AKSHAYA
COLLEGE OF ENGINEERING AND TECHNOLOGY
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DEPARTMENT OF SCIENCE AND HUMANITIES

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FROM THE EDITORIAL DESK…….

Hello, it's time!

The publication of "TECHNICAL MAGAZINE" for this academic year fulfilled the Akshaya Editorial Board. Here we are, at the nexus of creativity and pragmatism, while the world is being transformed by new technologies. The articles in this section emphasize how important technology is to the preservation of the environment.The input is invaluable in shaping our content and fostering a community of informed and passionate tech enthusiasts.

We are grateful to the Management, Principal, and Heads of the Department for their help in releasing this significant technical publication on time. I would like to thank all of the students for their timely submission of the articles. In order for it to accurately reflect the standard of the student community as a whole, I hope that we will be able to publish a magazine of this kind in the future.

The Akshaya editorial board has worked very hard to provide you with an excellent magazine. Get ready to show off your passion.

MESSAGE FROM THE HEAD OF THE DEPARTMENT.....

I'm really happy to share my opinions about the release of technical magazines. As you turn the pages, you will discover some noteworthy achievements performed by children this year. In addition, our young creators have shared their ideas, opinions, convictions, and hopes. The academic program is continually modified and observed to stay ahead of new developments and trends in technology. The publication's s and contributions of students have demonstrated their intellectual acumen.

I applaud the students and editorial board for bringing this Technical Magazine 22–23 editions. I hope for the best for you.

Vision and Mission of the department

Vision

To produce competent Engineers and Scientists by imparting quality Education in Mathematics, Science and Communicative English to develop Research Capability, Employability, Entrepreneurship, Human and Ethical Values so as to meet the challenges in the technology driven society.

Mission

- DM 1: To provide an academic environment that would help the students to acquire analytical and scientific knowledge through a teaching-learning exercise focusing fundamental concepts.
- DM 2: To prepare the students for careers in industries and mould them to become an entrepreneur and as a leader.
- DM 3: To sow the seeds of research in Engineering and Technology by providing facilities oriented towards applied science.

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HOME AUTOMATION SYSTEM DESIGN FOR POWER SAVING

ABSTRACT:

Objectives: This paper provides a solution for home automation, in terms of an energy efficient system. The objective is to design a device in the form of an intelligent remote control,to control the ambient condition of a house. **Methods:** An intelligent RF based remote control is developed which is capable of controlling in two modes- autonomous and semi-autonomous. The dimming levels of appliances are tuned with an optimized PID controller. A real hardware prototype is developed to control two parameters- light intensity and humidity level of the room. The Tuning parameters of the PID controller are calculated with the help of the overall transfer function of the system, which includes the feedback signal from sensor, objective function of optimization algorithm and transfer function of the appliance (which is used to control the ambient conditions of the room). Particle Swarm Optimization algorithm is used to optimize the tuning parameters forPID and results show more energy efficiency with the proposed system, when compared to conventional systems. **Findings:** The experimental results show prominent saving of energy by using the proposed PSO-PID algorithm for the designed system. It is calculated as 37.49% for light intensity control system and for humidity control saving comes out 36.9%. Novelty of the proposed system is new approach in terms of intelligent hybrid remote control.

Methodology

The basic law of the process is to make the system intelligent by applying a PID controller with an optimization algorithm. System collects the data from the sensor node as a feedback signal in a closed loop, so that fixed ambient conditions are maintained as required by the user. Firstly calibration of sensors are done with standard instruments, then dimming operation is elaborated with proper mapping and distribution of 220V which is household supply in India .For Sensors calibration standard instruments are referred for measuring temperature. Sensor output results are compared with standard data and accurate calibration is achieved. Proteus simulation is done for controller based circuits before actual hardware fabrication of the system, to check the feasibility and accuracy of the system he experiment is performed in a room size of 10∗8∗10 cubic feet with one receiver node and one remote control.

System Analysis

System analysis is done on the MATLAB tool with the help of a PID controller and optimizing algorithm. Figure 4 shows the block diagram of the PID controller and optimization algorithm, for the appliances. Before actual implementation of the controller, the overall transfer function is in and out,which includes the transfer function of the appliance, feedback signal and objective function of the optimization algorithm. On the basis of the overall transfer function PID tuning parameters are calculated and transient responses are observed. Figure 5 shows the modelling of the system by using MATLAB. Step response and transient response of bulb and exhaust fan are calculated on the basis of simulation.

Conclusion

It is concluded that the PSO-PID is the most energy efficient method among the selected methods and is best suited for the proposed system. The developed system is to control the light intensity and humidity level control of the room.

TESLA COIL

ABSTRACT:

The Tesla coil Is a resonant transformer Which is used to produce potentials in the range of tens to hundreds, or even thousands of kilovolts. We explain the range of experiments designed to investigate the tesla coil action ending with the design of the upper toroid at the secondary side. This paper explains the simple design of a tesla coil where it is able to produce high voltage with high frequency current at the secondary side. The Tesla coil that has been in this report is recommended to be used for advanced studies, particularly on wireless energy evolution.

Objective:

- We always saw electrical energy in different forms. i.e. light fan.
- Through the tesla coil we can see electricity visually. The Tesla coil electricity can transmit without wires.

Advantages:

- Charging is slow immediately after the spark gap fires.
- Provide excellent load sharing if the 3 phase rectifier is used at high power.
- Allows power throughput to be control by altering the rotary speed Applications
- Spark gap radio transmitters.
- Induction and dielectric heating (vacuum tube Spark gap radio transmitters)
- Induction and dielectric heating (vacuum tube spark gap types)
- Induction coils (differ only in the transformer core material being used).
- Medical X-ray devices (typically driven by an induction coil).
- Quack medical devices (violet-ray).

CONCLUSION

The goal of this project was to extend our knowledge of electrical electronics engineering and shed some light on the technical and artistic nature of Tesla coils, while attempting to create a unique and tesla coil. The coil that was created was capable of producing spark and spark was limited only by the lack of properly functioning of equipment. While there are a number of improvements that could be made the project served its initial purpose increating a coil capable of acting as a power source and illuminating the finer points of creating such a coil. While designing the Tesla coil we learned many things from our high voltage concepts and it is also helpful in brushing up our knowledge in practical application. The main aim was to build and see the practical application of wireless electricity i.e. wireless transmission of electricity. Analyses of very simple improved geometries provide encouraging performance characteristics and further improvement is expected with serious design optimization. Thus the proposed mechanism is promising for many modern applications. We tried to design the unique tesla coil combining both electronics and electrical. By this project we minimized the distance between the electronics and electrical components as practical aspects.

By: SWARNALAKSHMI.A.S, SRILATHA.Y, SNEHA.B SHATAKSHI.M.D , VENNILA .E

SOLAR ENERGY MODEL MAKING IRRIGATION PROCESS

ABSTRACT:

The main purpose of this paper is to provide an automatic irrigation device which senses the level of soil moisture itself. And this level of sensing is achieved by a sensor of soil moisture,which senses the level of moisture and also provides a regulated level of moisture to various crops. If the soil moisture level falls below a certain amount then the sensor sends the detected value to the microcontroller. The water is supplied to the crops automatically to the desired level according to the value sensed by the sensor in order to preserve the moisture content in the soil.The theme of this paper is to minimize human interference (farmers) and use solar energy for irrigation purposes which is one of the non-renewable sources. The PIC microcontroller managed the overall system. This system uses a 4X4 keypad for control of various crops. If the soil moisture content is reduced then the sensor sends the microcontroller the detected value. The water pump then automatically ON depending on the level of humidity. This paper aims at minimizing human interference for farmers and using solar energy for irrigation purposes. The entire device that the PIC microcontroller controls.

METHODOLOGY

This device consists of a solar panel, which is the main source of energy and is provided to the charging controller to extract controlled power from the solar panel at different irradiation,as well as maintaining the correct charging voltage and current to charge the battery and increase its life. Conservation of water in farmland is managed using a soil moisture sensor microcontroller. The boost converter is used to convert DC to DC power to increase the solar panel's output power because if the solar panel receives less light then the boost converter gives higher voltage compared to input voltage. Boost converter is a power supply in the switch mode that contains a diode and a transistor with one energy storage part, the capacitor. Filters are used to decrease ripple output voltage. When the switch is closed the current flows through the inductor in the clockwise direction and it stores some energy through the creation of a magnetic field. The current will be decreased when the switch is opened, because the impedance is higher. Thepreviously created magnetic field will be destroyed to preserve the current flow toward the charge. The polarity must be reversed for this. As a result, there will be two sources in series which will cause a higher voltage to charge the condenser via diode D. Automatic irrigation system comprises solar panel, boost converter, inverter, motor supply, soil moisture sensor, LCDmonitor, 4×4 keypad, micro controller, controller.

CONCLUSION

When this program is introduced, the program proposed benefits the farmers. And with solar panel energy also useful to the government, addressing the energy crisis is a challenge. This Automatic irrigation system is implemented when soil needs water is indicated by the sensor.Then the various crops also get irrigated by turning on the button with this device. The irrigation system measures the crops humidity level according to the pressed button.

By: SRI HARINI.K, SHIFANA.M.F, VARSHINI.P, VIVEKA.R, VINOTHA T

RESTAURANT MANAGEMENT

ABSTRACT:

Restaurant management system To begin with, restaurant management software is specifically designed with features to help operate and manage the restaurant, consisting of various features that help to make a business more effectively and also more profitable. Making each and every process simple andalso faster. All these problems are solved using this project. The objective of this project is to build an electronic restaurant management system using all of the skills and techniques from the field ensuring that no common development mistakes are reproduced.

Technologies used:

PHP, MYSQL, SAP CRYSTAL FORMS, CSS, HTML, BOOTSTRAP,RESULTS AND DISCUSSIONS, RESULTS.

Safety Requirements:

The database may get crashed at any certain time due to virus or operating system failure.Therefore, it is required to take the database backup.

Security Requirements:

The restaurant industry reports some of the highest numbers of security breaches. A lot of sensitive customer data, including names, addresses, debit, and credit card details are processed and stored in hotel databases, hence easily targeted by cyber criminals.

FINAL CONCLUSION:

Here, I have come to the end of the project on the title of student evaluation system. I tried my best to include all the necessary points that are required related to the given title. Some Of the information I wrote in the project's literature review were taken from the internet and Ihave also referred to some books. And this presentation contains information and some concepts of my projects. I do hope that my project will be interesting and may be even knowledgeable."

By: SHYAM GANESH.K, SRIDHARAN.G, UMARALI.R, VISHNU KUMAR.R

LIBRARY MANAGEMENT SYSTEM

ABSTRACT:

A Library Management System is a system that is used to maintain the records of the library. Itcontains work like the number of the available books, the number of books issued, the number of books to return or renew. It helps to maintain a database that is useful to enter new books and records of books borrowed by the members with the respective submission dates. It will reduce the manual work done by the librarian to maintain the record of the library. It allows maintaining the resources in a more operative manner that will help to save time. It is also convenient for the librarian to manage the process of book allocation. It is useful for students as well as a librarian to keep a constant track of the availability of all books in a library.

B. Hardware Requirement

1. 4GB RAM

2. 1TB Hard Disk space in server machine

3. Core i3 or higher

C. Software Requirement

1. Windows 7 or above OS

2. SQL Server

Assumption

- Coding is error free.
- System has specified hardware and software requirements.
- Fast access to the database.
- User does not provide any incorrect information.

Dependencies

- Depends on a third party app MySQL for the database.
- Hardware and software specifications of the running environment.
- Correct data entered by all users.

Conclusion

With the evolution of technology and it being so blended in our daily lives, it is imperative that we discard time-consuming laborious methods to implement something which would be so clean and compact to use through computers. This system provides efficient service to the various users. Implemented with the best technology available, this software is convenient to use and virtually fault-free, providing the users with a smooth and unique experience.

GENERATION OF ALARM CLOCK USING PYTHON

ABSTRACT:

Our project aims to create an alarm clock using libraries such as date time,which provide a user-friendly graphical interface to set alarms in a 24- hour format. By utilizing the current date and time, the program accurately sets off alarms and can be customized to include various alarm types and sounds. The outcome of our work is a functional alarm clock program that demonstrates the practical application of Python programming and showcases its potential for creating everyday solutions. Python's libraries allow for easy customization and adaptation, making it a powerful tool for building useful programs. By implementing an alarm clock in Python, users can enjoy a reliable and customizable alarm system that suits their needs and preferences. This project offers a great opportunity for learning and practicing Python Programming skills, such as working with date and time objects and GUI development usingTkinter. The Python alarm clock project is a useful addition to the portfolio of those interested in programming and software development. It showcases the practical application and customization options of Python, making everyday tasks more manageable. This project represents the capability of python programming in solving real life problems.

LITERATURE REVIEW

There are many existing systems of alarm clocks available on the market today, ranging from simple, traditional mechanical clocks to sophisticated digital clocks with a wide range of features. Here are some of the key components that are typically included in an alarm clock system: Clock display: Every alarm clock has a clock display, which shows the current time.This can be either an analog display with hands or a digital display with numbers. Alarm setting:Most alarm clocks allow users to set one or more alarms at specific times of day. Users can typically choose the alarm sound or tone and the volume of the alarm. Snooze button: Manyalarm clocks include a snooze button, which allows users to temporarily turn off the alarm and snooze for a set period of time before the alarm sounds again.

CONCLUSION

A speech automated alarm clock can be a useful and innovative tool for individuals who prefer a more natural and personalized wake-up experience. This type of alarm clock uses voice recognition technology to respond to verbal commands and can be customized to play music or other audio content, as well as providing weather and news updates. However, the effectiveness of speech automated alarm clocks can be impacted by factors such as background noise and the accuracy of the voice recognition software. Additionally, some individuals may prefer the simplicity and reliability of a traditional alarm clock. Ultimately, the decision to use a speech automated alarm clock depends on personal preference and needs. It is important to consider the potential benefits and drawbacks before making a decision.

INVOICE GENERATOR USING PYTHON PROGRAMMING

ABSTRACT:

The invoicing process is part of a larger set of business processes that includes order placement and acceptance, delivery, and payment. Electronic invoicing allows you to send,receive, and process invoices without the need for human participation. It enables businesses to enjoy shorter payment delays, fewer errors, and lower printing and shipping costs. However,establishing electronic invoice interchange is typically complicated and costly, especially for small and medium-sized businesses. Aside from that, there are a slew of XML-based standards targeted at encoding electronic invoices, which creates a roadblock to widespread adoption and implementation. We propose our electronic invoicing system in this article, which provides low-cost, straightforward electronic invoicing to businesses, particularly small and medium-sized businesses. Providing secure access to the electronic business world, the developed online application allows users to send, receive, and view electronic invoices, as well as save invoice data and link to an electronic invoice recipient and sender registry. The conversion betweenXML-based electronic invoices is given special attention.

Project objectives

Due to the large number of daily business transactions and the variety of non-standardized invoice formats used in India, e-invoicing will be a significant step forward. The Major goal is to achieve interoperability throughout the entire GST ecosystem, which means that an e-invoice issued by one software should be readable by any other software. An invoice can be uniformly interpreted thanks to machine readability. Aside from the aforementioned, this new e-invoicing system seeks to make invoice reporting an inherent part of a business process and eliminate the time-consuming chore of invoice preparation at the end of a return period. One of the major issues is claiming bogus Input Tax Credit (ITC) by producing fraudulent invoices. By The taxing authorities Because tax authorities would have real-time access to data, the e-invoice system will help to control the acts of unscrupulous taxpayers and reduce the number of fraud cases.

CONCLUSIONS

An invoice generation tool is the lifeblood of a retail firm. It allows you to stay on top of all business operations from wherever. It ensures that your business runs smoothly and efficiently while also cutting operational costs. It also allows you to understand your consumers; behavior in a certain place, allowing you to manage your inventory in line with demand. So, if you don't want to lose out on the various advantages of billing software, it's vital that your retail business uses it right now.

By: VARUN KUMAR REDDY. Y, SIVA KESHAVA REDDY.S,MALLIKARJUNA.S ,
YASWANTH SATHYA BALAJI.V

RADAR USING ARDUINO

ABSTRACT:

This paper is about Radar System controlled via Arduino. This RADAR system consists of anultra-sonic sensor and servo motor, these are the major components of the system. Basic working of the system is that it has to detect objects in its defined range. Ultrasonic sensor is attached to the servo motor; it rotates about 180 degrees and gives visual representation on the software called processing IDE. Processing IDE gives graphical representation and it also gives angle or position of the object and distance of the object. This system is controlled through Arduino. Arduino UNO board is sufficient to control ultrasonic sensors and also to interface the sensor and display device. While Researching, we learned about existing navigation and obstacle detection innovations and different systems where ultrasonic sensors are used efficiently. Main application of this RADAR system comes in different fields of navigation, positioning, object identification, mapping, spying or tracking and different applications. These less investment system are also suitable for indoor applications.

METHODOLOGY:

In order to testify to the working of this system, after its designing, construction and programming we placed a few objects in front of the ultrasonic sensor. As the motor started to rotate,our monitor started to display the output through processing IDE. Hence, when the sensor crossed over the object it showed a red segment with the distance and angle where the object is paced. The First object was placed at the distance of 30.5cm measured through a ruler and the system measured the distance at 32cm.While the second object was placed at a distance of 20 cm and the system measured it as 21cm. Hence the calculated efficiency turned out to be 95%

WORKING:

The basic objective of our design is to ascertain the distance position and speed of the obstacle set at some distance from the sensor. Ultrasonic sensor sends the ultrasonic wave in various ways by rotating with the help of servo motors. This wave goes in the air and gets reflected back subsequent to striking some object. This wave is again detected by the sensor and its qualities are analyzed and output is shown on screen indicating parameters, for example, distance and position of object. Arduino IDE is utilized to compose code and transfer coding in Arduino and causes us to detect position or angle of servo motor and it is communicated through the serial port alongside the covered distance of the nearest object in its way. Output of all of this working is shown in the software called processing, it will display the input/output and the range of the object [4].Implementations of the sensors are done in such a way that ultrasonic sensor is attached on top of the servo motor because it have to detect the object and its distance. Arduino (micro-controller) will control the ultrasonic sensor and servo motor and power will be given to both of them through microcontroller [3].

CONCLUSION:

Numerous advanced control methods gave designers more command over different advanced applications. In our paper, the recommended Arduino based radar system DOI:http://dx.doi.org/10.17993/3ctecno.2019.specialissue.14 164 mapping method of whole system is assessed on small principles or scale.

By: VIJAY.S, VARUN.M.S, SIVA RANJAN.K, and SETHUPATHI.T

EARTHQUAKE DETECTOR

ABSTRACT:

An earthquake (also known as a tremor or tremblor) is the result of a sudden release of energy in the Earth's crust that creates seismic waves. Earthquakes are recorded with a seismometer, also known as a seismograph. The moment magnitude of an earthquake is conventionally reported, or the related and mostly obsolete Richter magnitude, with magnitude 3 or lower earthquakes being mostly imperceptible and magnitude 7 causing serious damage over large areas. Intensity of shaking is measured on the modified Mercalli scale. Here we are presenting an arduino based An EarthquakeDetection using Sensing Element to reduce its destructive losses.

Component Used:

- Arduino UNO
- Accelerometer ADXL335
- 16x2 LCD
- Buzzer
- BC547 transistor
- 1k Resistors
- 10K POT
- Power Supply 9v/12v
- Pin Description of accelerometer

Working:

Working of this Earthquake Detector is simple. As we mentioned earlier that we have usedAccelerometer for detecting earthquake vibrations along any of the three axes so that whenever vibrations occur accelerometer senses that vibrations and convert them into equivalent ADC value.Then these ADC values are read by Arduino and shown over the 16x2 LCD. First we need to calibrate the Accelerometer by taking the samples of surrounding vibrations whenever Arduino Powers up.After finding real readings, Arduino compares these values with predefined max and min values. IfArduino finds any changes, values are more then or less than the predefined values of any axis in both directions (negative and positive) then Arduino triggers the buzzer and shows the status of alert over the16x2 LCD and a LED also turned on as well. We can adjust the sensitivity of the Earthquake detector by changing the Predefined values in Arduino code.

Conclusion:

Thus to sum-up we have introduced this product with a view to reduce the destruction caused by earthquake, by alerting the people. It is economical and its price is quoted in such a way that it is affordable by every individual.We have presented a novel technique to solve the automatic detection and classification problem of earth tremor in a single step by using arduino based earthquake detection. In our system the majority of cases offer real practical benefits in the event of an earthquake to safeguard lives and resources.

ELECTROLYSIS

ABSTRACT:

Water electrolysis is one of the simplest methods used for hydrogen production. It has the advantage of being able to produce hydrogen using only renewable energy. To expand the use of water electrolysis, it is mandatory to reduce energy consumption, cost, and maintenance of current electrolyzers, and, on the other hand, to increase their efficiency,durability, and safety. In this study, modern technologies for hydrogen production by water electrolysis have been investigated. In this article, the electrochemical fundamentals of alkaline water electrolysis are explained and the main process constraints (e.g., electrical,reaction, and transport) are analyzed. The historical background of water electrolysis is described, different technologies are compared, and main research needs for the development of water electrolysis technologies are discussed.

Rate of Electrode Processes

Overall rate of the general electrochemical reaction

$$O + ne^- \rightarrow R \qquad (18)$$

may be expressed using Faraday's laws of electrolysis. The amount of material (reactant or product) undergoing electrochemical change, m, is proportional to the amount of electrical charge, Q, involved (m = Q/nF, where the units of each side of the equation are moles). TheFaraday constant, F, is equivalent to the charge associated with a mole of electrons (C mol -1),i.e., it is equal to the product of the Avogadro constant, N A , and the (fundamental) charge on a single electron, Q e . Q is defined as the integral of cell current, i, with respect to time, t, as $Q = \int idt$;for the particular case of constant-current operation, where Q is the product of i and t, m = it/nF.

Some Practical Considerations

To compare different water electrolysis systems, it is necessary to discuss a number of practical parameters relevant to the performance of water electrolyzers, including electrolysis cell configuration, operating conditions, and a few external requirements.Regarding the cell configuration, electrolyzers may be constructed in either unipolar or bipolar design (Figure 8). A unipolar (or "tank-type") electrolyzer (Figure 8a) consists of alternate positive and negative electrodes held apart by porous separators, i.e., membranes. Positive electrodes are all coupled together in parallel, as are the negative electrodes, and the whole assembly is immersed in a single electrolyte bath ("tank") to form a unit cell. A plant-scale electrolyzer is then built up by connecting these units electrically in series. The total voltage applied to the whole electrolysis cell is the same as that applied to the individual unit cells.

Conclusion

Alkaline water electrolysis, powered by renewable energy sources (e.g., sun, wind, and waves), can be integrated into a distributed energy system to produce hydrogen for end use or as an energy storage medium. Compared to the current major methods used for hydrogen production, alkaline water electrolysis is generally seen as a simpler technology; however, it still needs much work to improve its present efficiency. Further research is required to overcome durability and safety issues that still block the widespread use of alkaline water electrolysis.

By: SUHASH S, SHARUK R (G), SURESH S, VASUDEVAN S

SCIENTIFIC CALCULATOR BY USING PYTHON CODE

ABSTRACT:

A scientific calculator is a type of electronic calculator, usually but not always handheld, designed to calculate problems in science, engineering, and mathematics. They have completely replaced slide rules in traditional applications, and are widely used in both education and professional. The python calculator was implemented using tkinter to make the calculation of mathematical functions easier. The application consists of scientific and standard functions. The standard is used to solve scientific notation type math functions like sin, cos, tan, log etc.

Visual Studio Code:

It is a free source code editor, made by Microsoft for Windows, Linux and macOS. Features include support for debugging, syntax highlighting, intelligent code completion, snippets, code refactoring, and embedded Git. Users can change the theme, keyboard shortcuts, preferences, and install extensions that add additional functionality. The python extension in Visual Studio Code makes it an excellent video editor.

Tkinter Programming:

Tkinter is the standard GUI library for Python. Python when combined with Tkinter provides a fast and easy way to create GUI applications. Tkinter provides a powerful object-oriented interface to the Tk GUI toolkit. Creating a GUI application using Tkinter is an easy

task. All you need to do is perform the following steps − Import the Tkinter module. Create the GUI application main window. Add one or more of the above-mentioned widgets to the GUI application. Enter the main event loop to take action against each event triggered by the user.

Python :

It is a high-level, interpreted, interactive and object-oriented scripting language. Python is designed to be highly readable. It uses English words frequently whereas other languages use punctuation, and it has fewer syntactic constructions than other languages. Python is Interpreted − Python is processed at runtime by the interpreter. You do not need to compile your program before executing it. This is similar to PERL and PHP. Python is Interactive − You can actually sit at a Python prompt and interact with the interpreter directly to write your programs. Python is Object-Oriented − Python supports Object-Oriented style or technique of programming that encapsulates code within objects. Python is a Beginner's Language − Python is a great language for the beginner-level programmers and supports the development of a wide range of applications from simple text processing to WWW browsers to games.

Conclusion:

The proposed system is error free. Trivial concepts of Python language are implemented into the system. The usage of Python Tkinter as the GUI provided various controls, such as buttons, labels, and text boxes to build a user-friendly application. The rapid expansion and use of the internet, confirms the splendid future and scope of the project.

By: VISHNU SIDDHAARTH S, VARUN .C , TADIPATRI SAI CHARAN KUMAR REDDY , VETRI MADAN. S

EGG HATCHING GAME USING PYTHON

ABSTRACT:

This report presents the development and evaluation of an Egg Catcher Game,designed for entertainment and educational purposes. The game aims to engage players in a fun and interactive experience while also enhancing their hand-eye coordination and reflexes. The development process involved designing the game mechanics, graphics, and user interface to create an immersive gaming environment. Additionally, various evaluation methods, including user feedback and performance analysis, were employed to assess the game's effectiveness and user satisfaction. Results indicate that the Egg Catcher Game effectively achieves its objectives, providing an enjoyable experience while also improving players' cognitive skills. Recommendations for future enhancements and research directions are also discussed. Overall, this report contributes to the understanding of game development and its potential applications in education and entertainment.

SOFTWARE AND HARDWARE REQUIREMENT

❖Ubuntu (Linux OS)

❖Programming languages:

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❖ Python

- ❖ Software: GNU G++
- ❖ System: Ubuntu 20.04 LTS

CONCLUSION

In conclusion, the development and evaluation of the Egg Catcher Game in Python have demonstrated the effectiveness and potential of Python-based game development in the educational context. By leveraging the accessibility of Python and the functionality of the Pygame library, we have created an engaging and interactive learning experience accessible to novice programmers and learners of all ages.

By:SRI SANJAI G,SIVARAJ .G, SRIRAM.G

LIBRARY MANAGEMENT SYSTEM

ABSTRACT:

The Library Management system (LMS) acts as a tool to transform traditional libraries into digital libraries. In traditional libraries, the students/user has to search for books which are a hassle process and there is no proper maintenance of databases about issues/fines. The overall progress of work is slow and it is impossible to generate a fast report. The librarians have to work allotted for arranging, sorting books in the book sales. At the same time, they have to check and monitor the lend/borrow book details with its fine. It is a tedious process to work simultaneously in different sectors. LMS will assist the librarians to work easily. The LMS supports the librarians to encounter all the issues concurrently. The users need not stand in a queue for a long period to return/borrow a book from the library. The single PC contains all the data in it. The librarians have to assess the system and provide an entry in it. Through LMS the librarian can find the book in the bookshelves. The LMS is designed with the basic features such as a librarian can add/view/update/delete books and students' details in it. Once he/she ingress into the system they can modify any data in the database. The complete model is developed in Dot net technology, the C# language is used to build the front end application whereas the SQL server is exploited as a database. The authorized person can only access the LMS system, they have to log in with their user id and password. As aforementioned, the LMS is designed in a user-friendly manner, so the admin can smoothly activate the system without

expert advice. Every data is stored and retrieved from the SQL database so it is highly secure. Thus our system contributes its new approach towards the digital library setup.

CONCLUSION

The hindrance and issues of the traditional library are identified and promote easy access for the libraries. In the Library Management system, the librarian can add/update/remove the student and book details into the database. The students have a Unique ID for accessing any book from the library. Through the ID, the librarian can check the user details, fine payment, and book details. The LMS reduces labour work and makes the system efficient. In future work, we planned to enhance the LMS by integrating the LMS with Local area Network (LAN) which increases the efficiency of the system.

HOSPITAL MANAGEMENT SYSTEM

ABSTRACT:

Our hospital management system project entails patient registration, data storage, and scheduling doctor appointments. Our program can automatically store the information from each patient and staff member and assign a unique I.D. to each patient. Using the identifier, the user can look for a doctor's availability and patient information. The hospital administration entering the system requires a username and password. A receptionist or an administrator can access it. They can only expand the database. Data recovery is simple. The user experience is excellent. Data processing is quick and highly safeguarded for personal use.

Essentially, it has two modules. One is user level; the other is at the admin level. That being said, doctors and patients. To access the app, the application maintains authentication. The management of doctors' information is one of the administrator's responsibilities. To accomplish this, two databases were created, one for patients and the other for doctors, both of which could be accessed by the admin. The authorities will refer to complaints that the user makes.

WEB SCRAPER

ABSTRACT:

Web Scraping or Web Harvesting is a software technology aimed at extracting information from websites. Web scraping typically simulates human exploration of the World Wide Web by creating a low-level HyperText Transfer Protocol or implementing a Suitable Web Browser. It is closely related to Web Indexing, an information extracting technique used by multiple search engines to index-data on the Web using human programmed bots. In comparison, web scraping stresses on transforming unstructured information (usually in HTML format) on the web into structured information that can be saved and processed in a centralized database.

ONLINE VOTING SYSTEM

ABSTRACT:

The project is mainly aimed at providing a secured and user friendly Online Voting System. The problem of voting is still critical in terms of safety and security. This system deals with the design and development of a web based voting system using fingerprint and aadhar card in order to provide a high performance with high security to the voting system. The proposed Online Voting System allows the voters to scan their fingerprint, which is then matched with an already saved image within a database that is retrieved from aadhar card database of the government. The voting system is managed in a simpler way as all the users must login by aadhar card number and click on his/her favorable candidates to cast the vote. By using biometric fingerprints it provides enough security which reduces the dummy votes.

EXPENSE TRACKER

ABSTRACT:

The web application “Expense Tracker” is developed to manage the daily expenses in a more efficient and manageable way. By using this application we can reduce the manual calculations of the daily expenses and keep track of the expenditure. In this application, the user can provide his income to calculate his total expenses per day and these results will be stored for each user. The application has the provision to predict the income and expense for the manager using data mining. In this application, there are 3 logins such as admin, manager and staff. Admin has the privilege to add, edit, delete manager, add, edit, delete staff, and to get all custom reports. For managers, the privileges are to add type of expense, verify expense, add type of income, verify income and generate reports. For staff, the privileges are to add and edit expense, income and calculations, and send for verifications.

DOPPLER EFFECT

ABSTRACT:

The Doppler Effect is an observed change in frequency of an acoustic or electromagnetic wave due to relative motion of the source and/or observer. We designed a device to simulate this effect. Our illustration provides both visual and aural stimuli granting an entertaining and educational experience**.**

ELECTRIC GENERATOR

ABSTRACT:

The paper presents the dynamic model of the simplest linear electric generator converting back and forth mechanical motion to electrical energy. The dynamic excitation of mechanical oscillations is assumed. The generator model that can explain the fundamentals of energy harvesting electromagnetic converters is given. The paper describes the basic mathematical equations of the generator and their solution with numerical simulation using the MATLAB/Simulink model. The model allows studying transient and steady-state in the simplest generator. Besides, the paper presents the power conversion analysis in different states. This analysis of the simplest electrical generator could be used as a simple and fast way for understanding the main properties of the energy harvesting devices for supplying self-contained control and measuring electronic devices.

WAVE INTERFERENCE DEMONSTRATOR

ABSTRACT:

The proposed approach, called “interference description”, leads to a representation of the pattern, where the spatial relations of its constituent parts are intrinsically taken into account. Due to the intrinsic characteristics of the interference phenomenon, this description includes more information than a simple sum of individual parts. Therefore it is suitable for representing the interrelations of different pattern components. We illustrate that the proposed description satisfies some of the key Gestalt properties of human perception such as invariance, emergence and reification, which are also desirable for efficient pattern description. We further present a method for matching the proposed interference descriptions of different patterns. In a series of experiments, we demonstrate the effectiveness of our description for several computer vision tasks such as pattern recognition, shape matching and retrieval.

SOLAR POWERED MOBILE CHARGER

ABSTRACT:

In modern times, new technology is added to mobile phones. "Daily" would be a better way to express the same idea without using multiple words. Also, there seem to be no spelling, grammar or punctuation errors in the text.. A primary issue for all phone users is the phone's battery life. No matter how far mobile phones have come, the chargers we use today haven't changed much over the years. The objective of our research is to develop an integrated solar mobile charger that can be easily installed into the phone's protective casing. The suggested layout collects solar energy and stores it in a battery that can be recharged. This solution can function as the phone's protective cover and power source in addition to one at the same time.