SYNOPSIS

1.Name of the College : Bharati Vidyapeeth College of Engineering Navi Mumbai

2.Name of the Course : B.E. (Electronics & Telecommunication) **Div**: A

3.Name of the Students : 1) Nikhil Kanitkar (23)
: 2) Dewoo Kudtarkar (27)
: 3) Mandar Naik (40)
: 4) Pranit Patil (48)

4.Name of the Guide : Prof. S.S. Patil
Department of Electronics & Telecommunication Engineering,
Bharati Vidyapeeth College of Engineering Navi Mumbai

5.Title of Project : Navigator For Visually Impaired Person

6.Problem Definition : Visually impaired individuals will face many difficulties and one of the common difficulties is when they are involved in self-navigating in an environment that is strange for them. Physical movement is one of the biggest challenges for them. Besides that, while they travel around or walk in a crowded corridor, it may pose great difficulty. One of the existing problems for visually impaired individuals to travel in a passage is that they cannot detect whether they need to turn left or right when reached to the end of the corridor by using only a walking stick.

7.Introduction : Globally, At least 2.2 billion people have near or distant vision impairment. In at least 1 billion – or nearly half of these cases, vision impairment could have been prevented or has yet to be addressed. In another way creating a fusion of sensing technology and voice-based guidance system, products can be developed which could give better results than individual technology.

Advantages:
1) Both indoor and outdoor navigation are possible with the device
2) Detects obstacles and notifies the blind person through vibration and speech production

Applications:
1) It can be used for providing a set of useful features :- light detection, color detection, object recognition, and banknote recognition

8.Relevance/Motivation : The major motivation behind our project is to maintain a good functional system for visually impaired individuals. This system can help visually impaired individuals to avoid the obstacles such as people and animals in outdoor places same with them, and it also can provide the distance of the obstacles in front of them.

9.Literature Review:

IEEE ID	Name	Drawbacks	Need to Improve
ISBN:978-1-5386-2456-2	Smart Cap Wearable Visual Guidance System for Blind	Not able to identify objects near to that person	Capture image of the object with a specific distance
ISBN:978-1-7281-1322-7	Smart Assistive Navigation Devices for Visually Impaired People	This device is based on internet connectivity so it is not reliable	Need to make the device offline so that is suitable for every one
ISBN:978-1-5386-9471-8	Smart Eye for Visually Impaired-An aid to help the blind people	Difficult to identify objects at ground level	Need to pair one more device for ground level object detection
ISBN:978-1-7281-5197-7	Smart Stick for Blind People	Standalone stick cannot resolve actual problem	___

10.Proposed Work:

a) Planning:

The main objective of our present work is to provide a reliable, cost-effective, low-power solution for blind people which would help them to move almost like any other normal pedestrian. The cost of this system makes it affordable for the majority of society which in turn is an effective device for them to spend on, just for once, and assures wonderful travel guide for them.

b) Methodology & Tools:

1) The camera unit is responsible for capturing objects while the sensor unit provides the distance of object from unit.
2) The processing unit plays an important role in detecting and identifying objects (image processing) ,it also receives data from ultrasonic sensor then instruct the user about object identified and distance it is located at (So the user can navigate accordingly).

c) Facilities Available & Requirement:

Thonny IDE, Arduino IDE

d) REFERENCES:

1) ISBN:978-1-5386-2456-2 "Smart Cap Wearable Visual Guidance System For Blind"
2) ISBN:978-1-7281-1322-7 "Smart Assistive Navigation Devices for Visually Impaired People"
3) ISBN:978-1-5386-9471-8 "Smart Eye for Visually Impaired -An aid to help the blind"

11.Approximate Expenditure: Rs. 7000-8000/-

Place: Navi Mumbai
Date: 08/10/2022