

Braille Bridge: An Innovative System to Bridge the Gap Between Blind Person's

Varna S, S Roopa, Likhitha K, Shivaprasad Rao

Department of Electronics and Communication Engineering

Vivekananda College of Engineering and Technology, Puttur, Karnataka, India

varnas2407@gmail.com, gowdalkhitha333@gmail.com

gowdaroopa688@gmail.com, shivarao101@gmail.com

Abstract: *Braille Bridge is an innovative, low-cost assistive device designed to facilitate one-way communication for visually impaired individuals using Braille. The system enables users to input messages through a tactile push-button interface that mimics Braille characters. These inputs are processed by a Raspberry Pi and transmitted wirelessly via Bluetooth to a receiver unit, where solenoid switches generate the corresponding Braille output for the recipient to read through touch. To enhance usability, the device also incorporates an OLED display, LED indicators, and a buzzer for feedback on message status and system operation. Designed to be compact, portable, and affordable, the Braille Bridge prototype demonstrates how embedded technology can provide accessible communication solutions and promote greater independence for the blind community. Future developments may include expanding the system to support two-way interaction, voice integration, and mobile app connectivity.*

Keywords: Braille Communication, Visually impaired, Embedded System

