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| File Management System for Windows 8 Phone |
| Synopsis |
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# Introduction& OBJECTIVE

## Introduction

We all know that Windows Phone 8 is one of the most popular smart phones Operating System in the world. When I started using a Windows Phone I was amazed to see its usability, features and looks & feels. Still, nothing is perfect in this world. After switching from Symbian to Windows, I felt faced problems on some basic features; one of them is a File Manager.

It was really easy to access phone memory and Memory card (micro SD) memory in Symbian but windows Phone does not provide such feature. I spoke to other windows phone users on social networking sites and understood that they are facing same problem as well.

So, it was not hard for me to decide my project topic, I chose to develop an application which would let a user access phone memory and SD card memory. It obviously is going to be a very useful app for all the Windows Phone users in the world.

## Objective

Windows Phone File Manager is a mobile application that allows a windows phone user to do following things:

1. Browse SD card.
2. Browse phone memory.
3. Browse files by category, like .txt files, .mp3 files etc.
4. Archived file reader and extractor.
5. Upload data to cloud storage (skydrive).
6. Synchronization with cloud storage.
7. Password protection of selected files and the entire app.
8. PDF Reader.
9. Sorting/Searhing based on file format.
10. Files sharing through Bluetooth/ wifi/ data cable.

The file manager comes with a desktop application as well, that allows user to,

1. Synchronization between phone memory/ SD card memory and the computer.
2. Browse phone memory files and memory card files from the computer.
3. Synchronization between cloud storage(Skydrive, Google drive, dropbox) and back up of SD card/ phone memory files.

# PROJECT CATEGORY

This software will follow Object Oriented Programming Paradigm and use below mentioned areas:

OOP Language: C#

RDBMS: SQLite.

Networking:

Applications: Mobile Systems

# Hardware and Software Specification

## For Mobile:

### Hardware Requirement

* **Phone Memory/SD Card Memory :** 300 MB of available hard disk space
* **RAM :** 128 MB or higher
* **Processor :** 484 MHz or faster

### Software Requirement

* Windows 08

## For Desktop

### Hardware Requirement

* Disk Space: 50 Mb of available disk space.
* RAM: 256 MB
* Processor: 1 GHz dual core

### Software Requirement

* Windows XP, Windows 07 Operating System.
* Microsoft .NET framework 3.5.

# REQUIREMENTS AND ANALYSIS

## Problem Definition

### Existing System

The existing system is traditional paper books and ledger system where several records are stored and to track other details about the student and teacher. The flow diagram of how a student takes admission in Schools is shown below:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| |  | | --- | | Student must take a registration form from the school with a small amount as a cost of registration form. |  |  | | --- | | Fill up the form by the student and submit to the School. |  |  | | --- | | According to the submitted registration form, an interview will be arranged. |  |  | | --- | | If the student passed the interview then he/she can take admission in the school with a admission fees. |  |  | | --- | | He/ She will get study materials from the School. |  |  | | --- | | He / She must pay the overall Tuition fees over the Year. |  |  | | --- | | He / She can join the Class. | |

The flow diagram of how a Student is promoted to next class according to his / her Results is shown below:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| |  | | --- | | Checks the attendance of the Student whether he/she has 75% attendance. |  |  | | --- | | If he/she has , an admit card will be issued |  |  | | --- | | He / She can give the exam. |  |  | | --- | | Records are stored in the system. |  |  | | --- | | Checks the getting numbers in each subject whether it is more than 40%. |  |  | | --- | | If yes, then He / She will be promoted to the next class. |  |  | | --- | | Mark sheet given. | |

### Documents maintained

* **Admission Register**: Form Number, Student Name, Address with Contact Number, Mother’s Name, Father’s Name, Parent’s Income per annum, Parent’s qualification, Initial amount for registration, Form Submission Date.
* **Enrolment Register:** Form Number, Student Name,Address with Contact Number, Parent’s name, Deposit Amount, Amount Received Date, Student Assigned to (Class).
* **Examination Register:** Enrolment Number, Student Name, Address with Contact Number, Attendance, Class Performance, Deposit Amount check, Received Amount date.
* **Grade card generation:** Enrolment Number, Student name, Address with Contact Number, Getting marks, Grand total, Percentage Marks, Grade given, Position given.

### Work To Be Done

We will incorporate the above mentioned workflow of aSchool Management System in an automatic computerized way.

## Requirements Specification

### Functional Requirements

#### View and Enter new Student and Employee information

**Introduction**

The details of a new student are stored into a student profile. Only School administration department can enter that details of new student but and teachers can only updated the existing student status. Details of employee are also kept into individual employee profile and it will also be updated by School Administration System.

**Input**

Relevant student and employee data like name, address, contact no., applying for which class.

**Processing**

Employee will enter data in SMS and create a new Student enrolment no, as well as a new code number for Employee.

**Output**

SMS will generate Enrolment no. for Student and Code no. for Employee .Details can be viewed later on whenever required.

#### View and Enter new timetable information

**Introduction**

Employee can view the time table and can also update the timetable information.

**Input**

Employee number, department number andWeek range

**Processing**

Employee number and department number must be unique, and when entering timetable of any employee or teacher both values must be valid references. Week range must be between 1to 52.

**Output**

Teacher and Student both can see the time table.

#### Security

**Introduction**

Only the high level members of the School and Network manager will have access to the system for securing their important data from others.

**Input**

System username and password

**Processing**

The network operating system in the department will be used to enforce security.Another security level should also be incorporated to make the system more secure.

**Output**

All data are secured and that can be used in future.

#### Changing Password and Username

**Introduction**

Change existing username and password

**Input**

New username and password

**Processing**

Old username and password will be replaced by user provided new username and password after authenticating.

**Output**

Password and Username can be changed according to the Employee requirement whenever they want to change for better security of the System.

#### Mail Notification

**Introduction**

If holiday is declared suddenly, all students, teachers and employees are informed by sending them a mail.

**Input**

Student and Teacher’s name and email id.

**Processing**

Employee will enter the name, email id and reason of holidays in the SMS and it will generate a message.

**Output**

Employee and Students get a message from SMS.

#### Exam Grade Details

**Introduction**

Data sheets are prepared for individual class. And each datasheet is given via email to the student of the corresponding class.

**Input**

Student name, marks in individual subject, attendance, class performance**.**

**Processing**

Grade card can be generated for individual students. Exam administrators would need to be able to view, update, delete, print and add grade details.

**Output**

A printed Grade card can be given to the student as well as anemail can be received by the student with Grade card.

#### Fees Details

**Introduction**

Fees details of all Students are kept and they are reminded after every 4 days after last date. Late Fee is also charged after last date.

**Input**

Student name, enrolment no, remaining fees, last date of deposit amount.

**Processing**

SMS automatically generates a message and send it to the student email id.

**Output**

Students are reminded after every 4 days after last date.

### Technical specification

#### For mobile app

* **Front End/ GUI Tools:** XAML (Extensible Application Markup Language)
* **IDE:** Visual Studio Express 2012 for Windows Phone
* **Framework:** Microsoft .NET 4.0
* **Database:** Sqlite.
* **SDK:** Windows Phone SDK 8.0.
* **Cloud Technology:** SkyDrive

#### For desktop app

* **Front End/ GUI Tools:** Windows Presentation Framework (WPF)
* **IDE:** Visual Studio 2010
* **Framework:** Microsoft .NET 4.0
* **Database:** MySQL
* **Database Tool:** MySQL workbench CE
* **Operating Systems**: Windows XP, Windows 7
* **Cloud Technology**: Google Drive, Dropbox, SkyDrive

## Planning and Scheduling

### Gantt chart



### Tracking Gantt



### Pert chart (Network Diagram)



# Scope of the Solution

## for Mobile App

Following features could be attached to the app in future to make it even more useful and a complete system manager:

1. It could be made as a system hardware tracker that shows processor/RAM status (used and free).
2. Battery remaining and temperature.
3. Synchronization with Google Drive.
4. Synchronization with Drop Box.

## for Desktop App

1. Using phone data for the computer through a USB cable.
2. Mobile OS updating and reinstallation of application/OS.
3. Installation of various apps in mobile from the desktop app through usb cable.

# Analysis

## Context Diagram



## Data Flow Diagram

### Level 0 DFD



### Level 1 DFD









### Level 2 DFD



## E-R Diagram

We will design a RDBMS for School Management System. The entities and their attributes are listed below. Attributes in Bold letter is the unique key.

|  |  |
| --- | --- |
| **Entities** | **Attributes** |
| Student | **Student\_ID**, Student\_DOB, Student\_Name, Student\_Parent\_Name, Student\_Address, Student\_Admission\_Date, Student\_Course\_Name, Student\_Contact |
| Account | **Transaction\_ID**, Transaction\_Amount, Transaction\_Type, Transaction\_Reason,Account\_Balance |
| Admin | **Staff\_ID**, Staff\_Name, Staff\_Permission\_Level, Staff\_Address, Staff\_Admission\_Date, Staff\_Course\_Name, Staff\_Contract\_details, Staff\_Join\_Date, Staff\_Email, Staff\_Role |
| Books | **Book\_ID**, Book\_Name, Book\_Author, Purchase\_Date, Book\_Status, Book\_Description,Purchase\_Amount |
| Faculty | **Faculty\_ID**, Faculty\_Name, Faculty\_Address, Faculty\_Join\_Date, Faculty\_Course\_Under, Faculty\_Contact\_Details, Faculty\_Salary\_Details |
| Course | **Course\_ID**, Course\_Faculty, Course\_Name, Required\_Qualification, Course\_Fees, Course\_Admission\_Date, Students\_Under, Course\_Description |

**Relationship between Entities:**

School Management System has Courses 1 : N

School Management Systemhas Students 1 : N

School Management System has Faculties1 : N

School Management System has Admin 1 : 1

Studenthas Attendance 1 : 1

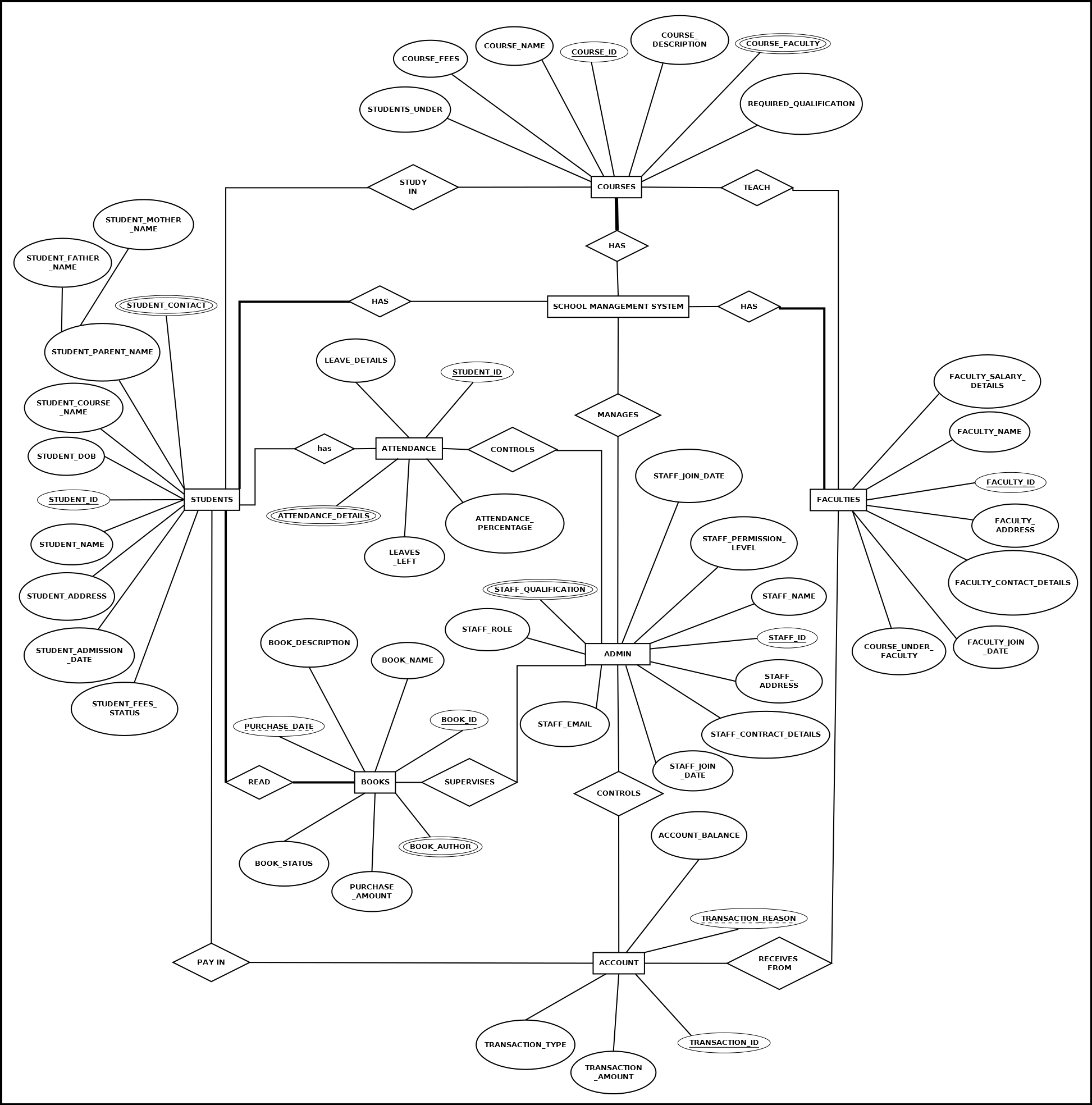
AdminChecksAttendance 1 : 1

StudentsreadsBooks M : N

StudentspaysAccount 1 : 1

AdminControlsAccount 1 : 1

Students Studies in Course N:1



## Class Diagram



# Database & Table Details

The database used for this software is called **smsdb**. A screenshot from the MySQl workbench is given below. It shows the tables and its columns. The first row is the primary key.



# COMPLETE DATA STRUCTURE

## Module Description



School Management System is divided three main modules such as:

1. School Management Server
2. School Management Client
3. School Management Database

### School Management Server

School Management server is a singleton server designed provide services for school management system. It controls various activities required for the school management system. To manage these activities it has several sub modules such as:

1. Admission Management
2. Student Management
3. Faculty Management
4. Course Management
5. Attendance & Leave Management
6. Library Management
7. Accounts Management
8. Administration Management

### School Management Client

School Management System will provide two different clients for the convenience of the user. Desktop client is for doing bulk activities and faster tasks. Web client will allow instant access from anywhere and anytime.

### School Management Database

School Management System will have a unified database for storing all the information. It can be a networked database or a database situated in the server machine.

## Estimation



## Data Structure

|  |
| --- |
| **StudentInfo** |
| publicclassStudentInfo  {  publicstring id { get; set; }  publicstring name { get; set; }  publicstring bloodGroup { get; set; }  publicstring phone { get; set; }  publicstring address { get; set; }  publicDateTime admissionDate { get; set; }  publicDateTime dob { get; set; }  } |

|  |
| --- |
| **CourseInfo** |
| publicclassCourseInfo  {  publicstring id { get; set; }  publicstring eventTitle { get; set; }  publicDateTime eventDoe { get; set; }  publicstring eventVenue { get; set; }  publicstring eventGoal { get; set; }  } |

|  |
| --- |
| **ExpenseInfo** |
| publicclassExpenseInfo  {  publicstring id { get; set; }  publicstring purpose { get; set; }  publicDateTime doe { get; set; }  publicstring expensed\_by { get; set; }  publicdouble amount { get; set; }  } |

|  |
| --- |
| **FundInfo** |
| publicclassFundInfo  {  publicstring id { get; set; }  publicstring wellwisher\_name { get; set; }  publicstring contact { get; set; }  publicDateTime dod { get; set; }  publicstring received\_by { get; set; }  publicdouble amount { get; set; }  } |

|  |
| --- |
| **FacultyInfo** |
| publicclassFacultyInfo  {  publicstring id { get; set; }  publicstring name { get; set; }  publicDateTime doj { get; set; }  publicstring address { get; set; }  publicstringphone { get; set; }  public List<string> qualifications { get; set; }  publicList<string> courses { get; set; }  } |

|  |
| --- |
| **AdmissionInfo** |
| publicclassAdmissionInfo  {  publicstring id { get; set; }  publicstring name { get; set; }  publicstringpurpose { get; set; }  publicint ageLimit { get; set; }  publicstringVenue { get; set; }  publicstringcoordinatorPhone { get; set; }  publicstring admittedAddress { get; set; }  publicDateTime examDate { get; set; }  publicDateTime resultDate { get; set; }  publicList<string> subjects { get; set; }  publicintnumberOfSeats { get; set; }  } |

|  |
| --- |
| **BookInfo** |
| publicclassBookInfo  {  publicstring id { get; set; }  publicDateTime issueDate { get; set; }  publicList<string> author { get; set; }  publicList<string> tag { get; set; }  } |

|  |
| --- |
| **TransactionInfo** |
| publicclassTransactionInfo  {  publicstring id { get; set; }  publicstring name { get; set; }  publicdouble amount { get; set; }  publicstring type { get; set; }  publicstring reason { get; set; }  publicstring receivedFrom { get; set; }  publicstring receivedBy { get; set; }  publicDateTime date { get; set; }  } |

## Implementation Methodology

* Object Oriented Programming methodology will be adopted and c sharp will be used as programming language.
* .NET framework will be used to develop desktop and mobile app.
* User interface development will be done using WPF (Windows Presentation Foundation).
* Relational DBMS MySQL will be used to implement & execute SQL query to database.
* Agile Software Development model will be used while developing this software.

# SECURITY MECHANISM

* For mobile app, password protection will used for the entire app.
* For mobile app, password protection will be used for single items, like a video or an image.
* For desktop pp, password protection will be incorporated so that the phone back up stays protected.

# FUTURE SCOPE AND FURTHER REQUIREMENTS

* The application provides only skydrive cloud storage back up. We could develop Google drive and dropbox cloud storage back up as well.
* It could be really useful if the app could provide a video and image file locker as well.

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