Project Proposal:

Title **A.R.T.I.S.T.**

1)Abstract:

This project unveils ARTIST (Advanced Rehabilitation Tool for Independent Sight with Technology) which is a Smart Robotic Cane, a revolutionary assistive device designed to empower individuals with mobility challenges in indoor navigation. Leveraging cutting-edge sensors and an advanced path planning algorithm, this cane intelligently detects obstacles and autonomously calculates optimal routes for users. This innovation promises to greatly augment user independence and safety, marking a significant milestone in assistive technology.

2) Introduction:

In today's dynamic landscape of assistive technologies, we proudly introduce the Smart Robotic Cane, a revolutionary device poised to redefine the indoor mobility experience for individuals facing substantial challenges. Imbued with state-of-the-art sensors and an intricately designed path planning algorithm, this cane represents a watershed moment in assistive technology. Its mission is to empower users with an unprecedented level of autonomy, ensuring safer, more independent navigation within indoor environments. With the Smart Robotic Cane, we take a significant step towards enhancing the quality of life for those who rely on assistive devices.

3) Aim:

The primary objective of this project is to create a smart cane tailored to assist visually impaired individuals in their indoor mobility. This cane's core functionalities include real-time obstacle detection, avoidance, precise path planning, and seamless navigation within indoor environments.

4) Objectives:

Our project encompasses several key objectives:

I. Develop a smart cane capable of promptly detecting and evading obstacles to ensure user safety.
II. Devise a comprehensive path planning algorithm that guides visually impaired individuals from their current location to their desired destination.
III. Implement a navigation algorithm that facilitates the smooth and efficient movement of visually impaired individuals within indoor spaces.

5) Methodology:

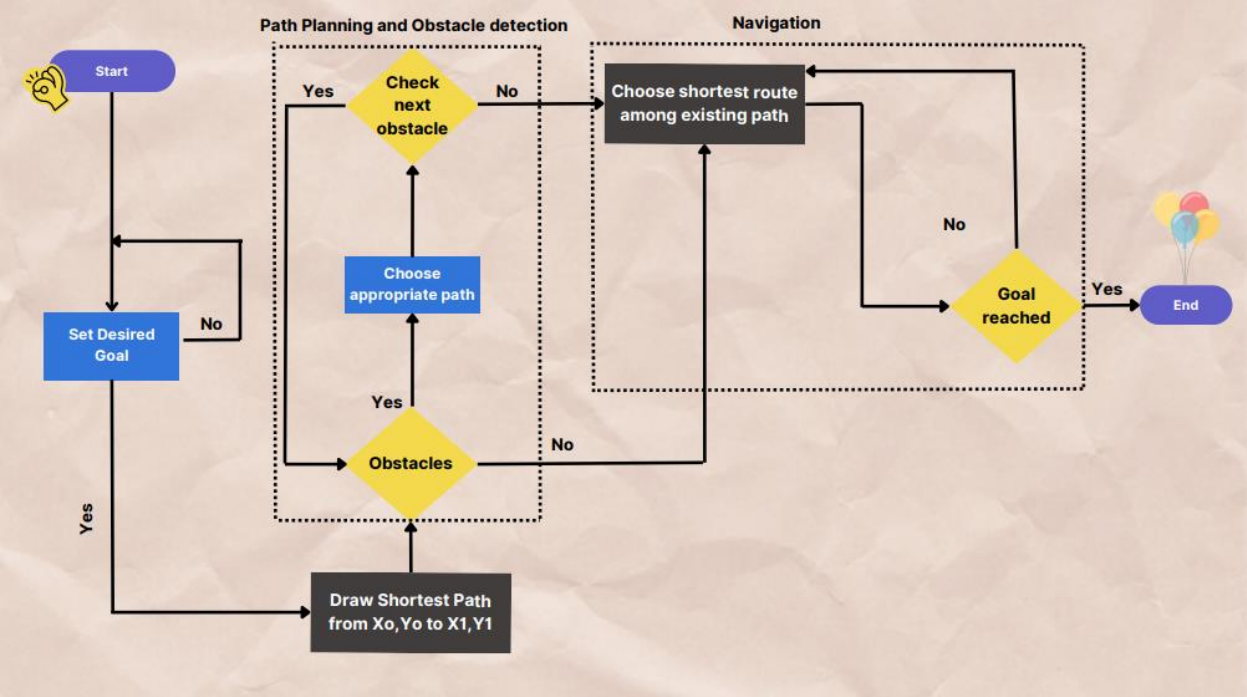

Figure 1(Illustrating the methodology for the project)

6) Conclusion:

In conclusion, the ARTIST project, featuring the Smart Robotic Cane, represents an extraordinary fusion of advanced technology and heartfelt compassion. This innovative assistive device is poised to revolutionize indoor mobility by equipping individuals with the essential tools to navigate indoor spaces confidently, independently, and with a profound sense of dignity. It transcends the realm of mere technological achievement; it embodies a beacon of inclusivity and underscores the remarkable potential of innovation to positively transform lives. With the advent of the Smart Robotic Cane through the ARTIST project, we stride forward into a future where individuals, regardless of their mobility challenges, can explore indoor environments more freely and autonomously.