Lab Assignment

Advance Software Engineering

Tools used and their alternatives

1.Introduction

Project: Banking System

The tools and software's used in the development of this project were

1.1 Visual Studio

The software was developed using C# (Programming Language) in the Visual Studio 2015 IDE.

1.2 Wamp Server (MySQL)

This project uses MySQL for storing the data (Customer record, Account information etc.). For creation of the MySQL database Wamp Server was used.

1.3 Visual Paradigm

The design phase included making use case and UML diagrams which were created using Visual Paradigm.

1.4 Microsoft Word

The Requirement document and all other documents were written in Microsoft Word.

2.Tools used, their Alternatives and current Industry Standard

2..1Visual Studio

C# was used as a programming language for the development of this software i.e. 'Banking System' for various reasons. The main reason was the Ease of Development and rich variety of libraries C# provides.

For coding in C#, Visual Studio IDE was used. Visual Studio and C#, both were developed by Microsoft. Visual Studio provides support for multiple languages as well as cross platform development. It also supports large collection of extensions which eases the development process.

2.1.1Alternative

Developers around the globe code in variety of IDEs available in the market such as

- NetBeans
- IntelliJ Idea
- CodeBlocks
- Eclipse

2.1.2 Advantage of using Visual Studio over others

- There are numerous plugins available for Visual Studio - both produced by Microsoft and by third-parties. This allows for significant customization of the implementation to meet your specific needs and desires.
- Visual Studio simplifies managing builds and dependencies compared to other IDEs such as Eclipse.
- Visual Studio supports many advanced "design-time" features such as Intellisense, design-time error and warning highlighting for many errors, and color coding of source files.

2.2 Wamp Server

Wamp server is a web development software for windows operating system which supports multiple features such as Apache web server, OpenSSL for SSL support, PHP programming language but also MySQL database.

2.2.1 Alternative

For creating and managing MySQL database, some of the alternatives to Wamp server are

- MySQL Oracle
- MariaDB
- XtraDB
- Percona
- LAMP
- Navicat

2.2.2 Advantage of Wamp Server over others

- Wamp not only allow SQL database creation but also has other features such as PHP server, Apache etc.
- User Friendly
- Tons of features including an intelligent debugger

2.3 Visual Paradigm

Visual Paradigm is a UML design tool and UML CASE tool designed to aid software development. It supports software development teams in requirements capturing, software planning (use case analysis), code engineering, class modeling, data modeling, etc.

UML class diagram, Sequence Diagram, Use case diagram of this project was created using Visual Paradigm. It also allows us to create wide range of diagrams used in the development process such as Entity-Relationship diagram for relational database etc. in one single software.

2.3.1 Alternatives

Visual paradigm offers variety of features. But for a specific task or diagram such as use case or sequence diagram there are multiple online utilities as well as desktop software's available. Some of them are

- Lucid Chart
- Draw.io
- Día
- Edraw Max
- Plant UML

2.3.2 Advantage of using Visual Paradigm

- The biggest feature of Visual Paradigm is IDE integration.
  Visual Paradigm is not only a standalone application, but also integrated to the major Integrated Development Environments (IDEs), including Eclipse, NetBeans, IntelliJ IDEA and Visual Studio.
- Its one of a kind utility. No other solution exist which provides this many features/diagrams support in a single package.
- Easy to use/User Friendly

2.4 Microsoft Word

Microsoft Word is a word processor developed by Microsoft. It is industry standard and provides tons and tons of features regarding document creation and text formatting.
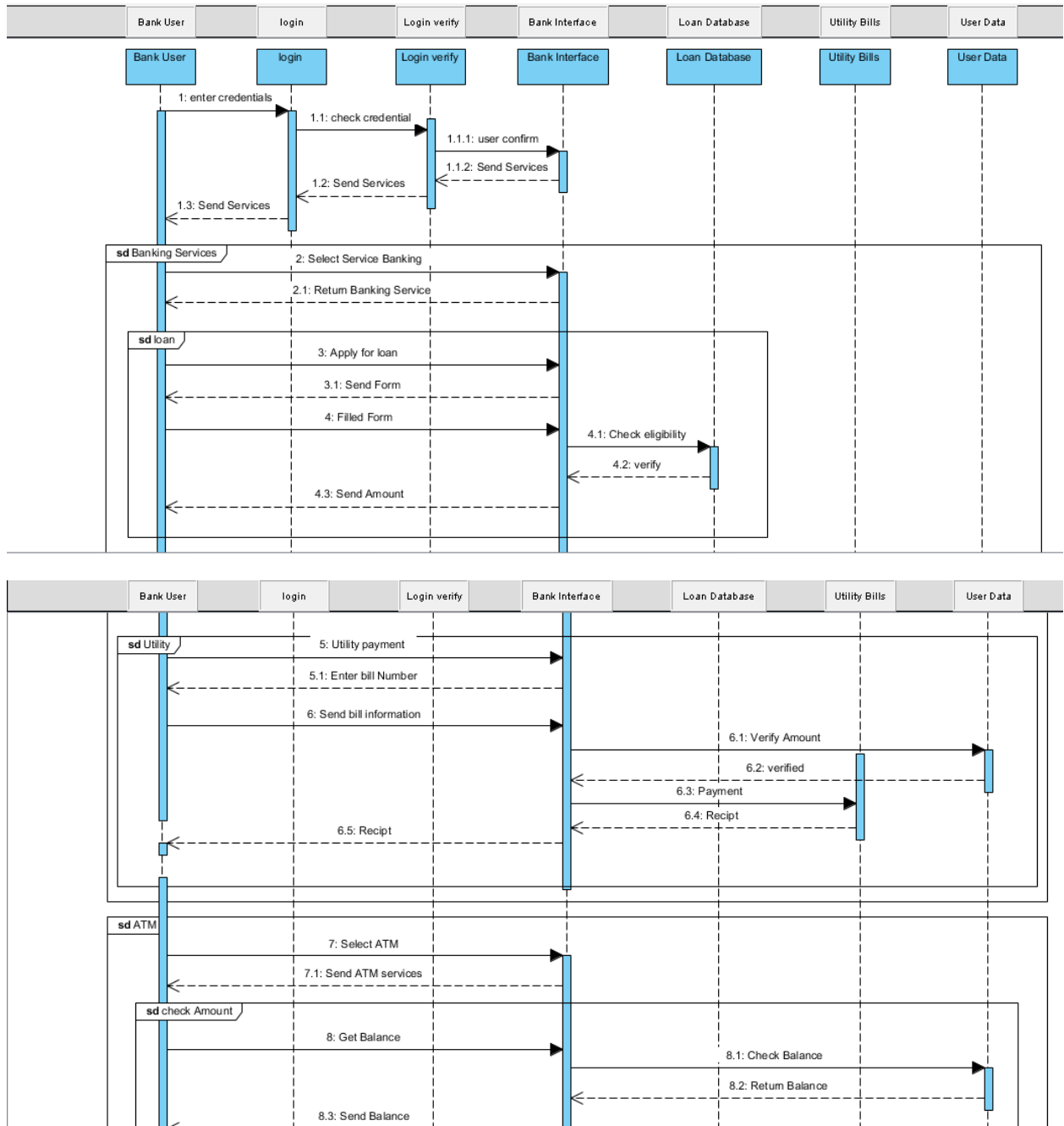
2.4.1 Alternatives

- Google Docs
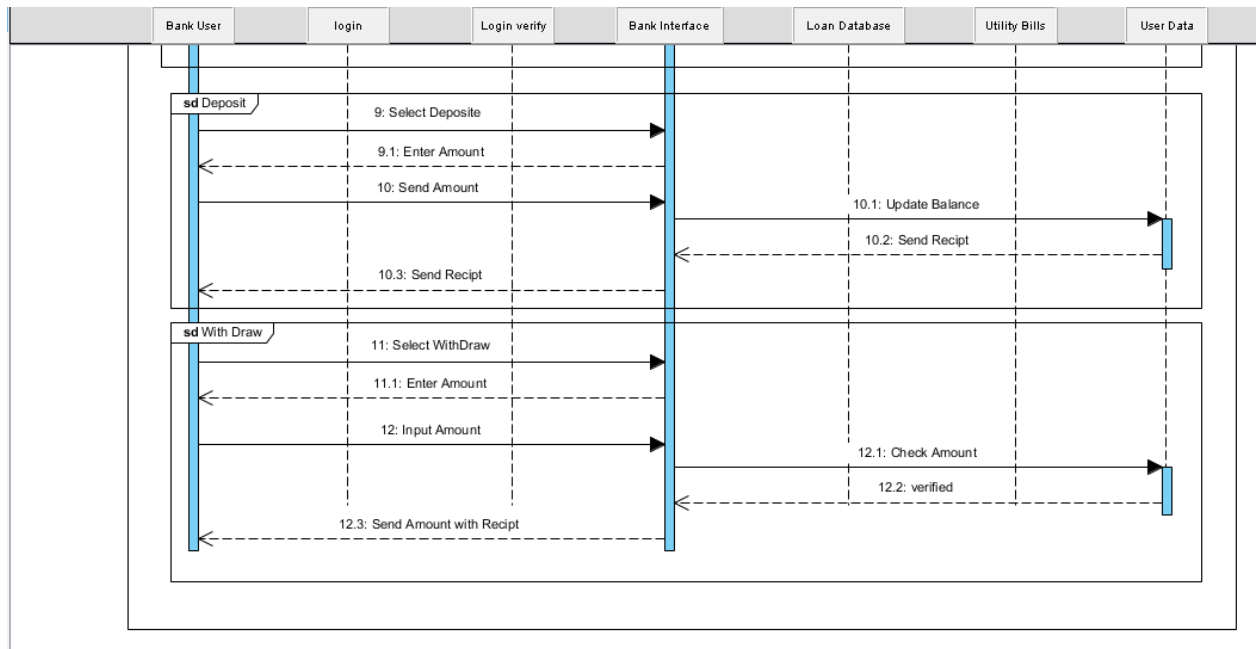- Office online
- OpenOffice
- AbiWord
- Jarte

2.4.2 Advantages

- Familiar and Reliable
- Tons of Features (text formatting, themes, borders etc.)
- Supports almost all document extensions (doc, docx, pdf etc.)

3. UML DIAGRAMS:

3.1 Sequence Diagram

3.2 Activity Diagram