MicroSolutions | Introduction to Software Engineering | October 03, 2019

Task 1: The 7 participants' team:

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Task 2: Problem/System selected:
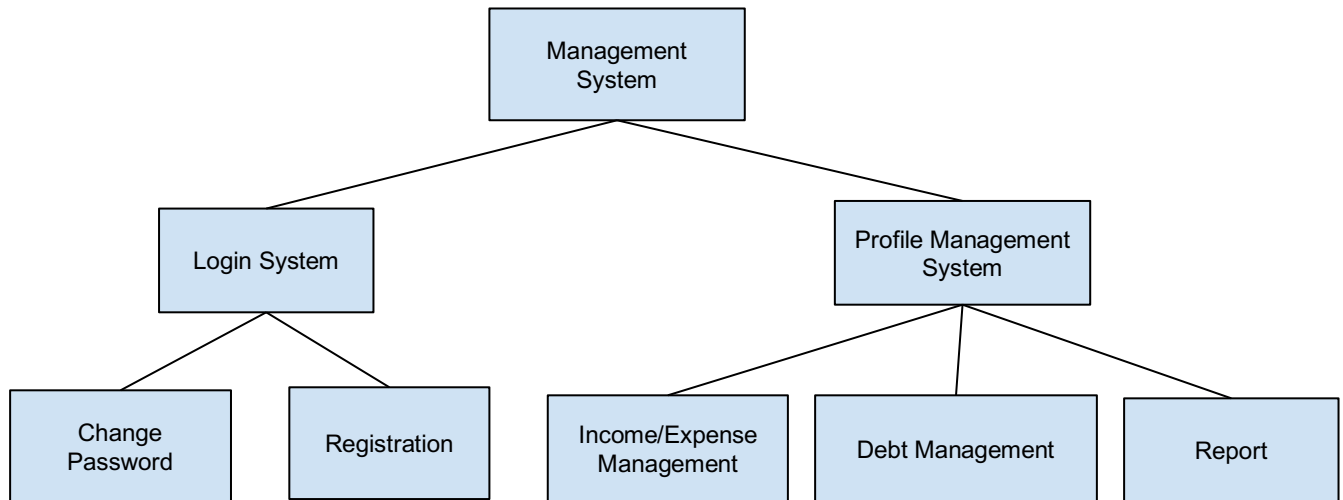
- Mobile App for Expense Management System

Task 3: Brief Description of the team project system

Budgeting and keeping track of financial assets is a task the majority of people from all walks of life face every day, each individual using tools available to them. MicroSolutions will be a self-regulatory financial management application for mobile devices. The application will focus on individuals' financial needs to provide a simple and effective assistant for budgeting needs. Further, the aim of the application is to provide an accessible software with a low barrier of entry to tackle the user's financial needs from daily, to life-long goals. As one's financial information is inherently sensitive information, the application will emphasize on security and privacy in all facets.

The key feature components include:
- Monthly budgeting
- Expense tracking
- Savings goals
- Debt management, with room to add and remove as time permits
- Maintain security for all expenses
- Maintain control and keep track of all devices in the system
- Prevent billing errors
- Visuals (i.e. graphs, images, etc.) for management (Itemization of where the Money was spent, amounts over/under budget, Money saved, etc.)
- Scan receipts and bills (depending on time and resource constraints)
- At the end of each month, Capability for the users to reset or delete items revenues and expenditures, starting the cycle of the new month
- Loans tracking (loans are cleared only after payment is made)

- A 15-day trial period; after which, the users who decide to continue using the app will need to pay a fee via forms such as call center or credit card order

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                        │   Management    │
                        │     System      │
                        └─────────────────┘
                          /              \
              ┌──────────────┐      ┌──────────────────┐
              │ Login System │      │Profile Management│
              │              │      │     System       │
              └──────────────┘      └──────────────────┘
               /          \           /      |       \
    ┌──────────┐  ┌────────────┐ ┌──────────┐┌──────────┐┌────────┐
    │  Change  │  │Registration│ │ Income/  ││   Debt   ││ Report │
    │ Password │  │            │ │ Expense  ││Management││        │
    └──────────┘  └────────────┘ │Management│└──────────┘└────────┘
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System Communication
- Income and Expense Management
- Debt Management
- Profile Management
- Report

User Interface
- Simple and user-friendly interface

Hardware interface
- Mouse, Keyboard and Monitor

Software interface
- Computers need to have this software installed
  - SQL server 2008
  - Visual Studio 2018
- Software required to build the application:
  - Java
    - An object-oriented language used to develop the main functionalities and usability of the software

  - MySQL
    - A relational database system that allows programmers to use a query language SQL to insert, update and delete data in a database.
  - Android SDK
    - The Android SDK (software development kit) provides tools for developing software for the Android environment
  - Git

- ■ A repository software to allow concurrent developers to develop and update the software as needed
    - ○ XML
        - ■ Android Studio allows a programmer to use XML files and other android specific XML files to create the layout of the mobile application or the "look".
- ● Tools:
    - ○ Change language
    - ○ Currency converter
    - ○ Change the classifications arbitrary

Task 4: Glossary of Terms:

Balance: Current available funds the user has.

Budget: an estimate of income and expenditure for a set period of time

Expense: Anything which has a net negative impact on the user's balance.

Income: In general, a monthly approximate for incoming funds to be considered with regards to budgeting.

Login/out: an act of logging in/out to a computer, database, or system

Necessities: A broad term to encompass necessary expenses for daily and monthly life. This includes things like food and rent if applicable.

Password: a string of characters that allows access to computer system or service

Savings: the proportion of a person's, company's or institution's income that is not spent on current consumption

Security: the extent to which a computer system is protected from data corruption, destruction, interception, loss, or unauthorized access

Software Maintenance: the modification of a software product after delivery to correct faults, to improve performance or other attributes