Presentation by:-

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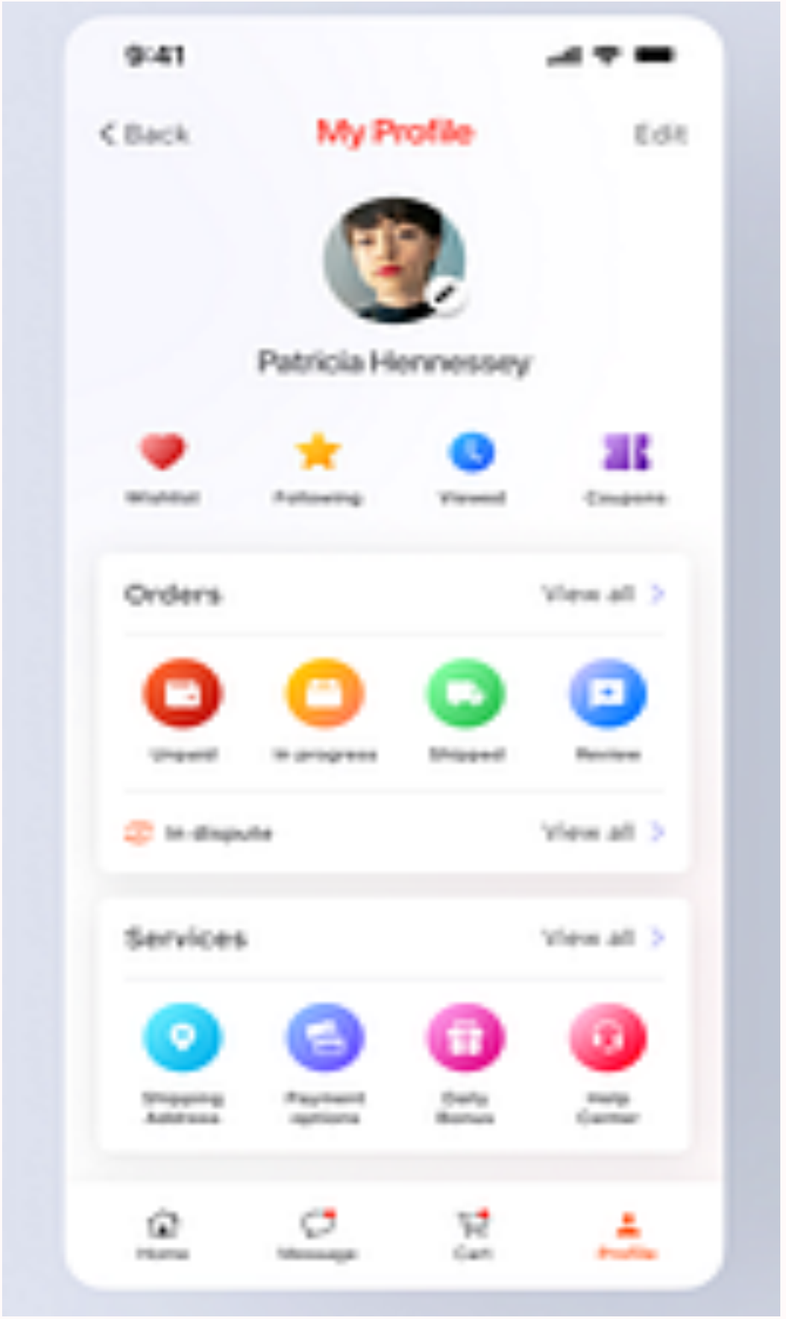
System Analysis and Design

System Analysis and Design is a process used to examine, design, and implement information systems to meet organizational needs effectively and efficiently. It focuses on creating systems that solve problems, improve workflows, and support decision-making in various business contexts.



1 Improving System Efficiency:

SAD aims to identify weaknesses or inefficiencies in current processes and design solutions to enhance productivity.

2 Meeting User Requirements

A fundamental goal is to understand what users need and expect from a system, ensuring that it is both functional and user-friendly.

3 Supporting Decision-Making:

Systems are often designed to provide data and analytics to help organizations make informed business decisions.

4 System Design:

This phase outlines data structures, algorithms, interface design, and data management approaches, ensuring the system is coherent and

Summary of Findings of System Analysis and Design

System Analysis and Design (SAD) involves studying systems in organizations to understand and model their workflows, data processing, and user requirements, with the goal of creating a new system or improving an existing one. It’s essential in IT projects as it ensures that the developed system meets user needs and operates efficiently.

Requirement Gathering and Analysis:

Identify user requirements through interviews, surveys, and analysis of existing systems.

Feasibility Study

Evaluate whether the proposed system is achievable, considering technical, economic, legal, and operational factors.

System Design

Defining the system architecture, data flow, and module relationships

How the Topic Applies to Weekly Topic

System Analysis and Design (SAD) is integrated into weekly topics by progressively building a comprehensive understanding of how to create effective information systems from start to finish. Beginning with foundational concepts in system development and the SDLC, each week focuses on a distinct phase: gathering and analyzing requirements, assessing feasibility, and utilizing modeling techniques to visualize processes. This is followed by high-level and detailed design of system components, leading into development, testing, and quality assurance.

System analysis and design for Computer Science

System Analysis and Design (SAD) is a critical methodology used to create reliable, efficient, and scalable software systems. SAD in this field involves breaking down complex software or hardware systems into manageable parts and designing solutions that meet specific requirements. It is central to software engineering, data management, artificial intelligence, and network design, among other areas in computer science..

- Requirement Analysis
- Software and Hardware Design
- System Modeling

System Analysis and Design to Christian Worldview

System Analysis and Design can be applied within a Christian worldwide context to build and maintain information systems that enhance communication, service and outreach in ministries, churches, and faith-based organizations globally. In this setting, SAD focuses on creating systems that align with Christian values, foster community, and support missions and outreach activities.

Requirement Analysis with a Ministry Focus:

System analysis starts with understanding the unique needs of a church or ministry, such as sermon broadcasting, secure donation processing, member communication, event organization, and outreach initiatives. SAD ensures systems meet these needs with integrity, accessibility, and inclusivity.

Modeling and Structuring Faith-Based Services:

Systems can be designed to facilitate various services like prayer requests, Bible study resources, membership management, and pastoral communication. Modeling tools like flowcharts or process diagrams help visualize these services, supporting effective design and coordination for faith-based applications..

System Analysis and Design Future Impact

The future impact of System analysis and design will be substantial as technology continues to evolve, shaping the way systems are conceived, developed, and maintained across industries. SAD will increasingly incorporate emerging technologies such as artificial intelligence, big data analytics, cloud computing, and the Internet of Things (IoT), enhancing the precision, scalability, and efficiency of systems.

- Automation of Analysis and Design Processes
- User-Centric Design and Personalization
- Cloud-Based and Distributed Systems

References

- Journals like the *Journal of Systems and Software* and the *International Journal of Information Systems* often publish peer-reviewed articles related to SAD methodologies and case studies.

- **Systems Analysis and Design by Alan Dennis, Barbara Haley Wixom, and David Tegarden**: This book offers a thorough overview of the systems analysis and design process, covering both traditional and agile methodologies.

- **Software Engineering: A Practitioner's Approach" by Roger S. Pressman and Bruce R. Maxim**: While focusing on software engineering as a whole, this book covers SAD as part of the software development lifecycle.