

**Department of Computer
Engineering**

**Academic Term: First Term
2023-24**

**Class: T.E /Computer Sem – V / Software
Engineering**

Practical No:	5
Title:	Data flow Analysis of the Project
Date of Performance:	
Roll No:	9572
Team Members:	Sanika Rozario

Rubrics for Evaluation:

Sr. No	Performance Indicator	Excellent	Good	Below Average	Total Score
1	On time Completion & Submission (01)	01 (On Time)	NA	00 (Not on Time)	
2	Theory Understanding(02)	02(Correct)	NA	01 (Tried)	
3	Content Quality (03)	03(All used)	02 (Partial)	01 (rarely followed)	

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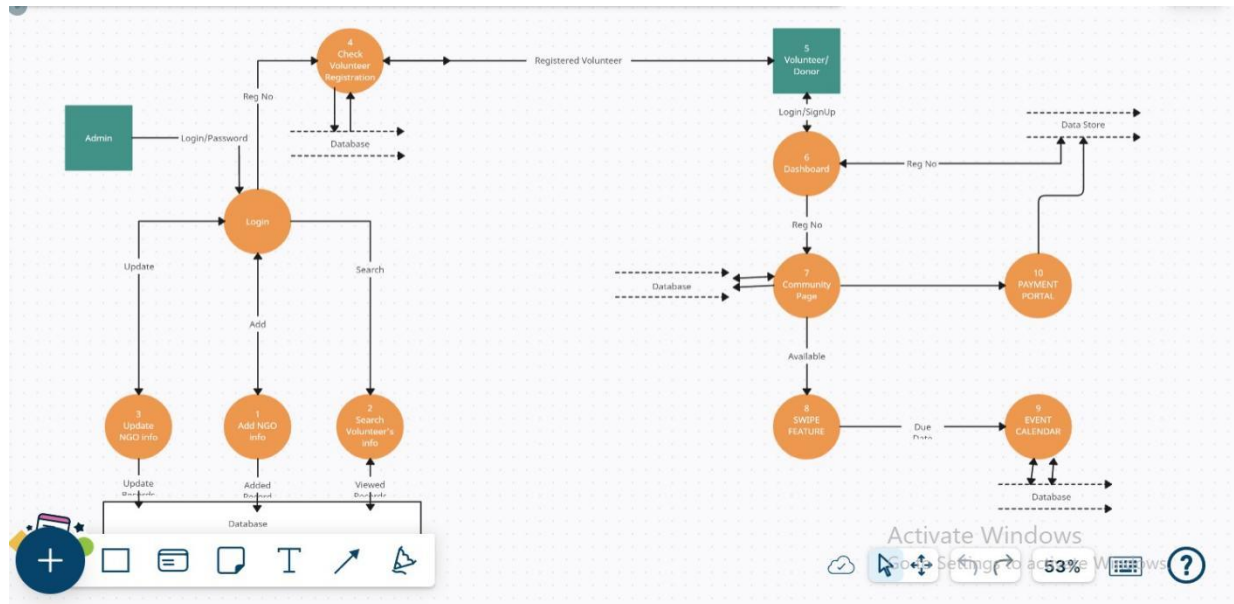
4	Post Lab Questions (04)	04(done well)	3 (Partially Correct)	2(submitted)	
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SANIKA ROZARIO 9572
EXP-5
DATA FLOW DIAGRAM



Explanation:

For Volunteers:

1. Dashboard:

A dashboard for an NGO application provides a centralised platform for managing and monitoring various aspects of the organisation's operations, including donor and volunteer engagement, project progress, and financial transparency, enhancing efficiency and accountability.

2. Community page:

The community page on the NGOFinder app allows volunteers to post comments, fostering engagement and interaction among users. This feature helps increase connections among volunteers by facilitating discussions and sharing information, ultimately strengthening the sense of community and collaboration within the platform.

3. swipe feature:

The swipe feature allows users to register for an event directly by simply swiping right on the event listing. This intuitive and user-friendly interface streamlines the registration process, making it quick and effortless for users to express their interest and participate in events.

4. Event Calendar:

The event calendar in the NGO Finder app is a visual tool that displays upcoming volunteer opportunities and activities in a structured calendar format. Volunteers can easily view and plan their involvement by checking event dates, details, and availability, streamlining their engagement with NGOs and enhancing their commitment to social causes.

5. Payment Portal:

A payment portal for donors is an online platform that allows individuals and organisations to make financial contributions to NGOs (Non-Governmental Organisations) easily and securely. An NGO finder helps users discover and connect with specific NGOs or charitable causes they want to support by providing information and access to their donation portals.

DATA STORES

NGO DETAILS:

Details about NGOS and their events are stored here

VOLUNTEER DETAILS:

Details about the volunteers and the events they have signed up for are stored here.

PAYMENT PORTAL:

Details about the payment done by Donors

PROCESS

- **Maintain Volunteer Information:** A process where volunteers can add, update, or modify their personal information within the system.
- **Browse Events:** This process allows volunteers to view available NGO events, pulling data from the "Available NGO & Events" data store.
- **Perform Feedback/Reviews:** Volunteers can provide feedback or reviews after participating in an NGO event, which is stored for reference or analysis.
- **Select NGO and Pay:** A process where volunteers can choose an NGO event, make a payment (handled externally or through the system), and confirm their participation.

POSTLAB

a) Benefits of Using Data Flow Diagrams (DFD)

- **Clarity and Understanding:** DFDs provide a clear and visual representation of how data flows within a system. This helps stakeholders, including developers and non-technical personnel, understand the system's data processing.
- **Identification of Components:** DFDs help identify the main components or modules of a system and how they interact with each other. This aids in breaking down complex systems into manageable parts.
- **Data Dependency Analysis:** DFDs allow for the analysis of data dependencies, showing which components rely on specific data inputs and how data transformations occur between them.
- **Identification of Data Sources and Sinks:** DFDs help identify the sources of data (inputs) and where data is consumed or stored (sinks). This is crucial for understanding data flow and storage.
- **Detecting Anomalies:** DFDs can reveal anomalies or irregularities in data flow, helping in the early detection of potential issues or vulnerabilities.

b) Data Flow Analysis for Identifying Potential Issues

- Analyse data flow paths: Examine the DFD to identify areas where data flows through multiple components or undergoes resource-intensive processes.
- Evaluate data processing times: Estimate the time it takes for data to traverse through critical paths and compare it to acceptable response times.
- Identify resource constraints: Determine if there are limitations in terms of processing power, memory, or network bandwidth that could lead to bottlenecks.
- Examine data access points: Identify where sensitive data enters and exits the system (e.g., user inputs, API endpoints).
- Assess data encryption: Ensure that data is encrypted when in transit and at rest to prevent unauthorised access.
- Evaluate authentication and authorization mechanisms: Check if the system enforces proper user authentication and access control to protect against unauthorised data access.
- Look for data leakage points: Identify areas where data might unintentionally leak or be exposed to unauthorised parties.

c) Proposed Improvements to Enhance Efficiency and Reduce Risks

- Optimise Data Processing: Identify and optimise resource-intensive data processing components to reduce bottlenecks. This may involve parallel processing, caching, or load balancing.
- Enhance Security: Implement stronger encryption methods to protect sensitive data.
- Strengthen authentication and authorization mechanisms to ensure data security.
- Conduct regular security audits and penetration testing to identify and address vulnerabilities.
- Data Flow Redundancy: Eliminate unnecessary data flows to reduce complexity and the risk of data leakage.
- Monitoring and Alerting: Implement real-time monitoring and alerting systems to detect unusual data flows or security breaches promptly.
- Backup and Recovery: Develop robust data backup and recovery mechanisms to ensure data integrity and availability in case of failures or security incidents.
- Documentation and Training: Ensure that system documentation is up-to-date and that personnel are adequately trained on security best practices and data handling procedures.
- Regular Audits: Conduct periodic audits and assessments of the system's data flow and security measures to proactively identify and address potential issues.