User-Task-Goals Analysis of
PEA: Personal Expense Assistant

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This analysis document delineates the users, tasks, and users' goals in preparation for making necessary design decisions in creating the Personal Expense Assistant software application.

Description of PEA: Personal Expense Assistant

The Personal Expense Assistant (PEA) application is an Android operating system application for mobile handheld devices to manage personal finances. PEA will help individual users know if they have enough money to do what they want. PEA is intended to provide continuously available control over personal finances and will

provide easy usability and strict security protection.

Primary Users

Quoting the undergrad team,
> "The primary user of this system will be any adult with finances to manage who owns an Android device. These users will typically have at least some knowledge of technology and how personal banking systems work; we are looking to simplify the process of online banking by consolidating multiple accounts into one location."

PEA is intended as a personal finance application so users will be individuals. There might be rare occasions of having shared finances and then there might be two users at once. Users could be novice or expert Android users and could have various characteristics impacting their ability to use the PEA.

Speculating more specifically about the potential PEA users, we can expect the user probably has some money because they can afford the service fees of an Android data phone. Users have some financial resources in one or more banks or other holding company. People without bank accounts that use cash only would not need PEA because they could just look in their wallet or bag of money under their bed. PEA users would probably be savvy about managing money and care about not messing up and paying heavy overdraft and other interest fees. PEA users would probably have some literacy and are probably not Luddites because they have an Android device.

It is conceivable that PEA users would be inexperienced with money management and could use PEA under the supervision of some oversight manager as a training device to get more experienced with money management. Or users could be people with limitations that require they have a leash or other supervision on their money which an application like PEA might provide.

Stakeholders

Stakeholders are secondary and tertiary users of the PEA.

Secondary Users

Secondary users are occasional or indirect users. Finance employees, PEA support personnel, and authorities reviewing individual finances are secondary users of the PEA. Finance personnel might use a customer's PEA to review their activity or assist with money management.

Unauthorized intruders also are secondary users. There could be children that play with the mobile device and monkey with PEA. There could be friends or robbers that try to access PEA for a variety of reasons including snooping or stealing. There could be other tertiary users like police or forensics trying to get information about the PEA user.

Tertiary Users

Tertiary users do not use the system but are impacted in some way by PEA's existence. Banks, stores where purchases are made, and companies that are due payment from the primary user are all tertiary users and are impacted by the primary user having PEA on their Android device.

Friends or family that receive gifts from the primary user are also tertiary users because as the primary user is aware of budget allowances, they might be more or less likely to purchase gifts for others.
Other tertiary users could include creators of a competitor product to PEA who should be aware of PEA in order

to effectively beat it in the marketplace.

Sales and marketing personnel for Android devices are tertiary PEA users because they can advertise or promote Android based on PEA being an option. The postal service is a tertiary user of PEA because they will have less mail to deliver if people use PEA from both automatic or transfer payments and also online bill details and flags or warnings reminding the primary user to pay bills.

Facilitating Stakeholders

PEA designers, creators, marketers are facilitating stakeholders that want PEA to succeed as a product.

Table of Primary Users' and Stakeholders' Goals

USER	USER TYPE	GOALS
Individual adult men and women or Individual teenagers with bank accounts or debit or credit cards	primary	[quoting undergrad PEA team] Budgeting Feature Account Management Automatic Bill Pay Overspending Warning Spending Reports Transaction Reports Widget Viewing Other Uses [end quote]
Finance employees	secondary	Review, document, control, research PEA users financial management
PEA support personnel assisting PEA users	secondary	Review, analyze, and correct any trouble user is having with PEA
Authorities reviewing individual finances (Auditors, Parents, Granting Agents)	secondary	Control a PEA user's finances, train a user in financial management through PEA reminders and limits. Review and research for auditing. Record and document for grant reports, audits, or funding agents.
Unauthorized intruders (children, parents, friends, police, criminals)	secondary	Destroy, interfere, or remove assets of PEA user. Research for forensic or other reasons PEA user's financial management.
Banks Stores where purchases are made Companies that are due payment from the primary user	tertiary	Manage their own records and finances Make money

Friends/family that receive gifts from the primary user	tertiary	Enjoy friendship Receive gifts
Competitors to PEA	tertiary	Compete successfully against PEA
Sales and marketing of Android devices	tertiary	Use PEA as a marketing advantage
Postal service not delivering bills or payments because of wire transfer payments	tertiary	Have a profitable service industry
PEA designers, creators, marketers	Facilitating stakeholders	Get PEA to market quickly, with great functions and easy to use

Primary Users' Tasks

1. manage finances
2. review multiple accounts in one interface
3. secure login
4. secure connection to online banking
5. protection from unauthorized access to PEA
6. banking capabilities
7. overdraft warnings
8. buffers and warnings on spending limits
9. budgeting tool
10. automatic bill payment
11. automatic bill payment notifications and reminders
12. transfer funds
13. set up automatic payments
14. spending reports

Essential Tasks

There are a variety of essential tasks that are part of managing personal finances. The undergraduate PEA team came up with the following use scenarios and tasks.
[quoting undergrad PEA team]
Use Scenarios/Tasks

1. A user is at the store and needs to check how much they have in their bank accounts to know how much they can spend. Using the budgeting feature they will be able to make sure to only spend the amount of money they have available.
2. A user has multiple accounts that they would like to manage. PEA should be able to manage all the accounts through the same easy-to-use interface.
3. A user sets up auto bill pay to take care of payments automatically at scheduled times/dates.
4. A user attempts to purchase something before paying a pending bill. The system should warn the user of the impending deficit in funds if the purchase is made.
5. A user wants to see spending over a time period in a categorized listing. The system should be able to provide a report categorizing spending into different categories: gas, rent/bills, toys, etc.
6. A user would like to see transaction history over a given period of time. PEA should be able to generate a report showing a table of these transactions.
7. A user wants to see account information quickly. The user should be able to add a widget to the home

screen that will provide account information in an easy and quick to understand format.
[end quote]

Essential Task Scenario

The most essential task seems to be letting the primary user know how much money they have available and the other tasks support that. For example, bill pay, warnings, budget tools all support the essential task of knowing if there is enough available money. As the primary user manipulates or reviews their finances using PEA, they could change how much money they have available.

One scenario is a 25 year old female purchasing a gaming system. She is at the store, she securely logs in to PEA on her Android device and checks how much money she has. There is enough, but possibly then she will be short on her payments for her sports car. She opens a review screen of all her accounts, checks her auto payments and warnings and sees that she is scheduled to buy welcome presents for two aliens coming to stay at her apartment for the weekend. If she had just bought the gaming system without using her PEA, she would have made a foreign diplomacy error of planetary proportions. Instead she buys the welcome gifts. The world is saved.

Plausible Action Lists

This is the action list for the essential task of checking that the primary user has enough money available to buy something.

1. Look at Android device, turn it on if necessary
2. securely log in to PEA
3. look at available money showing on screen
4. if necessary, uses menu, buttons, or shortcuts to review pending payments, debts, warnings
5. log off PEA and replace Android device in pocket
6. spend money

Here is a second action list for the essential task where the primary user sets up an auto payment.

1. Look at Android device, turn it on if necessary
2. securely log in to PEA
3. schedule a payment
4. set whether it is repeating or not
5. confirm that you want the payment made
6. if necessary, uses menu, buttons, or shortcuts to review other pending payments, debts, warnings
7. log off PEA and replace Android device in pocket

Here is a third action list for the essential task of reviewing spending over time.
1. Look at Android device, turn it on if necessary
2. securely log in to PEA
3. open the spending screen
4. set the categories you want to review
5. review the information
6. if necessary, uses menu, buttons, or shortcuts to review other expenses, debts, warnings
7. log off PEA and replace Android device in pocket