best of my knowledge the report

1. Embodies the work of the candidate himself,
2. Has duly been completed,
3. Fulfills the requirement of the Ordinance relating to the BE degree of the University and
4. Is up to the desired standard for the purpose of which is submitted.

**(Sign of Head of Department) (Signature of the Guide)**

**Mr. OM PRAKASH YADAV Mr. SAKET SONI**

**Associate Professor, CSE Department Assistant Professor, CSE department**

The project work as mentioned above is hereby being recommended and forwarded for examination and evaluation.

(Signature of Principal with seal)

**Chhatrapati Shivaji Institute of Technology, Durg**

**Shivaji Nagar, Balod Road, Kolihapuri, Post Pisegaon – Durg (C.G.) 491001**

iii

**CERTIFICATE BY THE EXAMINERS**

This is to certify that the project work entitled

**PROGRAMMER`S KEYBOARD**

Submitted by

**ANNIM BANERJEE Roll No. : 3032209112 Enrolment No. : AF4368**

has been examined by the undersigned as a part of the examination for the award of Bachelor of Engineering degree in Computer Science & Engineering of Chhattisgarh Swami Vivekanand Technical University, Bhilai.

Internal Examiner External Examiner

Date: Date:

iv

**A C K N O W L E D G E M E N T**

It is a matter of privilege and pleasure to record our deep indebtness and warm gratitude to our esteemed Guide **Mr. SAKET SONI (Assistant Professor, COMPUTER SCIENCE & ENGINEERING DEPARTMENT)** for his inspiration, keen interest and constructive criticism at every stage of work. It was an especially valuable asset for us to have him as our project guide. Without his incredible help coupled with valuable suggestions and relentless efforts, this would never have been successful task.

We are deeply grateful to our esteemed **Mr. OM PRAKASH YADAV, HEAD OF DEPARTMENT (COMPUTER SCIENCE & ENGINEERING DEPARTMENT), Dr. MAHESH PARAPPAGOUDAR, PRINCIPAL, CHHATRAPATI SHIVAJI INSTITUTE OF TECHNOLOGY, DURG (C.G), Mr. AJAY PRAKASH VERMA, CHAIRMAN, CHHATRAPATI SHIVAJI INSTITUTE OF TECHNOLOGY, DURG (C.G),** for providing all the facilities, at every stage, which were very essential for the completion of this project.

And lastly we wish to express our thanks to all our parents, fellow students and those who have directly or indirectly helped us during this project.

**(Signature of the Student)**

**ANNIM BANERJEE**

v

**List of Tables**

|  |  |  |
| --- | --- | --- |
| **Table No.** | **Table Name** | **Page No.** |
| 6.1 | Encoder logic Truth Table | 41 |

vi

**List of Figures**

|  |  |  |
| --- | --- | --- |
| **Figure No.** | **Figure Name** | **Page No.** |
| 3.1 | Matrix Keypad connection with microcontroller | 11 |
| 4.1 | Crystal schematic for MCU enabled to use the on-chip program-data memory | 17 |
| 4.2 | Matrix keypad connection with microcontroller schematic | 18 |
| 4.3 | Schematic of USB-UART bridge converter. FT232RL. | 19 |
| 4.4 | 8051, ARM7 programmer | 20 |
| 4.5 | Circuit Layout of controller board | 21 |
| 4.6 | Schematic sketch of matrix keypad | 22 |
| 4.7 | Layout of matrix keyboard: TOP layer. | 22 |
| 4.8 | Layout of matrix keypad: BOTTOM Layer. | 22 |
| 4.9 | FlashMagic application window | 29 |
| 4.10 | The ResEdit window | 31 |
| 4.11 | Programmer’s Keyboard application window | 31 |
| 4.12 | Control Flow diagram | 34 |
| 5.1 | Keyboard: TOP layer | 35 |
| 5.2 | Keyboard: BOTTOM layer | 35 |
| 5.3 | Controller board TOP layer | 35 |
| 5.4 | Assembled and packed keyboard | 36 |
| 5.5 | Front view of programmer’s keyboard | 36 |
| 5.6 | Packed Keyboard | 37 |
| 5.6 | Programmer’s Keyboard window developed in DOT.NET framework. | 37 |
| 6.1 | Block diagram of encoder logic | 40 |

vii

**List of Abbreviation**

|  |  |  |
| --- | --- | --- |
| **Abbreviation** | **Meaning** | **Page No.** |
| PC | Personal Computer | 1 |
| µC | Micro Controller | 2 |
| µP | Microprocessor | 2 |
| FCC | Federal Communication Commission | 4 |
| USB | Universal Serial Bus | 8 |
| RF | Radio Frequency | 8 |
| DIY | Do it yourself | 12 |
| MCU | Micro controller unit | 14 |
| LED | Light emitting diode | 15 |
| PWB | Printed writing board | 15 |
| TTL | Transistor-Transistor Logic | 19 |
| PCB | Printed Circuit Board | 21 |
| CAD | Computer Aided Design | 21 |
| UART | Universal Asynchronous Receive and transmit | 24 |
| IDE | Integrated Development Environment | 30 |
| COM | Communication | 30 |
| UI | User Interface | 30 |
| GUI | Graphical user Interface | 32 |
| OS | Operating System | 33 |
| HDD | Hard Disk Drive | 36 |
| DTR | Detect to ready | 44 |

viii

**Abstract**

This project is all about to create such a keyboard this is very useful for a coder or say, useful for a programmer’s point of view. This project allows a programmer to have all the general features of keyboard, along with that some more features are added which can help a programmer to have quick with its task using our keyboard. Features of this keyboard are as follows:

* Auto completion of code snippets.
* On the basis of Language.
* Irrespective of Language.

User will select or set the configuration for using this keyboard to get the code snippets on window.

ix