Project design phase-II
Technology Stack (Architecture & Stack)

Date : 01 november 2025

Team ID : NM2025TMID01129

Project Name : Calculating Family Expenses using Service Now
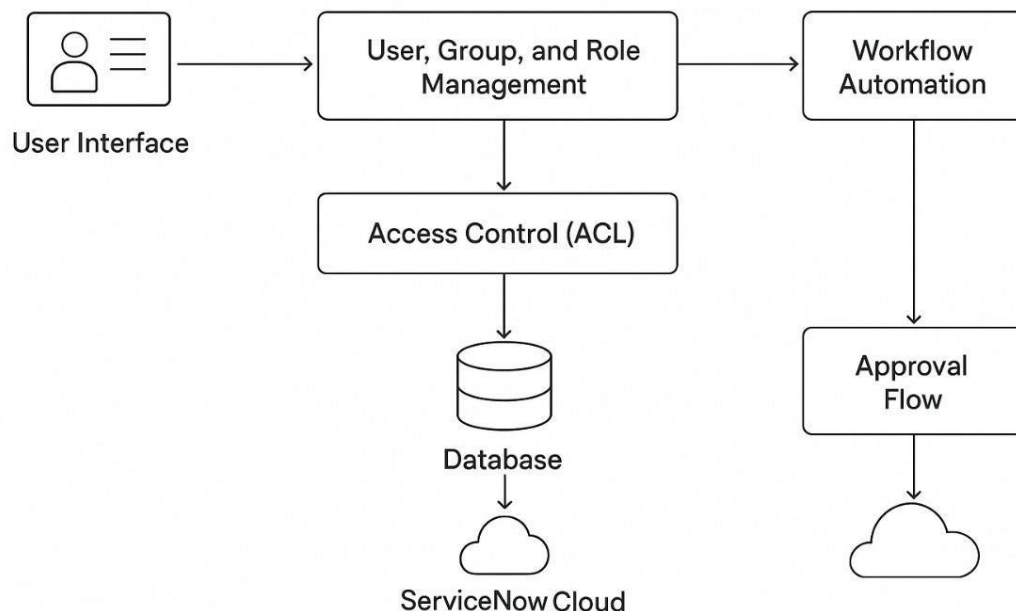
Maximum Marks: 4marks

Technical Architecture:

The deliverable includes the **architectural diagram** (refer to *Figure 1: Architecture and data flow of the ServiceNow-based Family Expense Calculation System*) and the details provided in **Table 1** and **Table 2** below.

Example: Calculating Family Expenses Using ServiceNow
Reference:
https://developer.servicenow.com/dev.do#!/learn/learningplans/rome/app_store_learnv2_build myfirstapp_rome_creating_application_logic

Optimizing User, Group, and Role Management with Access Control and Workflows

Guidelines:

- Includes all logical processes such as **family member creation, income and expense management**, and **automated financial calculations**.
- Uses **ServiceNow Cloud (SaaS)** infrastructure for hosting and execution.
- Integrates built-in modules like **Business Rules**, **Flow Designer**, and **Reports/Dashboards** — no external APIs required.
- Ensures secure and consistent data management using **custom ServiceNow tables** (Income, Expense, Family Member).
- Enables automation for dynamic calculations and visualized financial summaries.

Table – 1 : Components & Technologies

S.No	Component	Description	Technology
1.	**User Interface**	Family members interact with the system through the ServiceNow web dashboard to input and review financial data.	ServiceNow Web UI
2.	**Application Logic – 1**	Handles creation and management of family members, income, and expense entries.	ServiceNow Custom Tables
3.	**Application Logic – 2**	Automates total income, expense, and balance calculations whenever new records are added or updated.	ServiceNow Business Rules
4.	**Application Logic – 3**	Executes automated updates, balance recalculations, and alerts when expense thresholds are exceeded.	ServiceNow Flow Designer
5.	**Reporting and Dashboard Logic**	Generates graphical reports and dashboards to visualize spending patterns and monthly summaries.	ServiceNow Reports & Dashboards
6.	**Database**	Stores income, expense, and member data within ServiceNow's built-in database tables.	ServiceNow CMDB / Custom Tables
7.	**Cloud Infrastructure**	Hosted and maintained within the ServiceNow SaaS environment, ensuring accessibility and scalability.	ServiceNow Cloud Platform

8.	**File Storage**	Minimal use; logs and configuration files stored internally	ServiceNow System Logs

Table – 2 : Application Characteristics

S.No	Characteristics	Description	Technology
1.	**Open-Source Frameworks**	Not applicable (ServiceNow is a proprietary SaaS platform).	—
2.	**Security Implementations**	Controlled access via scoped applications and user-based roles; data remains secure in the ServiceNow instance.	Role-Based Access, Scoped Applications
3.	**Scalable Architecture**	ServiceNow's SaaS model allows expansion to multiple families or users without performance degradation.	ServiceNow Cloud Architecture
4.	**Availability**	Highly available with continuous uptime through load-balanced ServiceNow instances.	ServiceNow Cloud Hosting
5.	**Performance**	Optimized using background scripts, asynchronous updates, and indexed fields for fast calculations.	Business Rules, Flow Designer
6.	**Reliability**	Automated workflows ensure accurate, consistent, and real-time financial computations.	ServiceNow Flow Designer, Business Rules