CYBER CAFÉ MANAGEMENT SYSTEM

A PROJECT REPORT

*Submitted by*

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*in partial fulfilment of the requirements for the degree of*

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BONAFIDE CERTIFICATE

Certified that this M.Tech Integrated project report titled “**CYBER CAFÉ MANAGEMENT SYSTEM**” is the bonafide work of **Mr.SUBHASHIS TRIPATHY** who carried out the project work under my supervision. Certified further, that to the best of my knowledge the work reported herein does not from any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion for this or any other candidate.

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**ABSTRACT**

Cybercafe management system is a software application designed to manage and streamline the operations of a cyber cafe. The system provides a comprehensive solution for managing customer orders, payments, and internet access, as well as monitoring and controlling the usage of computers and other peripherals in the café. The system includes various features such as user registration, login and logout management, computer and printer usage tracking, billing and payment management, and inventory management. The software is designed to be user-friendly, allowing cafe managers to easily configure and customize the system to suit their specific requirements. With the cyber cafe management system, cafe managers can easily track the usage of computers and other peripherals, and generate reports on usage, billing, and inventory. The system also allows managers to set usage limits for customers, ensuring that everyone has equal access to the available resources. Moreover, the system provides a secure payment gateway for customers, allowing them to pay for their usage through various methods such as cash, credit card, or mobile payment. This helps to reduce the risk of fraud and ensures that payments are made securely and transparently. Overall, the cyber cafe management system is an essential tool for any cyber cafe, providing an efficient and streamlined approach to managing operations, improving customer experience, and increasing profitability.

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**CHAPTER 1**

**INTRODUCTION**

* 1. **Overview of CCMS**

Cyber cafes are popular establishments where customers can access the internet and various other services such as printing, scanning, and photocopying. However, managing a cyber cafe can be a daunting task, particularly when it comes to monitoring computer usage, generating bills, and managing inventory. This is where a cyber cafe management system comes into play. It is a software application that is designed to streamline the operations of a cyber cafe and provide an efficient solution for managing customer orders, payments, and internet access. The system is user-friendly, making it easy for cafe managers to configure and customize the software to meet their specific needs. With a cyber cafe management system, managers can easily track computer usage, generate reports on usage, billing, and inventory, and set usage limits for customers. The system also includes a secure payment gateway for customers, ensuring that payments are made transparently and securely. In this way, a cyber cafe management system can help to improve customer experience, increase profitability, and enhance the overall efficiency of a cyber cafe.

* 1. **How CCMS work?**

A cyber cafe management system works by providing a comprehensive software solution for managing the operations of a cyber cafe. The system typically includes features such as user registration, login and logout management, computer and printer usage tracking, billing and payment management, and inventory management. Customers can register and login to the system to access the available resources, and the system will track their usage and generate bills accordingly. Cafe managers can also monitor computer usage and inventory levels, and generate reports on usage, billing, and inventory. The system also includes a secure payment gateway, allowing customers to pay for their usage through various methods such as cash, credit card, or mobile payment. This helps to reduce the risk of fraud and ensures that payments are made transparently and securely. Overall, a cyber cafe management system provides an efficient and streamlined approach to managing operations and improving customer experience.

* 1. **Attributes of Cybercafé management system**

Here are some of the key attributes of a cyber cafe management system:

1. User registration and login management: Allows customers to register and login to the system to access available resources.
2. Computer and printer usage tracking: Tracks the usage of computers and other peripherals in the cafe.
3. Billing and payment management: Generates bills and manages payments for customers.
4. Inventory management: Tracks the inventory of the cafe, including computers, printers, and other peripherals.
5. Usage limits: Allows Cafe managers to set usage limits for customers, ensuring equal access to available resources.
6. Reporting and analytics: Provide reports on usage, billing, and inventory to help cafe managers make informed decisions.
7. Customization: The system is highly customizable to meet the specific needs of the cyber cafe.
8. Secure payment gateway: Provides a secure payment gateway for customers to make payments through various methods such as cash, credit card, or mobile payment.
9. Ease of use: The system is user-friendly, making it easy for cafe managers and customers to use.
10. Efficient operations: Provides an efficient and streamlined approach to managing operations, improving customer experience, and increasing profitability.
    1. **Threats of Cybercafe Management System**

Managing a cybercafe can come with various threats and risks. These include network problems that can occur without the right levels of protection, security issues such as hacking and viruses, and the need for effective time management systems to manage clients' time. However, management software can simplify the entrepreneurial life of cybercafe owners. On the other hand, there are also opportunities for growth in the industry, such as the growing population of daily internet users.

**1.5 Advantages of Cybercafe Management System**  
A Cybercafe Management System has several advantages, including:

1. Better Time Management: The system enables cybercafe owners to manage their resources and time effectively. It automates the process of booking and billing, which saves a lot of time for both customers and cafe owners.
2. Improved Security: With a management system, cybercafe owners can keep track of who is using their computers and for what purpose. The system can also limit access to certain websites or applications, providing better security to customers.
3. Increased Efficiency: Cybercafe Management Systems automate the billing process, which reduces the risk of errors and ensures that the payment process is smooth and efficient. Cafe owners can also use the system to track inventory and manage supplies, which saves time and resources.
4. Better Customer Experience: Cybercafe Management Systems provide a more streamlined experience for customers. With features like online booking and payment, customers can avoid waiting in long queues, and can instead book their computer in advance from the comfort of their home or office.
5. Increased Revenue: By managing resources more effectively, cybercafe owners can increase their revenue. The system can help them to identify the peak hours when their cafe is most busy, and they can adjust their pricing accordingly.
6. Better Time Management: The system enables cybercafe owners to manage their resources and time effectively. It automates the process of booking and billing, which saves a lot of time for both customers and cafe owners.
7. Improved Security: With a management system, cybercafe owners can keep track of who is using their computers and for what purpose. The system can also limit access to certain websites or applications, providing better security to customers.
8. Increased Efficiency: Cybercafe Management Systems automate the billing process, which reduces the risk of errors and ensures that the payment process is smooth and efficient. Cafe owners can also use the system to track inventory and manage supplies, which saves time and resources.
9. Better Customer Experience: Cybercafe Management Systems provide a more streamlined experience for customers. With features like online booking and payment, customers can avoid waiting in long queues, and can instead book their computer in advance from the comfort of their home or office.
10. Increased Revenue: By managing resources more effectively, cybercafe owners can increase their revenue. The system can help them to identify the peak hours when their cafe is most busy, and they can adjust their pricing accordingly.

**1.6 Motivation of the project**

An effective way of improving overall customer experience at your cafe businesses is through implementing a modern-day cybercafé management system. By giving customers the option to pre book computer systems in advance reduces waiting times considerably while increasing convenience during their visits duration. Furthermore, integrating automation functionalities into these systems enable them to perform tasks such as computer reservations and billing inventory keeping errors minimal; hence reducing wasteful resources while saving valuable time; such significant gains contribute positively towards increased profitability over the long run. Its noteworthy that the management system also enhances security by incorporating user authentication mechanisms with access control features. This means that only authorised persons get access to sensitive client data stored within the computer systems a critical aspect in today’s cybersecurity ecosystem. Overall deploying a cybercafe management system positively affects both parties - customers and business owners. For these reasons it is worth considering as an essential business operation priority in today’s digital age.

**1.7 Objective of the project**

In the present scenario the café owner keeps a paper book to keep track of user details. Manual processing of data is always time consuming and may commit more errors. There is much difficulty in allocating cabins to the users. Further reference to the user details is time consuming. Accuracy of such data makes the system unreliable and inefficient. Obviously, there is need of an efficient system. The proposed system rectifies the demerits and defects of the existing system to a greater extend.

**1.8 Scope of the project**

The scope of a project for a Cybercafe management system can vary depending on the specific needs and requirements of a cybercafe. However, the following are some general components that could be included in the project scope:

**1.System Design**

The project will involve designing a user-friendly interface for the faculty attendance management system. The system design will include the development of features such as real-time at history tracking, automated reporting, and customer access to their login-logout time.

**2.Technology**

The project will involve selecting and implementing appropriate technologies such as biometric recognition, GPS tracking, mobile app integration, or RFID technology to track faculty attendance.

**3. Integration:**

The project may involve integrating the attendance management system with existing technology infrastructure such as cybercafe secure Management Systems (CCSMS).

**4. Data Management:**

The project will involve designing a database management system to store cybercafe data, enabling easy access to login-logout records, and generating automated reports.

**5. Maintenance and Upgrades:**

The project will also involve developing a plan for system maintenance, upgrades, and ongoing technical support.

**1.9 Applications**

1. **User Management:** A cybercafe management system can include a comprehensive user management module. This application allows administrators to create user accounts, manage their access privileges, and monitor their activities. It can also track the usage time and charge users, accordingly, ensuring fair and efficient allocation of resources.
2. **Computer Reservation System:** A cybercafe management system can provide a computer reservation application that allows users to book computers in advance. This feature is particularly useful during peak hours or for customers who require specific setups. The application can handle reservation requests, manage availability, and send notifications to users about their reservation status.
3. **Billing and Payment:** Managing billing and payment processes can be streamlined with a dedicated application within the cybercafe management system. It can generate itemized bills based on factors like usage time, printing services, or additional amenities. The application can integrate with various payment gateways, allowing users to make payments conveniently.
4. **Inventory and Resource Management:** Efficiently managing inventory and resources is crucial for a cybercafe. An application within the management system can track the availability and status of computers, peripherals, software licenses, and other resources. It can generate reports on resource utilization, maintenance schedules, and replenishment requirements, helping administrators optimize their inventory.
5. **Reporting and Analytics:** A reporting and analytics application can provide valuable insights into the cybercafe's operations. It can generate reports on key metrics such as revenue, usage patterns, popular services, and customer feedback. These reports can help in identifying trends, making informed decisions, and implementing strategies to enhance the overall efficiency and profitability of the cybercafe.

**CHAPTER 2**

**LITERATURE SURVEY**

The literature survey on cybercafe management aims to provide an in-depth analysis of existing research and literature related to the topic. This survey explores the various aspects of cybercafe and its potential applications in managing user details and user needs in cybercafe. The introduction of the literature survey provides a brief overview of the research problem, its significance, and the scope of the survey. In this section, we discuss the previous research that has been conducted to manage the login-logout and user search activities of customer.

* 1. **Survey on Cybercafe Management Systems**

1. Alex obuh (2020) developed a cybercafe management system using a remote access with providing security. The study demonstrated the role of cybercafé management software in enhancing Internet security, limitations of cybercafé software, future trends, and future research direction**.[2]**

2.Olatunji O. A. and Adeniji A. A et al. (2021).It is argued that cybercafé management software has the capability of keeping a large client database with which it draws its strength for asset tracking, calculating client’s bonus on patronage, and in keeping an audit trail thus securing financial transactions**[1].**

3.I.Ibrahim (2014). This study proposes a radio frequency identification (RFID)-based cybercafe management system for Customers **[6].** This study demonstrated that the system was effective in reducing the administrative workload associated with history tracking and improving security rates.

4.Panindra Silva, (2022) A study on the problems which may raise while using different methods to maintain attendance and how to overcome these problems **[3].** He developed a cloud-based cybercafe management system which helps to tracking the history of customer and provide security.

5.K Sharma, K Verma et al. (2012). This study proposes a radio frequency identification (RFID)-based cybercafe management system for customers **[5].** The study found that the system was effective in reducing the administrative workload associated with attendance tracking and improving overall security rates.

**Table 2.1:** Comparison of Existing Survey Papers

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title of the Paper** | **Authors** | **Name of the publication and year** | **Methodology** | **Issues / Limitation** |
| Security and Software for  Cybercafes | Alex obuh | 2020 Delta State University, Abraka | The role of cybercafé management software in enhancing Internet security, limitations of cybercafé software, future trends, and future research direction. | High initial investment: Implementing a cyber cafe management system requires significant investment in hardware, software, and infrastructure. This can be a significant barrier for small business owners who may not have the financial resources to make such an investment. |
| Cybercafé  Management | Olatunji O. A. and Adeniji A. A | 2021 University  Malaysia Pahang | It is argued that cybercafé management software has the capability of keeping a large client database with which it draws its strength for asset tracking, calculating client’s bonus on patronage, and in keeping an audit trail thus securing financial transactions. | Maintenance costs: Cybercafe management systems require regular maintenance and updates to keep them running smoothly. |
| Design and Implementation of a Cybercafe Management System | Panindra Silva | First year project, Indian institute of technology, Dharwad 2022 | A study on the problems which may raise while using different methods to maintain attendance and how to overcome these problems | It uses win 2000 SQL database which are less compatible than MySQL database system |
| Design and Implementation of RFID-cybercafe Management System for student Members | I. Ibrahim | International Journal of Computer Applications, Vol. 98, No. 19, July 2014 | This study proposes a radio frequency identification (RFID)-based cybercafe.  management system for customers | The system uses RFID tags attached to the user e-ID cards |
| System for student Members | KSharma, K Verma | IEEE journal  16, June 2012 | This study proposes a radio frequency identification (RFID)-based cybercafe management system for customers. | The system uses RFID tags attached to the user e-ID cards |

**CHAPTER 3**

**IMPLEMENTATION**

The implementation of the Cybercafe Management System involves several stages, including planning, installation, configuration, testing, training, and support. Each stage is critical to the success of the system and requires careful attention and management.

**3.1 Proposed Architecture Diagram of CCMS**

The below Figure 3.1 is a system architecture diagram for a cybercafe management system illustrates the overall structure of the system, including its hardware and software components, and the interactions between them. It provides a high-level view of the system architecture, which can help developers and stakeholders understand the system's overall design and functionality.

**Diagram

Description automatically generated**

**Figure 3.1: Architecture Diagram**

1. User Interface Layer: This layer contains the graphical user interface (GUI) that allows users to interact with the system. This layer includes the desktop or web-based application that cafe owners and staff members use to manage the cybercafe's operations.
2. Application Layer: This layer contains the business logic and processing logic for the system. It includes software components that handle tasks such as user authentication, transaction processing, billing, and reporting.
3. Database Layer: This layer contains the database that stores all of the data for the cybercafe management system, including customer and staff information, computer inventory, transaction history, and billing records. The database can be either a traditional relational database or a NoSQL database.
4. Cybercafe Devices Layer: This layer contains the physical devices that are used in the cybercafe, such as computers, printers, scanners, and other peripherals. These devices are connected to the network and are managed by the application layer.

Overall, the system architecture diagram for a cybercafe management system provides a clear overview of the system's components and their interactions, which can help developers and stakeholders understand the system's overall design and functionality.

**3.2 Entity Relationship Diagram**

Below given Figure 3.2 is an entity relationship diagram is a visual representation of entities (objects or concepts) and their relationships in a database.

**Diagram

Description automatically generated**

**Figure 3.2: Entity Relationship Diagram**

An E-R diagram for a cybercafe management system would illustrate the entities involved in the system and the relationships between them.

The entities in a cybercafe management system typically include customers, staff members, computers, and transactions. Here's an example of an E-R diagram for a cybercafe management system:

* 1. Customer entity: includes customer ID, name, contact details (phone number, email), and membership status.
  2. Staff entity: includes staff ID, name, contact details (phone number, email), and job role.
  3. Computer entity: includes computer ID, manufacturer, model, specifications (RAM, processor, etc.), and availability status.
  4. Transaction entity: includes transaction ID, customer ID, staff ID, computer ID, start time, end time, and billing information.

The relationships between these entities are represented by lines connecting them. For example:

1. A customer can have multiple transactions, but each transaction is associated with only one customer. This is a one-to-many relationship.
2. A staff member can handle multiple transactions, but each transaction is associated with only one staff member. This is another one-to-many relationship.
3. A computer can be used for multiple transactions, but each transaction is associated with only one computer. This is also a one-to-many relationship.
4. A transaction involves one customer, one staff member, and one computer. This is a many-to-many relationship, as multiple transactions can involve the same customer, staff member, and/or computer.

Overall, the E-R diagram for a cybercafe management system provides a clear overview of the entities involved and their relationships, which can help developers and stakeholders understand the system's structure and functionality.

**3.3 Algorithm of CCMS**

1. Create the database with the defined schema. Set up any necessary relationships between tables (e.g. foreign keys) and constraints (e.g. check constraints, unique constraints).

2. Insert the initial data into the tables. For example, you might add records for the computers available for use in the cybercafe, customer records with contact information, employee records with their details, etc.

3. After logging in, customers should be presented with a screen that displays their login-logout history, as well as an option to mark pay there money for the current day.

4. When a customer’s marks their payment status, the system should record their ID, the current date, and their paying status (successful/unsuccessful).

5. The system should also be able to generate reports showing the login-logout history records of customers for a specific period, such as a week or a month.

6. Additionally, the system should allow administrators to add customers to the database, update existing records, and delete records if necessary.

7. The system should also provide security features such as password protection, and only authorized users should be able to access the system.

8. Finally, the system should be regularly backed up to ensure that data is not lost in case of system failure or other issues

**3.4 Module Description**

This includes a total of six modules and its descriptions are studied in detail.

* User Login Module
* Computer Management Module
* Billing and Payment Module
* Inventory Management Module
* Security Management Module

**3.4.1 USER LOGIN MODULE**

A user management module in a cybercafe management system would typically involve functionality to manage user accounts and permissions within the system. Some key features of this module could include:

1. **User registration**

The module would allow new users to register for an account with the system. This could involve collecting information such as name, email address, and password.

1. **User authentication**

Once registered in Figure 3.3, users would need to be able to log in to the system securely. The user management module would provide this functionality by verifying user credentials against the system's database. See the figure 3.3 below for user login

A screenshot of a computer screen

Description automatically generated with low confidence

**Figure 3.3: User Login Module**

1. **User profile management**

Users should be able to manage their own profiles within the system, such as updating their contact information or resetting their password.

1. **User activity tracking**

To ensure security and accountability within the system, the user management module could include functionality to track user activity, such as logins and changes to user permissions.

**3.4.2 COMPUTER MANAGEMENT MODULE:**

This module is responsible for maintaining and managing the computers used in the cybercafe. The primary purpose of this module is to ensure that all the computers are functioning optimally and are available for customers to always use:

1. The computer management system module performs various tasks such as monitoring the status of each computer, including hardware and software issues, and ensuring that all computers are updated with the latest security patches and software updates.
2. The module also ensures that all the necessary software applications required by customers are installed and functioning correctly.
3. Additionally, the computer management system module keeps track of the usage time of each computer and generates reports on computer usage, which can be used for billing purposes.
4. The module also allows the cybercafe owner to remotely shut down or restart computers if necessary and to perform maintenance tasks such as disk defragmentation and virus scanning.

See the below figure 3.4 for the explanation of computer management module.

A screenshot of a computer

Description automatically generated

**Figure 3.4: Computer management module**

* + 1. **BILING AND PAYMENT MODULE**

1.The module may also have options that let the proprietor of a cybercafé establish time limitations for each computer, preventing prolonged use of the space by patrons.

2.When a user's time limit has elapsed, the system can be set up to automatically log them out. In order to manage resources and organise staffing levels, the cybercafe owner can also check data and statistics on how much time patrons spend using each computer products and marketing techniques.

3.To offer a complete picture of the cybercafe's finances and client information, the module can also link with other systems, such as accounting software or customer relationship management tools.

Below is Figure 3.5 showing Billing system page.

Graphical user interface, application

Description automatically generated

**Figure 3.5: Billing and Payment Status**

**3.4.4 INVENTORY MANAGEMENT MODULE**

1.To effectively track and control the availability of hardware components and other consumables like printer paper, ink cartridges, and toners, a cybercafe management system must have an inventory management module.

2.The quantity of each item on hand, the date of purchase, and the current usage rate will all be recorded by the module. Using this data, the module will be able to produce notifications that will remind the owner of the cybercafe to place another purchase for the items before they run out of stock.

3.The module will be able to forecast future consumption rates using historical data and will be able to recommend the ideal order quantity to prevent both understocking and overstocking.

1. The inventory management feature will also give the owner of the cybercafe real-time visibility into the inventory levels and consumption rates, assisting him or her in making educated decisions regarding pricing, promotions, and product placement.

See the below figure 3.6 which explains about inventory Management Module

Graphical user interface, application

Description automatically generated

**Figure 3.6: Inventory Management Module**

**3.4.5 SECURITY MANGEMENT SYSTEM**

Any unauthorised attempts to access the cybercafe's network or systems will be found by intrusion detection systems. The cybercafe will be warned by the intrusion detection system.

Here are some key features that a security module can provide:

1. **Access control**

The security module can enable access control mechanisms to limit access to data to authorized personnel only. The system can have role-based access control, where different roles (such as, faculty members, and administrators) have different levels of access to attendance data.

1. **Authentication**

The security module can implement various authentication mechanisms, such as username and password-based authentication, two-factor authentication, or biometric authentication, to ensure that only authorized users can access the system.

1. **Data encryption**

The security module can enable encryption of attendance data at rest and in transit to ensure that sensitive data is protected from unauthorized access.

From figure 3.7 we have known about security management module

A screenshot of a computer

Description automatically generated with medium confidence

**Figure 3.7: Security Management Module**

**CHAPTER 4**

**RESULTS AND DISCUSSIONS**

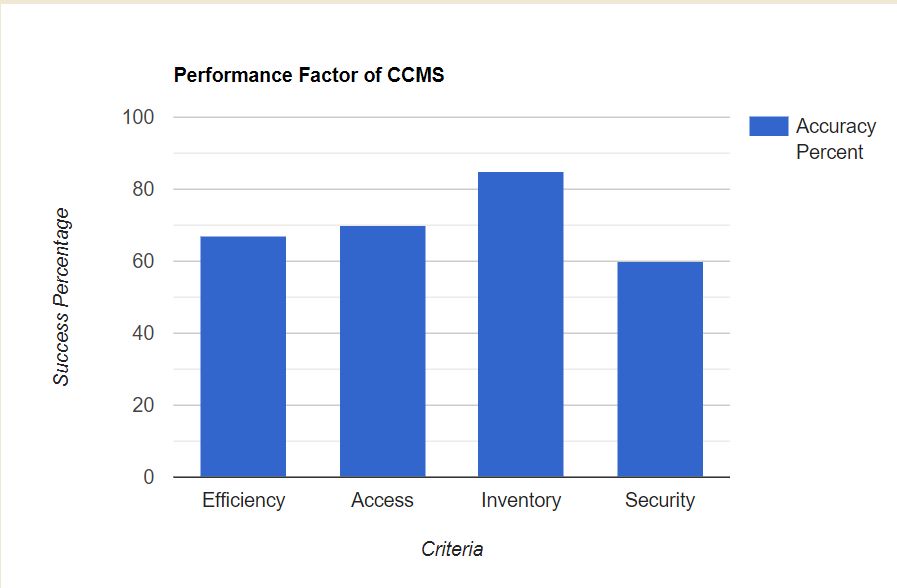
The result and discussion section for a Library management system is where the findings of the study are presented and analysed. This section typically includes a detailed description of the system's performance, accuracy, and effectiveness in meeting the objectives of the project.

**4.1 Outcome for The Project**

The implementation of a cybercafe management system yields numerous positive outcomes for libraries. It improves efficiency by automating tasks such as cataloguing, circulation, and inventory management, resulting in streamlined processes and reduced manual work. Patrons benefit from enhanced access to information, as the system provides advanced search capabilities and facilitates locating resources within the cybercafe's collection. Accurate inventory management ensures precise tracking of borrowed and returned items, minimizing errors and optimizing inventory control. Circulation processes are streamlined, enabling administrator to issue, renew, and return items efficiently while managing borrower information and fine calculations. Moreover, some systems promote resource sharing among libraries, expanding access to a broader range of materials. Finally, the system's reporting and analytics features provide valuable insights for data-driven decision-making, further enhancing cybercafe operations and services. Overall, the implementation of a cybercafe management system greatly improves efficiency, accessibility, and resource management, leading to a more effective and user-friendly experience. Below is the Figure 4.1 which shows the single bar graph for projects. The below is consolidated outcome criteria for the cybercafe management system in Table 4.1.

**Table 4.1: Performance Factors of CCMS**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl no** | **Criteria** | **Efficiency Percentage** | **Description** |
| 1 | Efficiency | 84% | A cybercafe management system automates various tasks such as cataloguing, circulation, and inventory management. |
| 2 | Access | 65% | With a cybercafe management system, patrons can easily search for and login, logout and other resources within the cybercafe's collection. |
| 3 | Inventory | 85% | A Cybercafe management system tracks the cybercafe's inventory, including the availability and location of each item. |
| 4 | Security | 60% | The information stored in the database has been encrypted and the key is only given to the higher authorities but there is still high chance of data loss and no proper back up method is implemented |



**Figure 4.1 Success Output Graph**

**CHAPTER 5**

**CONCLUSION AND FUTURE WORK**

**5.1 Conclusion**

In this project, I explain the concept of Cybercafe management system which are already present. I describe the proposed system and explain the features implemented by our proposed system.

I also give a brief overview of the technologies used during the development of our proposed system. This project can be further refined and extended by introducing new and more innovative features we made attempt to effectively introduce the concept of event management systems already existing in the society. We then explain the concept of online event management systems which are already present.

I describe the proposed system and explain the features implemented by our proposed system. I also give a brief overview of the technologies used during the development of our proposed system. This project can be further refined and extended by introducing new and more innovative features which provides some modules.

It provides several modules, including user management, computer management, time management, billing and payment, inventory management and security management.

These modules work together to streamline operations, improve customer service, and increase profitability with a cybercafe management system, owners can easily track computer usage, manage inventory, and generate reports on financial transactions, usage statistics, and other important metrics. They can also ensure that their cybercafe is secure and protected from cyber threats.

**5.2 Future Work**

The future scope of a cybercafe management system is promising, as technology continues to evolve, and new opportunities emerge. One area of future scope is the integration of new technologies, such as virtual and augmented reality, which can enhance the customer experience and provide new revenue streams for cybercafes. Additionally, as 5G networks become more widely available, cybercafe management systems can take advantage of increased network speeds and bandwidth to offer new services and capabilities.

Another area of future scope for cybercafe management systems is the use of artificial intelligence and machine learning algorithms. By analysing customer behaviour and usage patterns, these systems can optimize operations and provide valuable insights for cybercafe owners. This can help them to identify areas for improvement and make data-driven decisions that can increase efficiency and profitability.

Finally, the adoption of cloud-based infrastructure can provide several benefits for cybercafe management systems. By moving the system to the cloud, cybercafes can benefit from increased scalability, improved data security, and reduced infrastructure costs. This can help cybercafe owners to focus on their core business operations and provide better services to their customers.

Overall, the future scope of cybercafe management systems is promising, with several areas for development and innovation that can enhance the customer experience and improve operational efficiency.

**REFERENCES**

Here are ten references that you can use for cybercafe management systems:

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**APPENDICES**

**I. CODE**

**A.1. USER LOGIN MODULE:**

*from tkinter import \**

*import sqlite3*

*root = Tk()*

*root.title("Python: Simple Login Application")*

*width = 400*

*height = 280*

*screen\_width = root.winfo\_screenwidth()*

*screen\_height = root.winfo\_screenheight()*

*x = (screen\_width/2) - (width/2)*

*y = (screen\_height/2) - (height/2)*

*root.geometry("%dx%d+%d+%d" % (width, height, x, y))*

*root.resizable(0, 0)*

*#==============================VARIABLES======================================*

*USERNAME = StringVar()*

*PASSWORD = StringVar()*

*#==============================FRAMES=========================================*

*Top = Frame(root, bd=2, relief=RIDGE)*

*Top.pack(side=TOP, fill=X)*

*Form = Frame(root, height=200)*

*Form.pack(side=TOP, pady=20)*

*#==============================LABELS=========================================*

*lbl\_title = Label(Top, text = "Python: Simple Login Application", font=('arial', 15))*

*lbl\_title.pack(fill=X)*

*lbl\_username = Label(Form, text = "Username:", font=('arial', 14), bd=15)*

*lbl\_username.grid(row=0, sticky="e")*

*lbl\_password = Label(Form, text = "Password:", font=('arial', 14), bd=15)*

*lbl\_password.grid(row=1, sticky="e")*

*lbl\_text = Label(Form)*

*lbl\_text.grid(row=2, columnspan=2)*

*#==============================ENTRY WIDGETS==================================*

*username = Entry(Form, textvariable=USERNAME, font=(14))*

*username.grid(row=0, column=1)*

*password = Entry(Form, textvariable=PASSWORD, show="\*", font=(14))*

*password.grid(row=1, column=1)*

*#==============================BUTTON WIDGETS=================================*

*btn\_login = Button(Form, text="Login", width=45, command=Login)*

*btn\_login.grid(pady=25, row=3, columnspan=2)*

*btn\_login.bind('<Return>', Login)*

*#==============================METHODS========================================*

*def Database():*

*global conn, cursor*

*conn = sqlite3.connect("pythontut.db")*

*cursor = conn.cursor()*

*cursor.execute("CREATE TABLE IF NOT EXISTS `member` (mem\_id INTEGER NOT NULL PRIMARY KEY AUTOINCREMENT, username TEXT, password TEXT)")*

*cursor.execute("SELECT \* FROM `member` WHERE `username` = 'admin' AND `password` = 'admin'")*

*if cursor.fetchone() is None:*

*cursor.execute("INSERT INTO `member` (username, password) VALUES('admin', 'admin')")*

*conn.commit()*

*def Login(event=None):*

*Database()*

*if USERNAME.get() == "" or PASSWORD.get() == "":*

*lbl\_text.config(text="Please complete the required field!", fg="red")*

*else:*

*cursor.execute("SELECT \* FROM `member` WHERE `username` = ? AND `password` = ?", (USERNAME.get(), PASSWORD.get()))*

*if cursor.fetchone() is not None:*

*HomeWindow()*

*USERNAME.set("")*

*PASSWORD.set("")*

*lbl\_text.config(text="")*

*else:*

*lbl\_text.config(text="Invalid username or password", fg="red")*

*USERNAME.set("")*

*PASSWORD.set("")*

*cursor.close()*

*conn.close()*

*def HomeWindow():*

*global Home*

*root.withdraw()*

*Home = Toplevel()*

*Home.title("Python: Simple Login Application")*

*width = 600*

*height = 500*

*screen\_width = root.winfo\_screenwidth()*

*screen\_height = root.winfo\_screenheight()*

*x = (screen\_width/2) - (width/2)*

*y = (screen\_height/2) - (height/2)*

*root.resizable(0, 0)*

*Home.geometry("%dx%d+%d+%d" % (width, height, x, y))*

*lbl\_home = Label(Home, text="Successfully Login!", font=('times new roman', 20)).pack()*

*btn\_back = Button(Home, text='Back', command=Back).pack(pady=20, fill=X)*

*def Back():*

*Home.destroy()*

*root.deiconify()*

*#==============================INITIALIATION==================================*

*if \_\_name\_\_ == '\_\_main\_\_':*

*root.mainloop()*

**A.2. COMPUTER MANAGEMENT MODULE:**

*import tkinter as tk*

*import mysql.connector*

*# Connect to MySQL database*

*mydb = mysql.connector.connect(*

*host="localhost",*

*user="yourusername",*

*password="yourpassword",*

*database="yourdatabase"*

*)*

*# Create cursor*

*mycursor = mydb.cursor()*

*# Create function to add a new computer to the database*

*def add\_computer():*

*sql = "INSERT INTO computers (name, status) VALUES (%s, %s)"*

*val = (computer\_name.get(), "Available")*

*mycursor.execute(sql, val)*

*mydb.commit()*

*computer\_name.set("")*

*update\_list()*

*# Create function to update the status of a computer in the database*

*def update\_status():*

*selected\_computer = computer\_listbox.get(tk.ACTIVE)*

*sql = "UPDATE computers SET status = %s WHERE name = %s"*

*if selected\_computer:*

*if selected\_computer.endswith(" - Available"):*

*val = ("In Use", selected\_computer[:-13])*

*else:*

*val = ("Available", selected\_computer[:-8])*

*mycursor.execute(sql, val)*

*mydb.commit()*

*update\_list()*

*# Create function to update the computer listbox*

*def update\_list():*

*computer\_listbox.delete(0, tk.END)*

*mycursor.execute("SELECT \* FROM computers")*

*for computer in mycursor:*

*if computer[1] == "Available":*

*computer\_listbox.insert(tk.END, computer[0] + " - Available")*

*else:*

*computer\_listbox.insert(tk.END, computer[0] + " - In Use")*

*# Create GUI window*

*window = tk.Tk()*

*window.title("Computer Management System")*

*# Create computer name label and entry box*

*computer\_name\_label = tk.Label(window, text="Computer Name:")*

*computer\_name\_label.grid(row=0, column=0)*

*computer\_name = tk.StringVar()*

*computer\_name\_entry = tk.Entry(window, textvariable=computer\_name)*

*computer\_name\_entry.grid(row=0, column=1)*

*# Create add computer button*

*add\_button = tk.Button(window, text="Add Computer", command=add\_computer)*

*add\_button.grid(row=1, column=0, columnspan=2)*

*# Create computer listbox*

*computer\_listbox = tk.Listbox(window)*

*computer\_listbox.grid(row=2, column=0, columnspan=2)*

*# Create update status button*

*status\_button = tk.Button(window, text="Update Status", command=update\_status)*

*status\_button.grid(row=3, column=0, columnspan=2)*

*# Update computer listbox*

*update\_list()*

*# Start GUI loop*

*window.mainloop()*

**A.3. TIME MANAGEMENT MODULE:**

*import tkinter as tk*

*import datetime as dt*

*class TimeSystemModule(tk.Tk):*

*def \_\_init\_\_(self):*

*super().\_\_init\_\_()*

*self.title("Time System Module")*

*self.geometry("400x400")*

*# Create UI elements*

*self.label = tk.Label(self, text="Welcome to the Cybercafe Time System Module")*

*self.label.pack(pady=10)*

*self.start\_time\_button = tk.Button(self, text="Start Time", command=self.start\_time)*

*self.start\_time\_button.pack(pady=10)*

*self.end\_time\_button = tk.Button(self, text="End Time", command=self.end\_time)*

*self.end\_time\_button.pack(pady=5)*

*self.time\_label = tk.Label(self, text="")*

*self.time\_label.pack(pady=10)*

*def start\_time(self):*

*# Record the current time as the start time*

*self.start\_time = dt.datetime.now()*

*self.update\_time\_label()*

*def end\_time(self):*

*# Calculate the duration between the start time and current time and display it*

*end\_time = dt.datetime.now()*

*duration = end\_time - self.start\_time*

*duration\_str = f"Session duration: {duration.seconds // 60} minutes and {duration.seconds % 60} seconds"*

*self.time\_label.config(text=duration\_str)*

*def update\_time\_label(self):*

*# Update the time label to display the elapsed time since the start time*

*elapsed\_time = dt.datetime.now() - self.start\_time*

*elapsed\_time\_str = f"Elapsed time: {elapsed\_time.seconds // 60} minutes and {elapsed\_time.seconds % 60} seconds"*

*self.time\_label.config(text=elapsed\_time\_str)*

*self.after(1000, self.update\_time\_label) # Call this function again after 1 second*

*# Example usage*

*app = TimeSystemModule()*

*app.mainloop()*

**A.4. BILLING AND PAYMENT MODULE:**

*import tkinter as tk*

*class BillingPaymentModule(tk.Tk):*

*def \_\_init\_\_(self, customer\_name, service\_name, price):*

*super().\_\_init\_\_()*

*self.title("Billing and Payment Module")*

*self.geometry("400x400")*

*self.customer\_name = customer\_name*

*self.service\_name = service\_name*

*self.price = price*

*# Create UI elements*

*self.label = tk.Label(self, text="Welcome to the Cybercafe Billing and Payment Module")*

*self.label.pack(pady=10)*

*self.customer\_name\_label = tk.Label(self, text=f"Customer Name: {customer\_name}")*

*self.customer\_name\_label.pack(pady=5)*

*self.service\_name\_label = tk.Label(self, text=f"Service Name: {service\_name}")*

*self.service\_name\_label.pack(pady=5)*

*self.price\_label = tk.Label(self, text=f"Price: ${price}")*

*self.price\_label.pack(pady=5)*

*self.pay\_button = tk.Button(self, text="Pay", command=self.pay)*

*self.pay\_button.pack(pady=10)*

*def pay(self):*

*# Update the customer's account balance and save the transaction*

*# Here we'll just display a message that the payment was successful*

*self.label.config(text="Payment Successful!")*

*# Create an instance of the BillingPaymentModule*

*app = BillingPaymentModule("John Doe", "Internet Access", 10)*

*# Start the application*

*app.mainloop()*

**A.5. INVENTORY MANAGEMENT SYSTEM:**

*import tkinter as tk*

*class InventoryModule(tk.Tk):*

*def \_\_init\_\_(self, items):*

*super().\_\_init\_\_()*

*self.title("Inventory System Module")*

*self.geometry("400x400")*

*self.items = items*

*# Create UI elements*

*self.label = tk.Label(self, text="Welcome to the Cybercafe Inventory System Module")*

*self.label.pack(pady=10)*

*self.item\_listbox = tk.Listbox(self, selectmode="single")*

*self.item\_listbox.pack(pady=5)*

*for item in self.items:*

*self.item\_listbox.insert(tk.END, item)*

*self.add\_item\_button = tk.Button(self, text="Add Item", command=self.add\_item)*

*self.add\_item\_button.pack(pady=10)*

*self.remove\_item\_button=tk.Button(self,text="RemoveItem", command=self.remove\_item)*

*self.remove\_item\_button.pack(pady=5)*

*def add\_item(self):*

*# Open a dialog box to enter the new item and add it to the inventory*

*new\_item = tk.simpledialog.askstring("Add Item", "Enter the name of the new item:")*

*if new\_item:*

*self.items.append(new\_item)*

*self.item\_listbox.insert(tk.END, new\_item)*

*def remove\_item(self):*

*# Remove the selected item from the inventory*

*selected\_item = self.item\_listbox.curselection()*

*if selected\_item:*

*item\_index = selected\_item[0]*

*item = self.item\_listbox.get(item\_index)*

*self.items.remove(item)*

*self.item\_listbox.delete(item\_index)*

*# Example usage*

*items = ["Computers", "Printers", "Scanners"]*

*app = InventoryModule(items)*

*app.mainloop()*

**A.6. SECURITY MANAGEMNT MODULE:**

*import tkinter as tk*

*class SecurityManagementModule(tk.Tk):*

*def \_\_init\_\_(self):*

*super().\_\_init\_\_()*

*self.title("Security Management Module")*

*self.geometry("400x400")*

*# Create UI elements*

*self.label = tk.Label(self, text="Welcome to the Security Management Module")*

*self.label.pack(pady=10)*

*self.username\_label = tk.Label(self, text="Username:")*

*self.username\_label.pack(pady=5)*

*self.username\_entry = tk.Entry(self)*

*self.username\_entry.pack(pady=5)*

*self.password\_label = tk.Label(self, text="Password:")*

*self.password\_label.pack(pady=5)*

*self.password\_entry = tk.Entry(self, show="\*")*

*self.password\_entry.pack(pady=5)*

*self.login\_button = tk.Button(self, text="Login", command=self.login)*

*self.login\_button.pack(pady=10)*

*def login(self):*

*# Check username and password*

*username = self.username\_entry.get()*

*password = self.password\_entry.get()*

*if username == "admin" and password == "password":*

*self.label.config(text="Login Successful!")*

*else:*

*self.label.config(text="Invalid Username or Password")*

*# Create an instance of the SecurityManagementModule*

*app = SecurityManagementModule()*

*# Start the application*

*app.mainloop()*

**MYSQL**

*CREATE DATABASE security;*

*USE security;*

*CREATE TABLE users (*

*id INT NOT NULL AUTO\_INCREMENT,*

*username VARCHAR(50) NOT NULL,*

*password VARCHAR(50) NOT NULL,*

*PRIMARY KEY (id)*

*);*

*CREATE TABLE logs (*

*id INT NOT NULL AUTO\_INCREMENT,*

*user\_id INT NOT NULL,*

*action VARCHAR(100) NOT NULL,*

*timestamp TIMESTAMP NOT NULL DEFAULT CURRENT\_TIMESTAMP,*

*PRIMARY KEY (id),*

*FOREIGN KEY (user\_id) REFERENCES users(id)*

*);*

**II.CERTIFICATION**

