

EWhizard's

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PROJECT PRESENTATION

PRESENTED TO
Infinity 2K22 Host

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Introduction

This project aims to create a user-friendly platform that helps students navigate through the college campus. With this application, students will be able to easily find their way to classrooms, laboratories, safety & emergency equipment and other facilities on campus, as well as access important information about campus events, resources, and services.

The problem of navigating through college can occur to anyone at any time, but is likely to be particularly challenging for students who are new to the campus or who are attending a large university. The problem can be located on any college campus, as it is a common challenge faced by students at colleges and universities around the world.



Objectives



- This project focuses on building an indoor navigation system for our college.
- The main features include crowd management and finding college staffs' location for academic doubts, submissions etc.



Problem Statement

There is no current internal navigation/eco system existing in PSGCT which causes frustration among employees and candidates. It often leads them to incorrect locations within the building. This results in lost productivity, wasted time, and increased stress for them. As a result, there is a need for an internal navigation system that is user-friendly, efficient, and supports multiple languages. This system should also provide real-time updates on building occupancy and availability of meeting rooms, as well as integration with the college's calendar system.



The Driving Force

It came to our realization during our first semester that a navigation system would be of significant importance to find our way through our college campus. We almost missed a couple of classes just because we could not find the classroom and had been late to exam halls as we didn't know where they were.

From a survey we conducted amongst our batchmates, we got the following results:

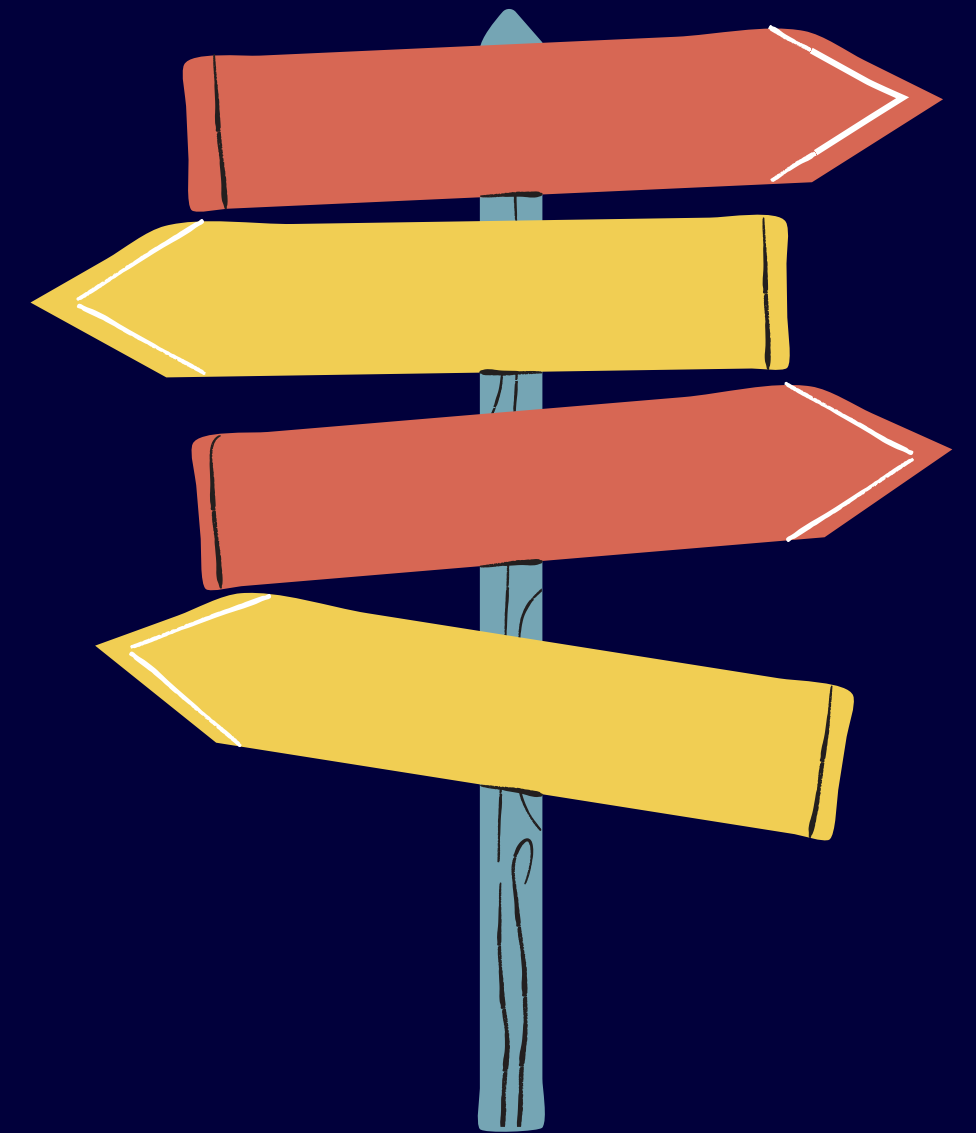
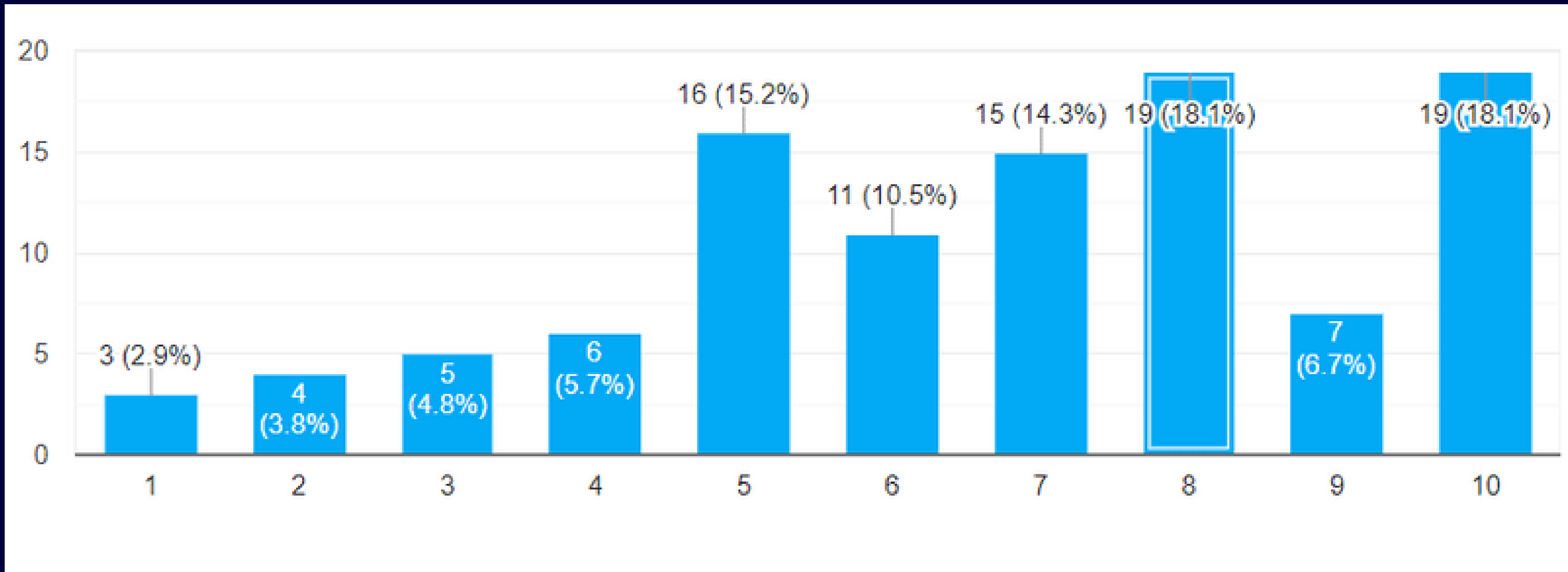


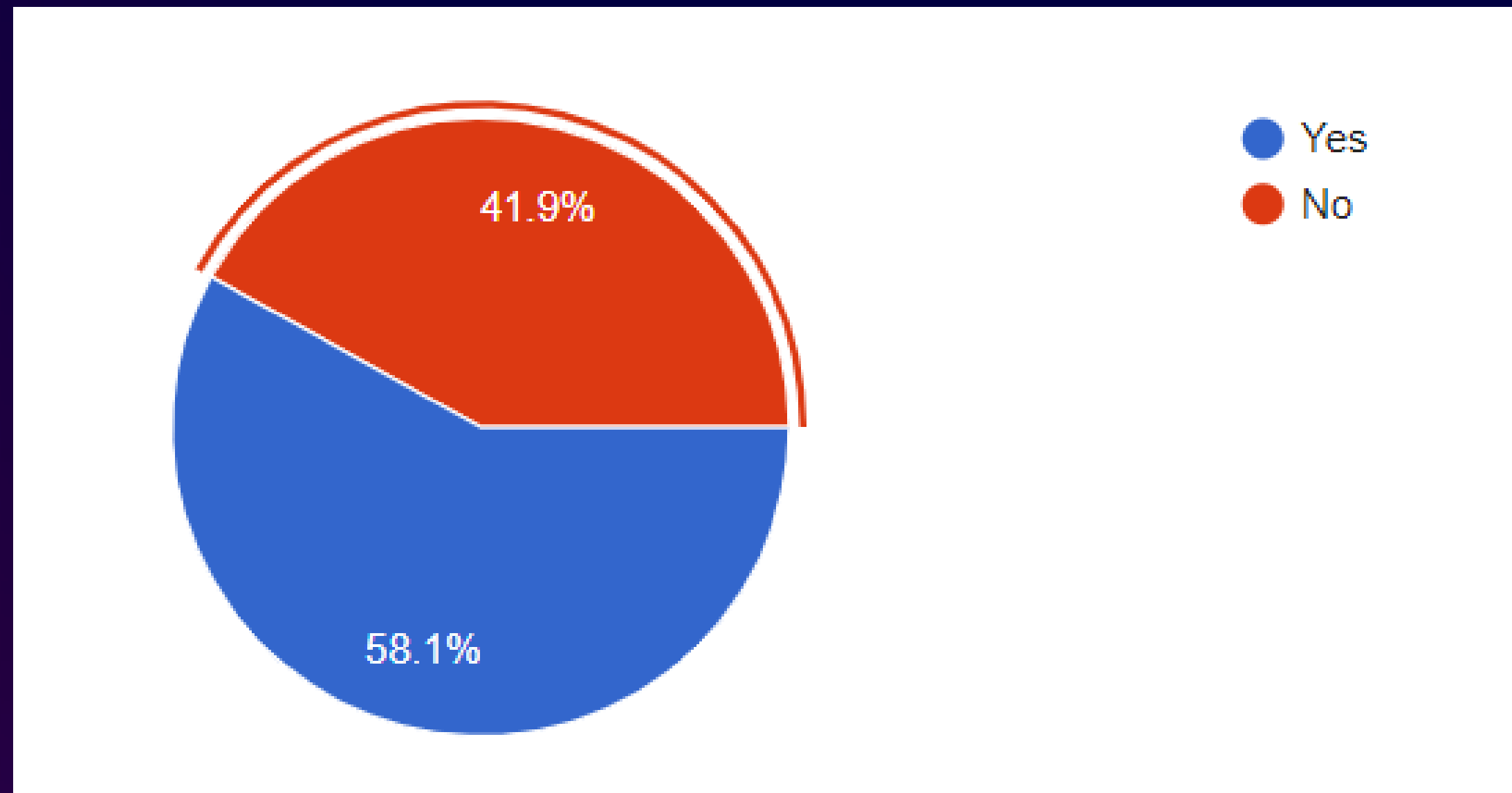
Chart Page

On a scale of 1 to 10, how hard was it to navigate through college during the 1st semester?

(105 responses)




How often did you go late to a class, because you weren't able to locate it?



Proposed Solution

- Our proposed solution is the development of a college navigation system, a user-friendly platform that helps students find their way or needs on campus.
- It comes in handy during crucial times such as finding the exam hall or figuring out which classroom you have to be in the next hour.





FEATURES

1

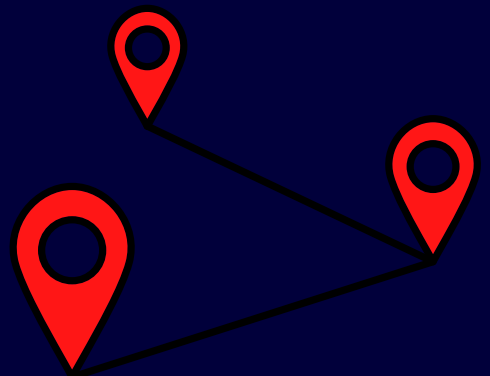
Navigation
Assistance


2

Schedule
Management for
day-to-day tasks

3

Crowd Management
during events





FEATURES

4

Schedule
Management
integrating daily
Time tables

5

Effective use of Wifi
Systems without
Beacons

6

Time Management
to travel from a
place to place





Our Nav



Where we started ?

Met Field Experts and recieved guidance, further shaping our raw idea into a vision

We are here

- Creating Maps & Network points
- Designing Algorithms

Where we are headed to ?

Bringing our functioning elements together and develop a full fledged system

Vision

An effective system that tackles our real world complexities and issues with implementation

Implementation

Description of the project environment, languages, software, and hardware

Languages : Python, C, C++, Java

Hardware : Raspberry Pi/ Mobile Phones

Software : IDEs for the respective programming languages.

Project environment : To begin with the project will be built in a virtual environment of our local machines and will be tested with frameworks such as PyUnit & Pytest

Types of software and hardware that will be used

Our solution follows the Server-Client approach which replaces the hardware components such as Beacons, Wifi Tags etc. Server Client approach establishes a platform for connecting the user and server data with the help of IoT and Trilateration & Triangulation Algorithms achieved through the programming languages mentioned above.

Further, Raspberry Pi Models may be used for experimentation or demonstration purposes.

Challenges Ahead

- The challenges ahead are going to be one of the most difficult ones to solve such as using Client-Server Approach instead of a beacon/Wifi Tags which require a lot of knowledge and expertise.
- It depends on server connectivity and it has to be ensured throughout the use time.
- The availability of resources and dependencies associated with mapping our college.

Thank you!

for this wonderful opportunity