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Інститут прикладного системного аналізу
Кафедра Системного Проектування

Лабораторна робота №2

"Проектування інформаційних систем"

Виконав студенти групи ДА-72

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Перевірив:

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Київ - 2020

Мета роботи: вивчити основні етапи створення передпроектної документації (SRS).

Структура SRS:

Предпроектна документація складається з 4 пунктів:

1-ший пункт представляє з себе введеня і початкові дані про продукт, цілі даного програмного продукту, словник технічних термінів і частину де взагалом описано про усі чатини даного документу.

2-гий пункт має в собі загальний опис системи, функціональні можливості та юзкейси які можуть бути в даній системі.

3-тій пункт має в собі функціональні вимоги для використання програмного продукту: починаючи від пристрою, на якому можна запускати систему, закінчуючи додатковими програмами, без яких функціонування даної системи є неможливим.

4-тий пункт містить в собі таблицю (або інший структурований об'єкт) функціонального тестування, тобто тестування юзкейсів. Дана таблиця має в собі такі колонки: загальна мета тесту, передумови для виконання тесту, необхідні дії для проведення тесту, стан системи після виконування тесту, дії необхідні для повернення системи у стан до тестування та коментарі.

Висновки: В даній лабораторній роботі я вивчити основні етапи створення передпроектної документації (SRS) та написав її для свого об'єкта проектування. Також я виділив різницю між функціональними вимогами програмного продукту (конкретні функції, або обчислення над даними, які система повинна вміти виконувати) і нефункціональними вимогами (якість, безпека системи, та інші). Також були написані приймальні тести для даної системи.

Додаток 1 (SRS)

Software Requirements Specification

Version 0.1

October 21, 2020

Finance Application

Samvelyan Artur

Revision History

Date	Description	Author	Comments
21.10.2020	Version 0.1	Samvelyan A.	

Document Approval

The following Software Requirements Specification has been accepted and approved by the following:

Signature	Printed Name	Title	Date
	Samvelyan A.		21.10.2020

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1. Introduction

1.1 Purpose

The purpose of this document is to present a detailed description of the Finance Application. It will explain the purpose, features of this system, and user interface, what the system will do, constraints under which it must operate and how system will react to external stimuli. This document is intended for both stakeholders and developers.

1.2 Scope

This system is intend to be a web service for everybody who wants to start tracking their finances. The software products name is "Finance Application".

More specifically, this system goes to help you to manage your finances, coordinate your income and outcome, ensure statistics information.

Whole system is a cross-platform web application which is connected to database.

1.3 Glossary

Term	Definition
Service	*"Finance Application" application*
Database	Collection of all the information which is stored in system.
User, Admin	Manager, who was logged into the system.
Products	Goods to be sold.
Category	Group of related products.
Attributes group	Attributes, which were grouped by similar topic or product.
Attribute	One field of product characteristics.
Order	Set of products which customer wants to buy.
Work example	Set of photos and videos with description.
Software Requirements Specification	A document that completely describes all of the functions of a proposed system and the constraints under which it must operate. For example, this document.

1.4 References

IEEE. *IEEE Std 830-1998 IEEE Recommended Practice for Software Requirements Specifications.* IEEE Computer Society, 1998.

"Методичні вказівки до виконання лабораторних робіт для студентів напряму підготовки

6.050101 «Комп'ютерні науки», спеціальностей 8.05010102 «Інформаційні технології проектування» та 8.05010103 «Системне проектування» денної та заочної форм навчання", Dph Konstantin Kharchenko.

1.5 Overview

The next chapter, the Overall Description section, of this document gives an overview of the functionality of the product. It describes the informal requirements and is used to establish a context for the technical requirements specification in the next chapter.

The third chapter, Requirements Specification section, of this document is written primarily for the developers and describes in technical terms the details of the functionality of the product.

Both sections of the document describe the same software product in its entirety, but are intended for different audiences and thus use different language.

2. Overall Description

2.1 Product Perspective
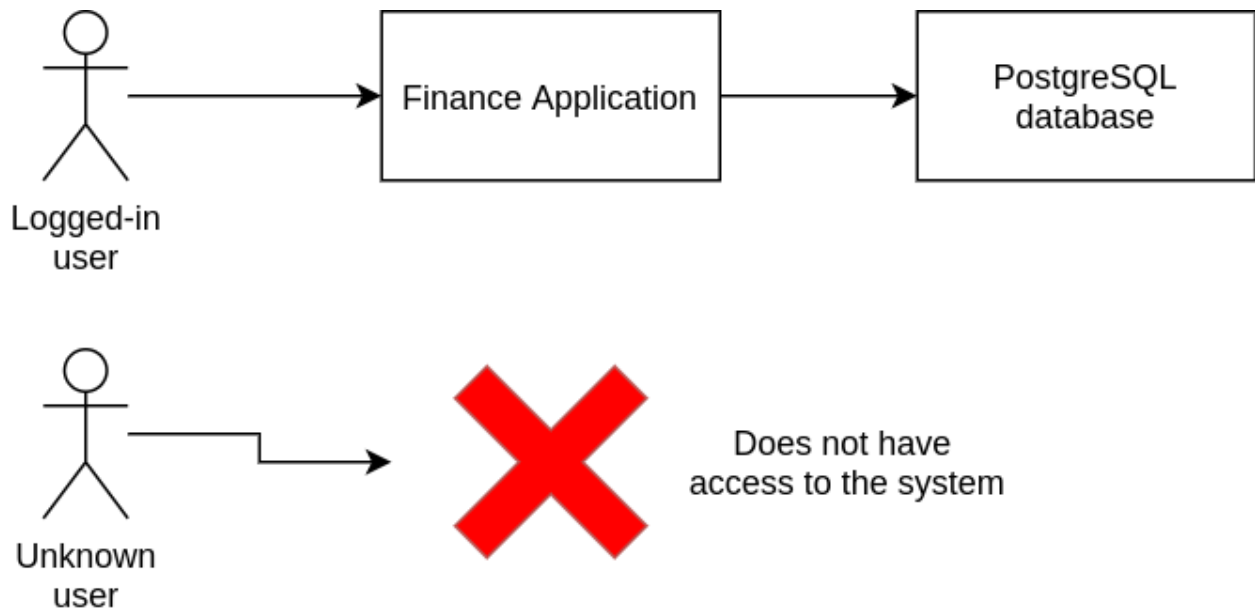
The Finance Application has only one type of users: logged-in users. If an user is not logged-in he/she cannot use finance tracking system.

2.2 Product Functions

Product function is to make financial management easy and unmask it for everyone. The main usecase is to provide a system which gives income and outcome management and which stores all transactions in a database.

2.2 Functional Requirements Specification

This section outlines the use cases for each of the active readers separately. The reader, the author and the reviewer have only one use case apiece while the editor is main actor in this system.

2.2.1 Unauthorized User Use Case
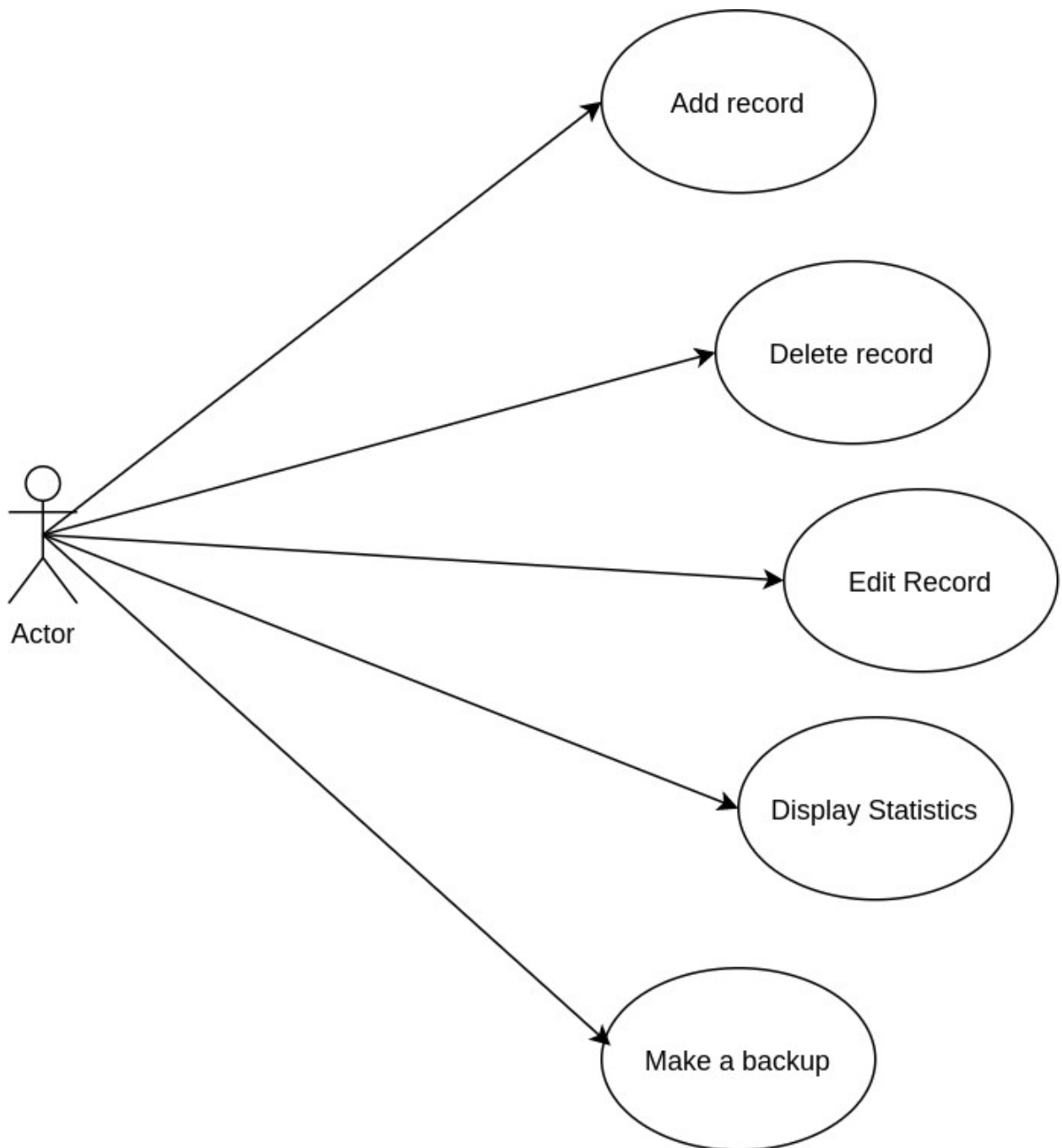
Initial Step-by-Step Description

As initial point can be every user who is not registered or authenticated in the system. Therefore they have no access to any functions beyond registration and signing in.

Diagram:
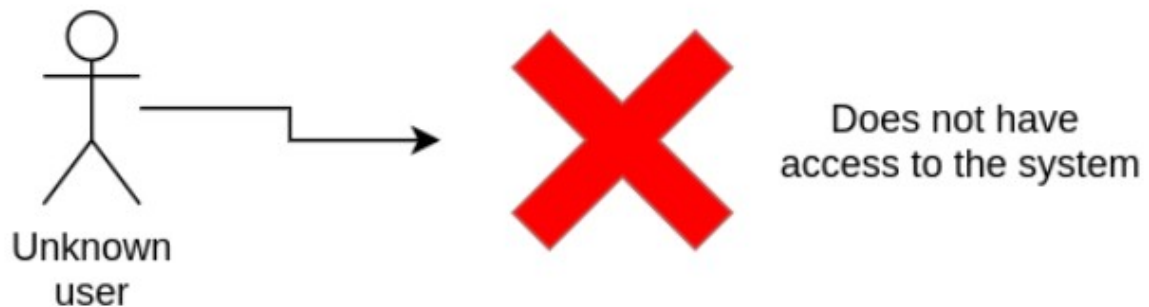
2.2.1 **Authorized User** Use Cases
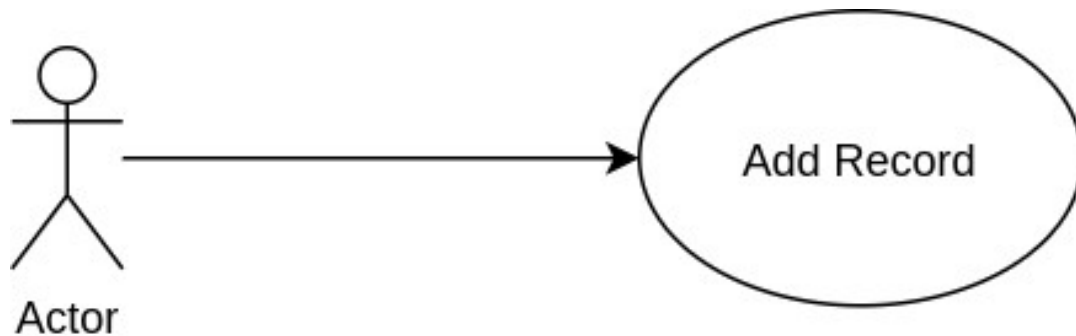
Diagram:

Use case: Add record

Brief Description:

The user creates a new record in their board.

Initial Step-By-Step Description:

1. The user clicks to Add income/Add outcome
2. The system presents a pop-up in which user inputs an information.
3. The record with the information is added to the whole list.
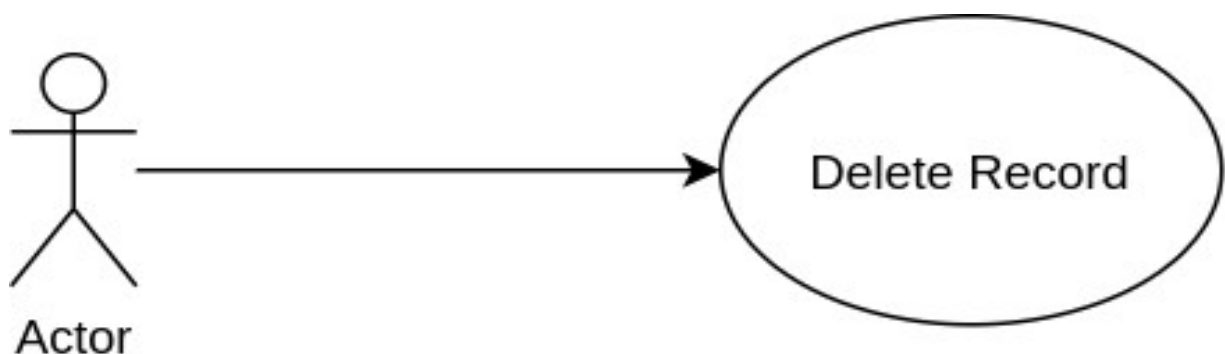
Diagram:

Use case: Delete record

Brief Description:

The user deletes an existing record in their board.

Initial Step-By-Step Description:

1. The user hovers on the record.
2. The record is being augmented by two buttons: delete and edit.
3. The user clicks the "delete" button.

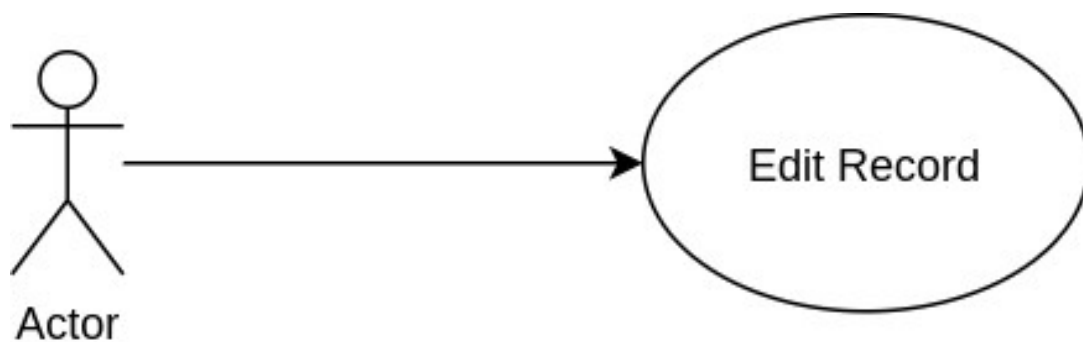**Diagram:**

Use case: Edit Record

Brief Description:

The user deletes an existing record in their board.

Initial Step-By-Step Description:

1. The user hovers on the record.
2. The record is being augmented by two buttons: delete and edit.
3. The user clicks the "delete" button.

Diagram:

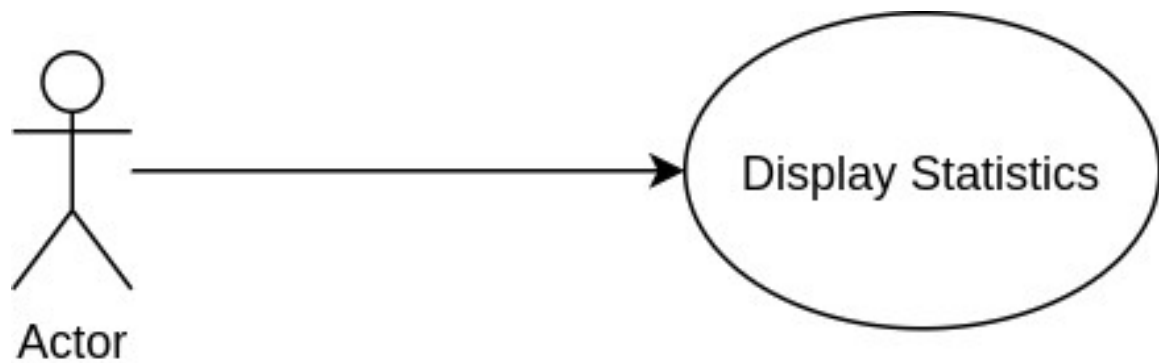Use case: Display Statistics

Brief Description:

The user goes to the page with all statistics.

Initial Step-By-Step Description:

1. The user clicks to Statistics button
2. Browser redirects user to the Statistics section.

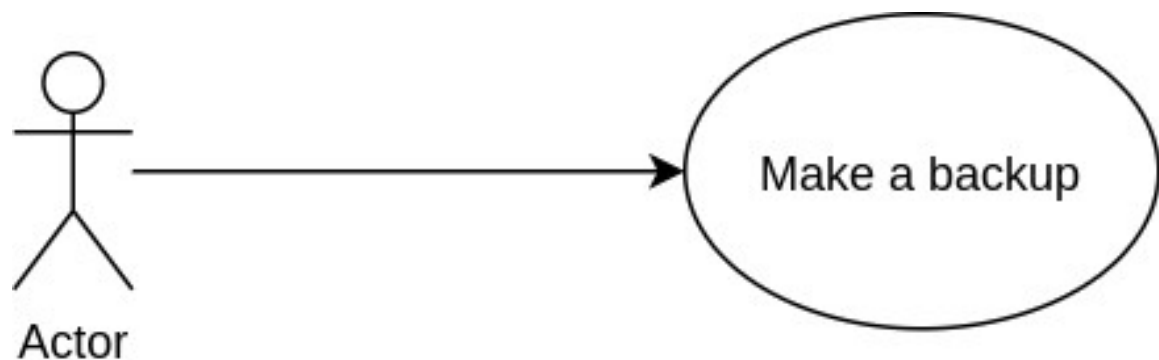**Diagram:**

Use case: Make a backup

Brief Description:

The user creates a backup of their records history.

Initial Step-By-Step Description:

1. The user goes to settings page.
2. The user clicks to the make backup button
3. The user confirms making backup.

Diagram:

2.3 User Characteristics

System user is a person who want to control their finances. It can be any person who

knows how to use contemporary web services and perform basic operations with browser.

2.4 General Constraints

The main constraint of the web application is that internet connection required, therefore a user cannot manage their records. Can not work on browsers IE6 and less. Minimum RAM is 512 MB.

3. Specific Requirements

3.1 External Interface Requirements

3.1.1 Hardware Interfaces
Service: Any device with internet surfing ability.

Server: Server computer.

3.1.2 Software Interfaces

Service: All browsers besides IE6 and less.

Server: Arch Linux + Python 3.6 (with all required packages) + PostgreSQL db.

3.2 Functional Requirements
Login: input user login and password.

Password restoration: input user email address, input security code from email.

Logout: button at the right top corner.

Change user info: form with (name, surname, email, login) fields.

Change user password: form with (old password, new password, repeat password) fields.

Delete account: form with (account password field)

Edit category, edit product, edit work: form with pre-filled data.

Delete category, delete product, delete attributes group, delete attribute: button with confirmation alert.

Add category, add product, add work: form with fields.

Add attribute group, add attribute, add media content: single line (name) input.

3.3 Non-Functional Requirements

3.3.1 Performance

Speed of system execution depends mostly on Internet connection, and server processor.

3.3.2 Availability

This is a private app. It's available only for shop owner.

3.3.3 Security

All your personal information is secured and encrypted. Every CRUD query is protected by

CSRF token.

3.3.4 Maintainability

System will have regular updates that fix bugs and performance improvements. Besides that could be added new features.
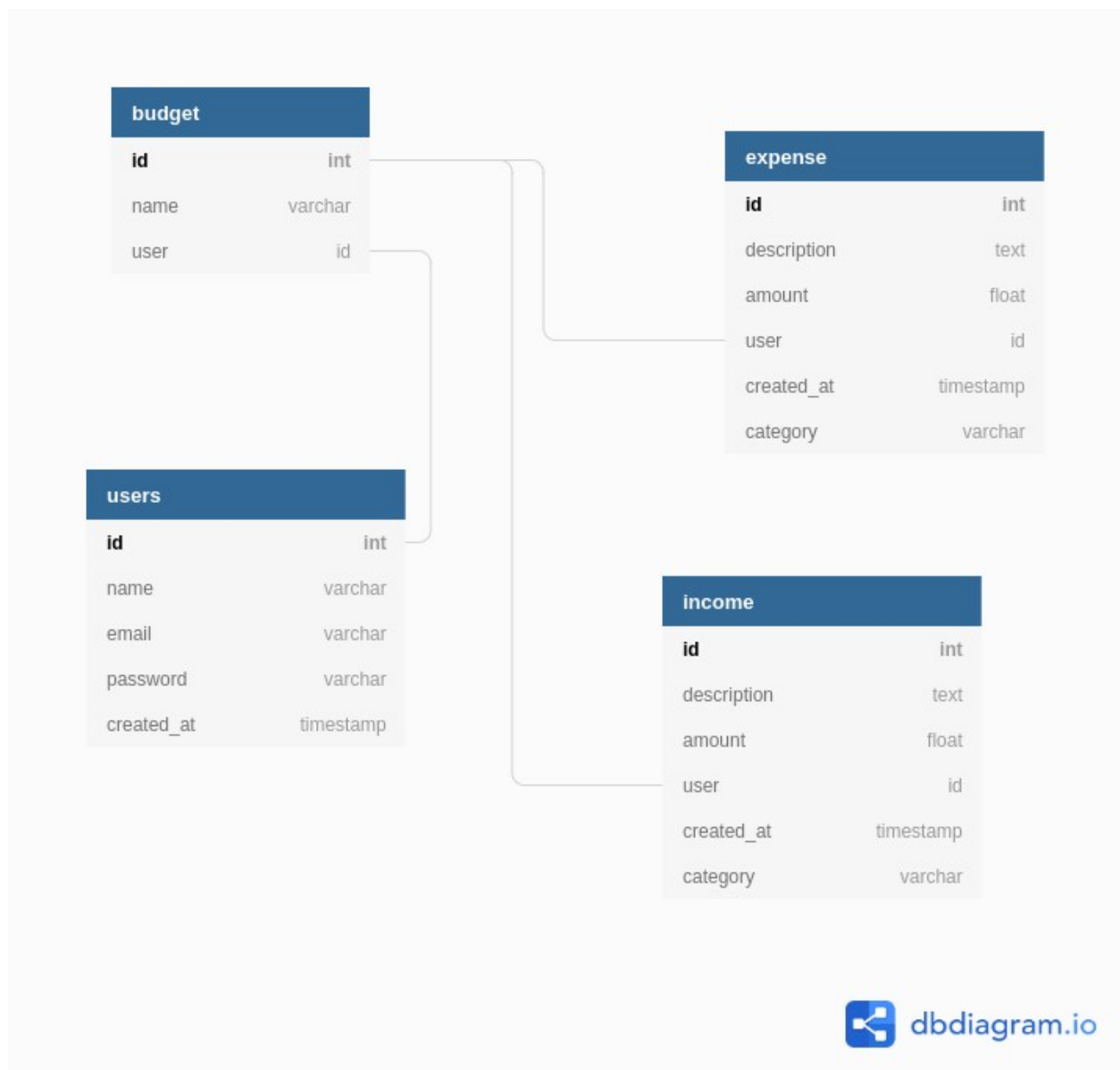
3.3.5 Portability

System targets wide range of devices:
- Android;
- IOS;
- Windows;
- Linux;

3.4 Logical Database Requirements

Logical structure of data to be stored in the Database is given below.

For the application were chosen SQL database (PostgreSQL), which provides good perfomance on big amount of transactions and has a good scalability.

4. Tests

The main goal	Preliminary requirements	Required Actions in order to perform a test	System's state after test	Actions which reverts system's state	Comments
To create a record	The user shoud be authenticated	Click to the Add Income/Add outcome button, fill the gaps and accept creation	The records will be augmented by the new one, the whole amount of money will change	Delete the record which was created	Record will be displayed as a new rectangle with the data.
To edit a record	The user shoud be authenticated	Hover on the record which should be changed and click Change icon. Fill in all needed changes and save the record.	The record will be updated.	Reupdate the record performing the same procedure.	You cannot change id of the record because of its uniqueness.
To delete a record	The user shoud be authenticated	Hover on the record which should be deleted and click Delete icon. Accept the deletion.	The amount of record will be shorten by one.	-	Deletion is not revertable operation. The system has not got any backlog.
To display the statistics	The user shoud be authenticated	Go to the *Display Statistics* page	The main page will be replaced by Statistics page	Click to the main page icon	Statistics configurations could be changed in the

					appropriate area.
To make a backup	The user shoud be authenticated	Go to the settings, click *Create Backup* and accept.	The system will not change.	-	There are 2 types of backup: as csv file or as json file.
To change password	The user shoud be authenticated	Go to the User page, tap on *Change Password* button, change the password and accept the changing.	The password of the user will be changed.	To rechange the password to the previous one, but after one day since the last change.	Person could only twice change their password by the 3 days.
To register	The user shoud be unauthenticated	Click to the *Sign-Up* button, fill in all needed credentials and confirm registration.	The new user will be added to the system database	Go to the settings and choose *Delete Account,* confirm your password and accept.	Registration is email-based and needs only to store your data in the cloud.