



Kalyani Charitable Trust's
Late G. N. Sapkal College of Engineering

Kalyani Hills, Anjaneri, Trimbakeshwar Road,
Nashik - 422 213



Department of Electronics & Telecommunication Engineering

List of PBL Project

Academic Year	Group No.	Name of Student	Name of Guide/Mentor	Project Title
2020-21	1	Lambe Arjun Motiram	Mrs. K. J. Mahajan	Air Water Pollution Sensing Smart Watch
		Alhat Akash Balasaheb		
		Avhad Rohit Ramhari		
		Avhad Vaishnavi Bansilal		
		Barhate Rutika Vinod		
	2	Baviskar Rupesh Arun		Coin Operated Water ATM with Bottle Dispenser
		Chaudhari Ishwar Somanath		
		Chaudhari Rohit Subhash		
		Chavan Tejas Yogesh		
		Chawala Pradeep Motiram		
	3	Chide Abhishek Ganesh		Wireless Patient Health Monitoring
		Dabhade Vedant Dhananjay		
		Gaikawad Kajal Ramesh		
		Gawali Rahul Dnyaneshwar		
		Hivrale Pramod Shivajirao		
	4	Ide Vijay Bhima		Voice Based Notice Board Using Android
		Jadhav Yukta Prakash		
		Katare Rohit Somnath		
		Kathe Dhanashri Bharat		
		Khandagale Bhagyashri Balasaheb		
	5	Kudal Jyoti Kishor		Ultrasonic Blind Walking Stick
		Mohini Ravindra Magar		
		Mundhe Anand Piraji		
		Nishant Bharat Nagare		
		Pardeshi Ritesh Subhash		
	6	Pardeshi Rohan Ashok		Voice Controlled Home Automation
		Patil Pratik Sahebrao		
		Pawar Archana Gorakshnath		
		Pendharkar Kalyanee Bhausaheb		
		Sangale Puja Sampat		
	7	Shaikh Khushboo Tuffailahmed		Robotic Arm Vehicle Controlled By Touch Screen Display
		Shinde Vanita Kacharu		
Tejale Ashwini Sharad				
Tuplondhe Dignag Rahul				
Wagh Rohit Sukdev				
8	Walunj Prajakta Annasaheb	Billing System Based On RFID		
	Zend Amey Deepak			



2021-22	1	Kolhe Rahul Sanjay	Mrs. K. J. Mahajan		Car Accident & Alcohol Detector & Recorder Blackbox
		Gosavi Rahul Anil			
		Ahire Mayur Adharsing			
		Ahire Prathamesh Pravin			
		Andhale Arti Nivrutti			
	2	Andhale Shivani Sharad			IOT Weather Reporting System using Aduino and Ras Pi
		Athare Suyash Ajaykumar			
		Avhad Sanika Tukaram			
		Avhad Vaishali Khandu			
		Avhad Vikas Ramkisan			
	3	Bachhav Utkarsh Sanjay			Wireless Doorbell Calling System
		Bhagvat Divya Kailas			
		Bhosale Dipesh Sambhaji			
		Chaudhari Rohan Kailas			
		Chavan Nitin Chunilal			
	4	Darade Sonali Kailas			Vehicle Theft Detection/Notification With Remote Engine Locking
		Darade Swati Gangadhar			
		Desale Harshada Sudhakar			
		Deshmane Priyanka Anil			
		Deshmane Roshan Bhausaheb			
	5	Deshmukh Harshal Shreekant			Earthquake Monitor and Alerting System
		Dhanapune Sanket Rajendra			
		Gaikwad Shubham Dilip			
		Gavit Archana Sherma			
		Ghuge Prathamesh Dilip			
	6	Gite Pratiksha Anil			Gsm Based Weather Reporting (Temperature/Light/Humidity)
		Gosavi Nishigandha Bhimashankar			
		Gunjal Gayatri Babasaheb			
		Hinde Mahendra Jayram			
		Ilag Amol Ramkisan			
	7	Jadhav Bhavesh Rajendra			PC Based Home Automation
		Jadhav Nayan Arun			
		Jadhav Pallavi Shankar			
		Jadhav Prashant Kishor			
		Jadhav Priyanka Shivajirao			
	8	Jagtap Rupali Brmhadev			Vehicle Theft Detection/Notification With Remote Engine Locking
Jamadar Hibja Nasimahamad					
Jaybhaye Ravindra Pandurang					
Khokale Jayashree Budha					
Kotwal Hrishikesh Rajendra					
9	Kute Harshad Laxman	GPS Vehicle Tracking & Theft Detection			
	Mahajan Harshal Sanjay				
	Malode Tushar Kalubhau				
	Murkute Rudraksha Sahebrao				

	10	Murkute Sanket Nandkishor	Mrs. K. J. Mahajan	GSM Patient Health Monitoring
		Pansare Akash Appasaheb		
		Patil Rohan Rajendra		
		Patil Anirudh Harsing		
		Patil Mayuri Sanjay		
	Pawar Saurabh Ramesh			
	11	Puri Ganesh Narayan		Home Automation Using Android
		Rokade Neelam Satish		
		Sabale Mina Ramkrushan		
		Sable Shivam Sudhir		
		Sanap Vrushabh Raju		
	12	Sant Adesh Rajendra		Car Parking Project Based on RFID
		Sapnar Shalini Vilas		
		Sawant Anurag Ramkrishna		
		Sawant Sachin Mothabhau		
		Shinde Sayali Bhawrao		
13	Shirsath Vishal Rajaram	Mobile Charging On Coin Insertion		
	Tambe Monika Bapurao			
	Tirthramani Aniket Navin			
	Ugale Darshana Dinkar			
14	Ukade Avinash Jagannath	Home Security using Gsm		
	Wagh Rahul Balasaheb			
	Wagh Rekha Prakash			
	Waghmare Aniket Ashok			
2022-23	1	Bhagade Manohar M.	Mrs. K. J. Mahajan	GSM based Door Unlock System
		Mahajan Raj Bharat		
		Patil Bhavesh Shrikant		
		FUGAT SANGAM ANIL		
		KOTKAR TEJAS AVINASH		
	2	Patil Khushi Harsing		Arduino Based Project for Smart Home
		VAIRAL APEKSHA ANIL		
		BHADANE SANIKA RAJESH		
		MAHALE PRATIKSHA PARAJI		
	3	MADANE AKANKSHA NAVNATH		Motion Controlled Pick & Place Obstacle Avoider Robotic Vehicle
		Pawar Rutuja Chandrakant		
		Rajguru Unnati Sanjay		
		BHANGARE DAYA VAMAN		
		PATIL SANIKA SOPAN		
	4	KOTWAL DIVYA MAHENDRA		GSM Based Three Phase Motor Automation using Arduino
		GAIKWAD GAYATRI NAMDEV		
GAIKWAD INDRA SANJAY				
KADLAG SNEHAL KAILAS				

	MULE AVINASH DATTU		
	BHUSHAN K MAHAJAN		
5	BHOSLE PRATIK BHAGWAT		Prepare a Hardware specification required to develop a wireless LAN for a cyber café for 20 users
	WANKHEDE VAIBHAV BHASKAR		
	KHAIRNAR OM SUDHIR		
	PAWAR DEEPAK ARJUN		
	LABADE DIPAK SANJAY		
6	KANOJIYA GAURI RAJESH		IoT Based Battery Monitoring System for Electric Vehicle
	SIKKALGAR RAASHID MUKHTAR		
	JADHAV PRATHMESH SHRIKANT		
	BOOB SUJAL JITENDRA		
	PAWAR GAURAV MAHENDRA		
7	MUNDHE PRATIK DATTU		Prepare a Hardware specification required to develop a wireless LAN for a cyber café for 20 users
	MAHAJAN CHANDAN ASHOK		
	PATIL RITESH RAJESH		
	KOLTE PRASAD DEELIP		
	AKANKSHA PRAMOD MUTADAK		
8	Deore Abhishek Ramdas		Automatic Solar Tracker
	BAWA NIRAJ VIJAY		
	AWARE SHREYA NITIN		
	MAHAJAN DHANASHRI VIJAY		
	SHIMPI NIKHIL DEVANAND		
9	JADHAV AKSHADA KAILAS		Robot
	RAUT SNEHA SANTOSH		
	POTE GANESH DNYANESHWAR		
	SURYAVANSHI VAIBHAV B.		
10	RATNAKAR GOPAL PRAKASH		Remote Control Based Light System



Prof. S. B. Borse
Head of E & TC Department



Prof. (Dr.) S. B. Bagal
Principal

Prof. (Dr.) Sahebrao B. F.
Principal

Late G. N. Sapkal College of Engineering
Anjaneri, Nashik-422 213.



Kalyani Charitable Trust's

Late G. N. Sapkal College of Engineering, Nashik

DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION ENGINEERING



Report on
“Prepare a hardware specification required to develop a wireless .
LAN for a cyber-cafe for 20 users”

By
Student Name -
Khairnar Om Sudhir
Bhosle Pratik Bhagwat
Pawar Deepak Arjun
Wankhede Vaibhav Bhaskar
Labade Dipak Sanjay

CLASS: S.E. E & TC

Division -


YEAR: 2022-23

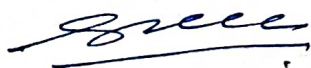
CERTIFICATE

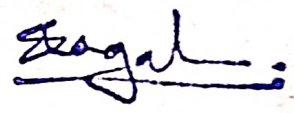
This is to certify that the project report "Prepare a hardware specification required to develop a wireless . LAN for a cyber-cafe for 20 users" submitted by "Om Khairnar,Pratik Bhosle,Deepak Pawar,Vaibhav Wankhede,Dipak Labade" is the bonafied work completed under my supervision and guidance in Second Year Engineering(Electronics & Telecommunication Engineering) for Subject Project Based Learning of Late G. N. Sapkal College of Engineering, Nasik (M.S.) under Savitribai Phule Pune University.

Place: Nashik

Date:


Prof. K. J. Mahajan
[Project Guide]


Prof. S. B. Borse
[H.O.D.E&T.C]


Prof. Dr. S. B. Bagal
Principal

ABSTRACT

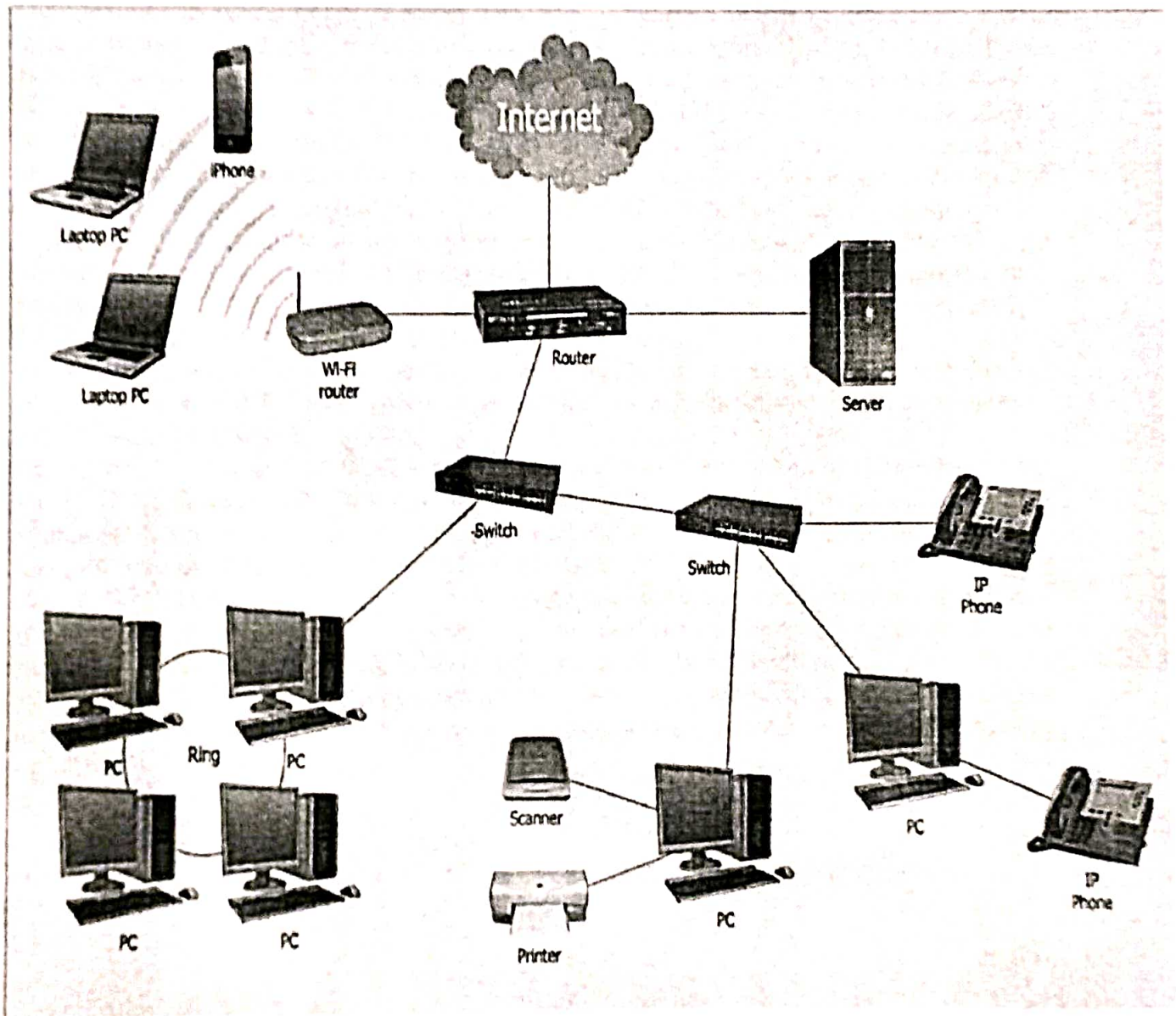
Wireless technology has helped to simplify networking by enabling multiple computer users to simultaneously share resources in a home or business without additional or intrusive wiring. These resources might include a broadband Internet connection, network printers, data files, and even streaming audio and video. This kind of resource sharing has become more prevalent as computer users have changed their habits from using single, stand-alone computers to working on networks with multiple computers, each with potentially different operating systems and varying peripheral hardware. U.S. Robotics wireless networking products offer a variety of solutions to seamlessly integrate computers, peripherals, and data..

INTRODUCTION

Wireless networking enables the same capabilities and comparable speeds of a wired 10BASE-T network without the difficulties associated with laying wire, drilling into walls, or stringing Ethernet cables throughout an office building or home. Laptop users have the freedom to roam anywhere in the office building or home without having to hunt down a connector cable or available jack. Every room in a wireless home or office can be "connected" to the network, so adding more users and growing a network can be as simple as installing a new wireless network adapter. Reasons to choose wireless networking over traditional wired networks include:

- Running additional wires or drilling new holes in a home or office could be prohibited (because of rental regulations), impractical (infrastructure limitations), or too expensive
- Flexibility of location and data ports is requiredompany (ISARC).
- Roaming capability is desired; e.g., maintaining connectivity from almost anywhere inside a home or business
- Network access is desired outdoors; e.g., outside a home or office building

PROJECT DIAGRAM



APPLICATIONS

The IEEE (Institute of Electrical and Electronic Engineers) released the 802.11 specifications in June 1999. The initial specification, known as 802.11, used the 2.4 GHz frequency and supported a maximum data rate of 1 to 2 Mbps. In late 1999, two new addenda were released. The 802.11b specification increased the performance to 11 Mbps in the 2.4 GHz range while the 802.11a specification utilized the 5 GHz range and supported up to 54 Mbps. Unfortunately, the two new specifications were incompatible because they used different frequencies. This means that 802.11a network interface cards (NICs) and access points cannot communicate with 802.11b NICs and access points. This incompatibility forced the creation of the new draft standard known as 802.11g. 802.11g supports up to 54 Mbps and is interoperable with 802.11b products on the market today. The concern is that the 802.11g specification is currently in development and products will not be available until a later date.

The 802.11 specifications were developed specifically for Wireless Local Area Networks (WLANs) by the IEEE and include four subsets of Ethernet-based protocol standards: 802.11, 802.11a, 802.11b, and 802.11g.

802.11 802.11 operated in the 2.4 GHz range and was the original specification of the 802.11 IEEE standard. This specification delivered 1 to 2 Mbps using a technology known as phase shift keying (PSK) modulation. This specification is no longer used and has largely been replaced by other forms of the 802.11 standard.

802.11a 802.11a operates in the 5 - 6 GHz range with data rates commonly in the 6 Mbps, 12 Mbps, or 24 Mbps range. Because 802.11a uses the orthogonal frequency division multiplexing (OFDM) standard, data transfer rates can be as high as 54 Mbps. OFDM breaks up fast serial information signals into several slower sub-signals that are transferred at the same time via different frequencies, providing more resistance to radio frequency interference.

CONCLUSION

We are now in a new era of information and it has become the core factor of social and economic development. Information technology has become the trend of the world. The use of the networks is more closely linked to human society, political, economic and daily work, and all aspects of life. What's more, the computer networks will be destined to become the most important infrastructure for the 21st century global information society.

The WLAN is

the product that combine computer technology and wireless communication technology. It brings a lot of convenience to people's lives. The aim of the project was to create a WLAN for campus. In theory part I gained deep knowledge of the features of WLANs, including the advantages and limitations of WLANs, technical standards of WLANs, security and authentications of WLANs, components of WLANs and different kind topologies of WLANs. After that, I successfully built a topology for the WLAN in the practical part by using the VISIO tool. I also managed channels and APs by using HiveManager NG. Then, I selected the suitable security methods and hardware for the WLAN. There were still some difficulties left

during the implementation of this project. For example, how to deploy APs in a real environment, how to calculate the attenuation power according to the material of the barrier and what kinds of software should be installed in the WLAN? What's more, in this project I just defined an abstract concept for WLAN. If you want to build WLANs, you need an IT group to discuss and consider more about the project, it is not an easy job in the real environment, you have to consider about all the hardware and software at the same time. With the progress and continuous innovation of network technology, WLANs still play an important role in our daily life for many aspect.