



Marathwada Mitra Mandal's
COLLEGE OF ENGINEERING

Karvenagar, Pune

An Autonomous Institute

Presentation

On

PROJECT TOPIC Name

Designing a Cyber Cafe Management System



Group Information

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Outline:

- A. Introduction
- B. Research
- C. Analysis
- D. Ideate
- E. Build
- F. Test
- G. Implement
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A. Introduction

Purpose:

Purpose of Designing a Cyber Cafe Management System :

The Cyber Cafe Management System is designed to streamline operations, enhance customer experience, and ensure efficient management of resources in a cyber cafe. Below are its key purposes:

1. Efficient User Session Management

- Tracks users' login and logout times.
- Calculates usage time automatically and generates bills accordingly.
- Ensures fair usage and prevents unauthorized access.

2. Security and Data Privacy

- Ensures that user activities are logged for security purposes.
- Implements restrictions on certain websites or applications as per regulations.
- Provides secure access for customers using unique login credentials etc.

Overview:

Importance of a Structured Workflow in a Cyber Cafe Management System :

Designing a Cyber Cafe Management System with a structured workflow is essential for effectively monitoring and improving operations across departments. Here's why it is important:

1. Enhanced Operational Efficiency

- A structured workflow standardizes tasks like user registration, session management, and billing.
- Reduces manual intervention, minimizes errors, and speeds up operations.

2. Improved Resource Utilization

- Tracks real-time availability of computers and other resources.
- Ensures optimal usage of systems, printers, and other services, avoiding idle time or overuse.

3. Better Customer Experience

- Reduces waiting time for users by efficiently allocating systems.
- Automates session tracking and billing, making the process hassle-free for customers.

4. Accurate Reporting and Insights

- Generates reports on usage trends, peak hours, and revenue.
- Helps in identifying inefficiencies and making informed decisions to improve services.
- Integrates different operations such as billing, customer management, and technical support.
- Enables staff to focus on improving customer service rather than repetitive administrative tasks.

5. Compliance with Legal and Security Standards

- Logs user activities to ensure compliance with local cyber laws.
- Protects user data and maintains secure access for customers etc.

Key Themes:

The process of designing a Cyber Cafe Management System revolves around six critical themes: research, analysis, ideation, building, testing, and implementation. Each theme contributes to creating a functional, user-friendly, and efficient system.

1. Research

- Purpose: Gather insights into the requirements of the cyber cafe, customers, and regulatory needs.
- Key Activities:
 - Understand user needs (e.g., session tracking, billing automation, resource monitoring).
 - Identify industry standards and compliance regulations (e.g., cyber laws, data privacy).
 - Analyze competitor solutions to benchmark features and usability.

2. Analysis

- Purpose: Assess and define the functional and non-functional requirements of the system.
- Key Activities:
 - Define the scope (e.g., session tracking, resource allocation, reporting tools).
 - Map technical requirements like hardware, software, and network resources.
 - Identify potential challenges and risks (e.g., system overload, data breaches).

3. Ideation

- Purpose: Conceptualize the design and functionality of the system.
- Key Activities:
 - Create wireframes and workflows for the user interface and backend processes.
 - Design features like user login, real-time system tracking, and billing.
 - Plan role-based access for staff, administrators, and customers.

4. Building

- Purpose: Develop the system based on the defined requirements and designs.
- Key Activities:
 - Develop core modules (e.g., session tracking, billing system, reporting tools).
 - Build a database for user records, session logs, and transaction history.

5. Testing

- Purpose: Ensure the system is error-free, secure, and meets all requirements.
- Key Activities:
 - Conduct unit testing for individual modules and integration testing for the overall system.
 - Perform stress tests to ensure system stability during high loads.
 - Validate security features, ensuring compliance with regulations.

B) Research :

Designing a Cyber Cafe Management System :

Designing a Cyber Cafe Management System involves creating a comprehensive software solution to manage resources, user activities, and finances efficiently. Below are the key points derived from research on its design process:

1. Objectives :

- **Efficient Operations:** Automate session management, billing, and system allocation.
- **User Experience:** Provide smooth and secure access for users.
- **Resource Optimization:** Ensure the effective utilization of computers, printers, and internet bandwidth.
- **Regulatory Compliance:** Log user activities to meet cyber laws and data privacy requirements.

2. Functional Requirements :

- **User Management:** Register users and track login/logout times.
- **Session Monitoring:** Monitor system usage and calculate charges automatically.
- **Billing System:** Generate invoices based on usage duration and services availed.

4. Challenges

- Ensuring data security and privacy for users.
- Handling simultaneous users without performance lags.
- Adapting to specific business requirements like multiple billing rates.

5. Benefits

- Simplifies management tasks, reducing manual errors.
- Enhances customer satisfaction with streamlined services.
- Provides actionable insights for decision-making via reports and analytics.

3. Key Features

- User authentication with secure login credentials.
- Role-based access for administrators and staff.
- Integration with peripherals like printers for usage tracking.

By focusing on automation, security, and user-centric features, a well-designed Cyber Cafe Management System can significantly improve business efficiency and customer experience.

C. Analysis

Analysis on Designing a Cyber Cafe Management System

Designing a Cyber Cafe Management System involves understanding the operational needs, technical requirements, and challenges of running a cyber cafe. Here's a brief analysis:

1. Functional Requirements

- User Management: System for user registration, login/logout, and session tracking.
- Billing System: Automatic calculation of charges based on usage time and additional services.
- Resource Allocation: Real-time system availability and assignment tracking.
- Monitoring: Activity logging for compliance and security.
- Reports: Analytics on usage trends and financial summaries.

2. Non-Functional Requirements

- Usability: Intuitive interface for staff and customers.
- Scalability: Ability to handle increased users or devices.
- Security: Secure user data and prevent unauthorized access.
- Reliability: Ensure minimal downtime and robust performance.

4. Key Considerations

- Integration with printers, scanners, and other peripherals.
- Compatibility with various operating systems.
- Regular updates for security and feature enhancements.

Conclusion :

The analysis highlights the need for a secure, user-friendly, and scalable system that simplifies operations, optimizes resources, and enhances customer experience while adhering to legal regulations.

D. Ideate

Ideation for Designing a Cyber Cafe Management System :

The ideation phase focuses on conceptualizing features, user flows, and innovative solutions for a Cyber Cafe Management System to ensure efficiency, ease of use, and security.

Core Features :

1. User Management :

- Unique user IDs for secure login and session tracking.
- Guest and member accounts with different access privileges.
- Option for prepaid or postpaid usage.

2. Billing and Payments :

- Real-time billing based on session duration and additional services (e.g., printing).
- Integration with multiple payment methods (cash, card, digital wallets).
- Discounts or packages for regular users or membership plans.

3. Resource Monitoring :

- Live dashboard displaying system availability and usage.
- Alerts for idle systems to maximize resource utilization.

E.Build

Building Steps :

Step 1: Initialize System

- Create a menu-driven interface:
- Register User
- Start Session
- End Session
- Generate Bill
- Exit

Step 2: User Registration

- Take user input and save it in a file.

Step 3: Calculate Bill

Read session duration from file and compute the bill.

4. Complete Program Structure

- Make a simplified version of how the program structure would look.

5. Test and Debug

- Test each module (user registration, session tracking, billing).
- Handle edge cases like invalid input or session overlaps.

➤ Conclusion :

Building a Cyber Cafe Management System in C involves structuring the code into modular functions and using file handling to persist user and session data. This approach ensures simplicity, maintainability, and efficient system management.

F. TEST

Key Aspects Tested -

1.Functionality

- Verified that user registration, session tracking, billing, and reporting modules work accurately.
- Ensured proper file handling for saving and retrieving user and session data.

2.Usability

- Tested the menu-driven interface for ease of navigation and user-friendliness.

3.Performance

- Checked the system's ability to handle multiple user sessions without data conflicts or performance lags.

4.Accuracy

- Confirmed accurate billing calculations based on session duration and rates.
- Verified the consistency of user and session logs.

G.Implement

➤ Software Requirement

- For C: Code::Blocks, Dev-C++, Visual Studio Code.
- ❖ Programming Language:
 - C: For basic system development.
 - Alternatively: Python, Java, or PHP for more advanced systems with GUI or web support.

➤ Hardware Requirement

Hardware Requirements for a Cyber Cafe Management System (C Program). The hardware requirements for implementing a Cyber Cafe Management System developed in C are minimal, given the program's text-based nature. Below is a categorized breakdown of the essential hardware components:

Client Machines (User Systems)

- Processor: At least Intel Core **i3** or equivalent (dual-core or better).
- RAM: **4 GB** minimum (to run the operating system and essential software smoothly).
- Storage: **250 GB HDD** or **SSD** (for saving temporary user data or application files).
- Display: Standard 15-20 inch monitor.
- Input/Output Devices: Keyboard, mouse, headphones, and webcams (optional).
- Network Interface: Ethernet port or Wi-Fi adapter for internet connectivity.

➤ **Programming Approach**

Programming Approach for Designing a Cyber Cafe Management System.

Designing a Cyber Cafe Management System in C involves a modular, structured, and user-friendly programming approach. Below is a step-by-step explanation of the approach:

❖ **Choose the Programming Model**

- **Structured Programming:** Use functions and modular code for clarity.
- **File Handling:** To persistently store user and session data.
- **Console Interface:** A simple, text-based menu for navigation.
 1. Display a menu with options like:
 2. Register User
 3. Start Session
 4. End Session
 5. Generate Bill
 6. Exit

Conclusion :

The programming approach for a Cyber Cafe Management System involves breaking the system into modules, using file handling for persistence, and creating a simple, menu-driven interface. This ensures clarity, maintainability, and functionality, providing a reliable solution for managing cyber cafe.

H. Links

- 1.Upload Video Link Here
- 2.Upload Blog Link here
3. Upload Project Link here (Classroom Link and Github link)

I. Reference

Ex.

[1] I. Thompson, “Women and feminism in technical communication,” *J. Bus. Tech. Commun.*, vol. 13, no. 2, pp.154–178, 1999.

[2] Online Links

[3] video links