Original Article

Design and Implementation of Personal Finance Software for Controlling Financial Efficiency

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Abstract - This study presents the development and implementation of software designed to help individuals better manage their personal finances. Developed using agile methodologies such as Scrum and Extreme Programming (XP), the software integrates key features, including transaction tracking, personalized reports, and expense categorization, all within an intuitive and user-friendly platform. The results indicate that users highly valued the software's ease of use and utility, highlighting its effectiveness in enabling more efficient and informed financial management. However, visual design was identified as an area for improvement, with some users noting that aspects such as aesthetics and organization could be optimized to enhance the overall user experience. Compared to existing tools, this software stands out for its user-centered approach and flexibility to adapt to different needs. Moreover, the methodologies applied enabled the development of a product that effectively addresses everyday financial challenges. This work not only meets its proposed objectives but also opens opportunities for future enhancements, such as integrating security features and personalization options and analyzing the long-term impact on users' financial well-being. In summary, this software represents a significant step forward in creating practical and accessible tools for personal financial management. It empowers users to make more informed decisions and improve their relationship with their finances.

Keywords - Financial decisions, Personal finances, Software design, Software engineering, Web application.

1. Introduction

In a world where financial decisions are becoming increasingly complex, managing personal finances is not just a necessity but a key tool for achieving economic stability and well-being. Studies like that of Atatsi et al. (2023) highlight that effective financial management can significantly improve people's quality of life by not only optimizing resources but also reducing the stress associated with economic uncertainty. Despite the availability of numerous financial applications, many of these tools fail to meet the specific needs of users. Young adults with variable incomes or families seeking to jointly manage their finances often find that existing solutions lack personalization and fail to integrate essential functions, such as financial trend analysis or debt planning. This creates a gap between user expectations and what current technology can provide. Although previous research has explored innovative aspects, such as gamification in personal finance (Bitrián et al., 2021) or the development of Android-based applications (Makalew, 2022), there are still unexplored areas, particularly in leveraging agile methodologies to ensure adaptability, ease of use, and a more inclusive experience for users with no prior financial expertise. The main challenge identified lies in the lack of technological solutions that effectively combine automation, personalization, and analytical tools within an agile, user-centered framework. This limitation affects individuals' ability to make informed decisions, especially in a context where financial interactions are increasingly dynamic and demanding.

This study stands out by presenting personal financial management software designed using agile methodologies such as Scrum and Extreme Programming (XP). These not only enable rapid iterations but also provide continuous feedback to ensure the final product aligns with the real needs of users. Among the innovative features of this tool are automated transaction tracking, personalized report generation, and proactive debt management, surpassing the limitations of existing applications. In conclusion, this article seeks not only to fill a gap in the research but also to offer a practical and innovative solution that empowers individuals to manage their finances. By integrating agile methodologies and a user-centered approach, this work aims to make a significant contribution to the development of financial technologies that address present and future challenges.

2. Literature Review

The design and development of software for personal financial management has garnered significant interest due to the growing need for tools that enable the effective administration of personal resources. Various studies have addressed this topic from different perspectives, highlighting its relevance in improving users' daily lives and solving specific problems they face when managing their finances. For example, [3] and [4] analyzed Android-based and hybrid mobile financial management applications, emphasizing the importance of simple and accessible interfaces to improve user experience.

However, these proposals do not fully address the need for flexibility and adaptability in a dynamic financial environment, highlighting the value of agile methodologies such as Scrum and Extreme Programming (XP). These methodologies enable rapid iterations and continuous feedback, ensuring solutions respond to users' real needs [5]. On the other hand, studies like [6] have explored applications that integrate advanced functions, such as stock market data analysis. These studies demonstrate that personalization enhances the user experience by offering specific functionalities tailored to individual needs.

However, [7] warns that many of these tools are not sufficiently accessible to users without prior financial experience, limiting their impact. This challenge is directly related to the ease-of-use variable, which is essential in our study as it ensures that anyone can benefit from the software without a steep learning curve. In the context of agile methodologies, [8] highlighted the importance of incorporating technologies such as Optical Character Recognition (OCR) in personal finance applications, improving usability by automating tasks. Similarly, [9] showed how intelligent assistants can optimize user interactions by personalizing financial recommendations based on their habits.

Additionally, [10] addressed the development of personalized financial applications for small businesses, demonstrating how user-centered tools allow for greater control over cash flows and transaction management. These findings align with the conclusions of [11], which underscore the need for scalable solutions adaptable to diverse financial scenarios. Recent studies [1] have highlighted the impact of psychological factors, such as locus of control, on household financial management, emphasizing the importance of tools that integrate behavioral approaches.

Complementarily, [12] explored the use of machine learning in financial management applications to predict spending patterns, proposing significant improvements in process automation. Furthermore, [13] showed how financial applications can adapt to different user profiles through flexible configurations, enhancing personalized experiences. Likewise, [14] emphasized the importance of robust security structures in web applications to protect users' financial data, a key aspect in building trust in such solutions. Finally, [15] studied Flutter-based applications for expense management, highlighting their cross-platform capabilities and inclusive approach, which broaden the possibilities of technological adoption.

Lastly, recent literature underscores the relevance of user-centered design. [16] and [17] advocate directly involving end users in software development to ensure that the final product is intuitive and practical. This approach highlights the importance of variables such as design and accessibility, which not only increase user satisfaction but also foster broader adoption of technology.

In summary, while the existing literature has achieved significant progress, gaps remain in integrating agile methodologies and user-centered design within the field of financial applications. This work seeks to address these challenges by offering an advanced, accessible, and practical technological solution tailored to the real needs of users.

3. Methodology

The development of this personal financial management software was based on a flexible methodology enriched with elements from Scrum and Extreme Programming (XP). This approach provided the necessary flexibility to adapt to project demands, maximize efficiency at every stage, and ensure that user needs remained central to the design. According to Althnian (2021), agile methodologies like Scrum are particularly effective for projects requiring rapid iterations and continuous feedback, while XP offers technical practices that enhance the quality of the final product.

3.1. Phase 1: Planning

In this initial phase, the functional and non-functional requirements of the software were defined. Functional requirements addressed specific system features, such as the ability to record, categorize, and analyze financial transactions. Non-functional requirements focused on aspects like data security, system performance, and an intuitive interface. A flowchart was created during this stage to represent the overall architecture of the software and the sequence of processes clearly and in detail. This diagram helped identify potential bottlenecks and ensured the seamless integration of all functionalities. Proper planning in this phase was crucial, as it laid the foundation for a successful development aligned with user expectations.

3.2. Phase 2: Design and Prototyping

In the second phase, visual models of the software were developed, including detailed representations of the user interface and the system's main functionalities using tools like

Figma. These models allowed for a clear visualization of user interactions with the software, ensuring the design was both intuitive and accessible.

Functional prototypes were also created to validate the user experience and make adjustments before final implementation. The significance of this phase lies in ensuring that the design aligns with the objectives, minimizing potential errors or misunderstandings during the development process.

3.3. Phase 3: Implementation and Testing
In the final phase, the software was coded using PHP and MySQL, chosen for their robustness, flexibility, and widespread adoption in web application development. This process involved implementing all planned functionalities ensuring their integration and operability. User testing was conducted during this phase, focusing on three key dimensions: ease of use, utility, and design. Participants were intentionally selected based on criteria such as age, financial experience, and frequency of using technological tools, ensuring a representative sample of the software's target audience. Evaluations were carried out using Likert-scale questionnaires, with results statistically analyzed to identify trends and areas for improvement in the system's design and functionality.

3.4. Rationale for Scrum and XP
Scrum and XP were chosen for their ability to manage complex projects through short iterations, constant feedback, and an emphasis on incremental value delivery. Scrum facilitated structuring the work into clearly defined sprints, while XP contributed technical practices such as test-driven development and pair programming, ensuring clean and functional code. These methodologies were preferred over other agile options for their adaptability and collaborative focus, which were critical for a project prioritizing user experience. This methodology effectively combined the flexibility of a free approach with the structure and efficiency of proven agile practices.

The tools and procedures used, along with constant iterations with users, ensured a development process aligned with the study's objectives and the users' real needs. The figures mentioned enriched the analysis by offering a visual representation of the process, facilitating its understanding.

4. Results
The results obtained during the development of this software are structured based on the defined objectives, providing a clear view of how each phase of the project contributed to achieving the proposed goals. Below is a detailed analysis of the key stages and findings**.**

4.1. Results of the Planning Phase
In this phase, the functional and non-functional requirements of the software were identified and documented. These requirements served as the foundation to ensure that the system addressed essential aspects, such as transaction recording, personalized report generation, and data security.

Table 1 outlines the primary functional requirements, highlighting the specific capabilities the system must support to meet user needs. In contrast, Table 2 details the non-functional requirements, emphasizing characteristics like system speed and cross-platform compatibility. These requirements ensure that the software delivers an optimized experience tailored to the user.

Table 1. Functional requirements

ID	Requirements
RF1	Users must be able to record new expenses with details such as date, user description, status, and classification to maintain a detailed financial record.
RF2	Users must be able to view the history of cash expenses to review financial movements in this category.
RF3	Users must be able to view the history of credit expenses to monitor the status of pending payments.
RF4	Users must be able to delete a registered expense or income to keep their financial database updated.
RF5	Users must be able to assign a supplier to a registered expense to identify from whom they are purchasing.
RF6	Users must be able to register new products with a name and classification to include goods in their financial records.
RF7	Users must be able to modify the price and status of registered products to reflect changes in their conditions.
RF8	Users must be able to view the pending balance and a list of expenses incurred up to the current date to understand their financial situation.
RF9	Users must be able to filter registered products by categories such as income, debts, payments, and collections to analyze their data better.
RF 10	Users must receive reports on total expenses, the number of product users, and financial flows to gain a general understanding of their financial balance.

Table 2. Non-Functional requirements

ID	Requirements
RNF1	The software must respond quickly to user actions to avoid delays in financial management tasks.
RNF2	The interface must be intuitive and easy to use, requiring no advanced technical knowledge.
RNF3	The software must be compatible with multiple operating systems to ensure usability across devices.
RNF4	Financial data must be protected through encryption to guarantee user information security.
RNF5	The software should consume minimal system resources to run smoothly on low-performance devices.
RNF6	Software updates must be automatic and non-disruptive to maintain functionality effortlessly.
RNF7	The system should allow users to back up financial data to prevent the loss of important information.
RNF8	Error messages must be clear and specific to help users resolve issues effectively.
RNF9	The software must have an availability rate of 99.9% to ensure access when needed.
RNF10	The software documentation must be detailed and clear so that users can troubleshoot independently.

4.2. Results of the Design and Prototyping Phase

The design and prototyping phase focused on visually developing and validating the key functionalities of the software, ensuring they were accessible and intuitive for users. Below, the most relevant elements of this stage are described, including diagrams, views, panels, and functionality tables.

The design began with a flowchart that mapped the logical sequence of the software's processes, identifying potential areas for improvement and ensuring that the functionalities were aligned with the stated objectives. This flowchart facilitated the understanding of the workflow for both developers and users.
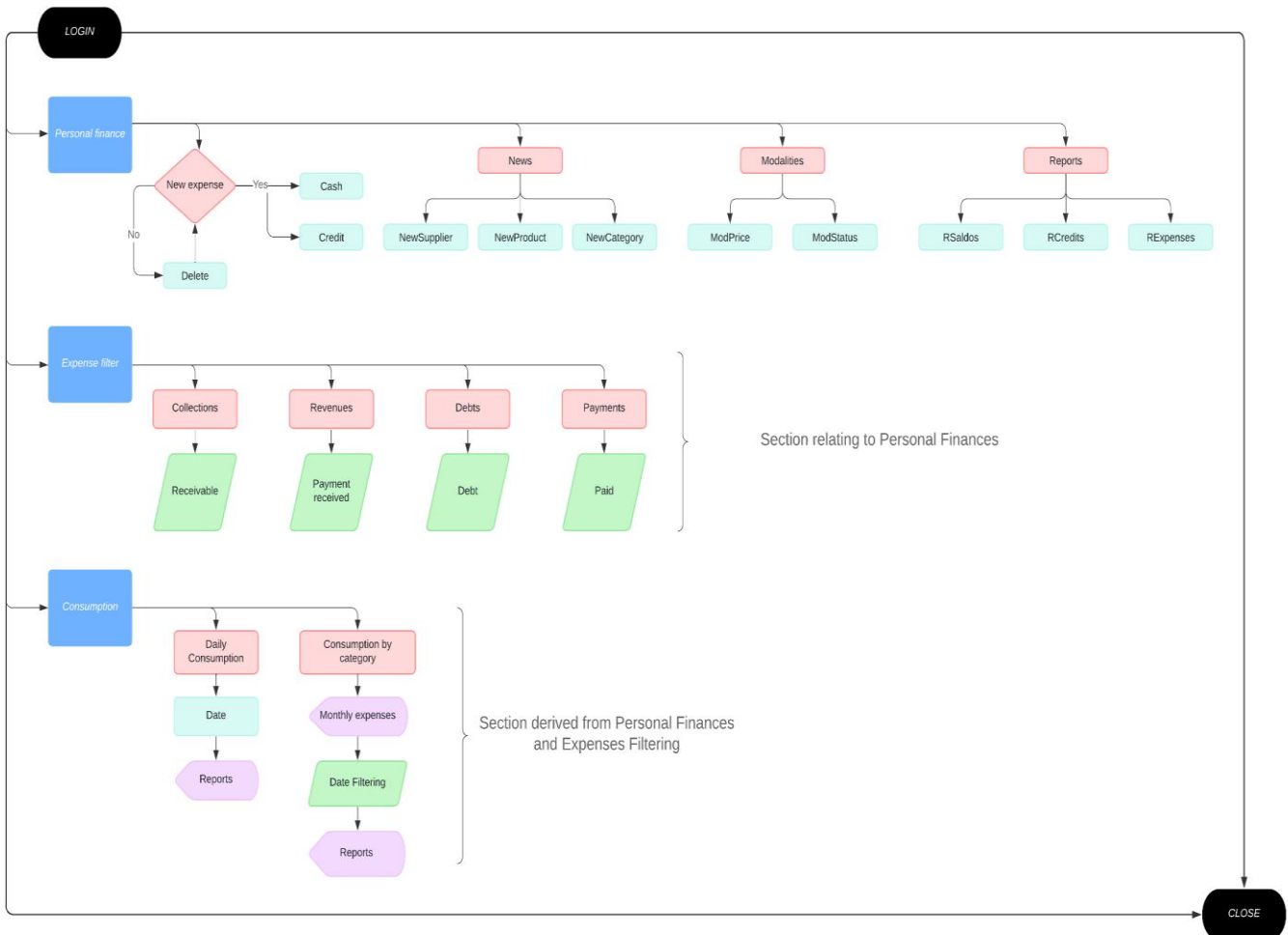
Fig. 1 Flowchart

Figure 1 shows how the main operations of the system are interconnected, ensuring an efficient flow of information and a coherent structure. Additionally, the prototype included an interactive view adapted for mobile devices, which was essential to ensure cross-platform compatibility. This view represented the initial interface of the software and allowed the evaluation of aspects such as navigability and element layout.

Figure 2 details how the initial interface is intuitive, allowing users to navigate through the system's functionalities easily. Table 3 outlines the key functionalities associated with the general view of the software, including elements such as expense recording, balance visualization, and transaction categorization. These functionalities were designed to provide users with a seamless and efficient experience.

Table 3. General view functionalities

ID	Functions
1	Software interface at startup
2	Extended view of the financial editing panel
3	Expense registration interface upon clicking the "New Expense" button
4	New product registration window upon clicking the "New Product" button
5	View of expense list and pending balance upon clicking the "RSaldos" button
6	View of expense list and pending balance upon clicking the "RCréditos" button
7	View the total of expenses upon clicking the "RGastos" button
8	Financial list of registered products
9	List selector with "Previous" and "Next" options

Fig. 2 General view of the software on a mobile device
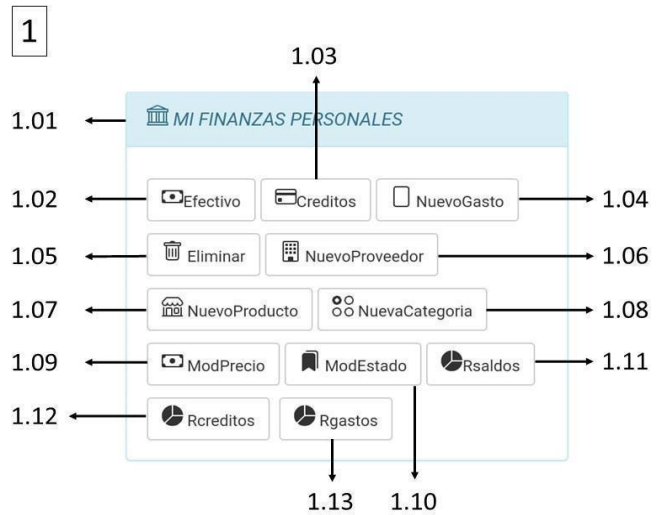
Fig. 3 Financial editing panel

Table 3 shows how these features enable users to interact with the software quickly and in an organized manner. Additionally, the editing panel was designed to centralize the software's main operations, such as managing income, expenses, and financial reports.

Figure 3 details how users can interact with specific functions, such as modifying records and assigning suppliers. Table 4 describes the functionalities included in the editing panel, highlighting features that enhance the user experience, such as expense categorization and detailed report generation.

Table 4 shows how these functions are essential for personalized and efficient financial management. The consumption panel is a visual tool that allows users to analyze their spending patterns categorized by day or type of consumption. This feature facilitates financial planning and control.

Table 4. Financial editing panel functionalities

ID	Functions
1.01	Financial indicator
1.02	Cash indicator
1.03	Credit indicator
1.04	New expense
1.05	Delete
1.06	New supplier
1.07	New product
1.08	New category
1.09	Modify price
1.10	Modify status
1.11	RSaldos
1.12	RCréditos
1.13	RGastos

Fig. 4 Consumption panel

Figure 4 illustrates how this panel enables users to identify consumption trends and make adjustments to their budgets. Additionally, the reporting module shown in Figure 5 provides detailed information about balances, credits, and expenses. Figure 5 details how this module consolidates key

information for financial decision-making, providing clear options to navigate between different categories of reports.

4.3. Results of the Implementation and Testing Phase

The implementation and testing phase focused on translating the planned design and functionalities into fully operational software using robust technologies such as PHP and MySQL. This stage not only integrated all the anticipated features but also ensured their proper functioning through rigorous testing. Below are the main figures documenting the technical process, with detailed descriptions of their purpose and impact on the project. The process began with the development of web applications, as documented in Figure 6, which details the interaction between the client and the server. This figure illustrates how requests are processed, and responses are generated efficiently.

This figure highlights the modular structure of the system, ensuring smooth data management. Income and expense transactions, fundamental to the software's functionality, were implemented with robust logic, as demonstrated in Figure 7, which details the data flow for recording and processing each operation. This functionality ensures the accuracy and consistency of the stored information.
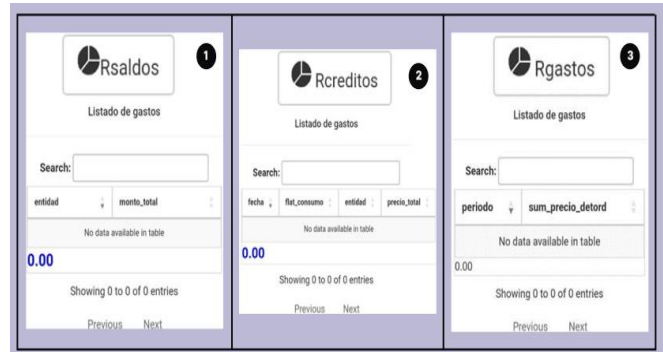
Fig. 5 Financial editing panel: (1) RSaldos, (2) RCreditos, and (3) RGastos
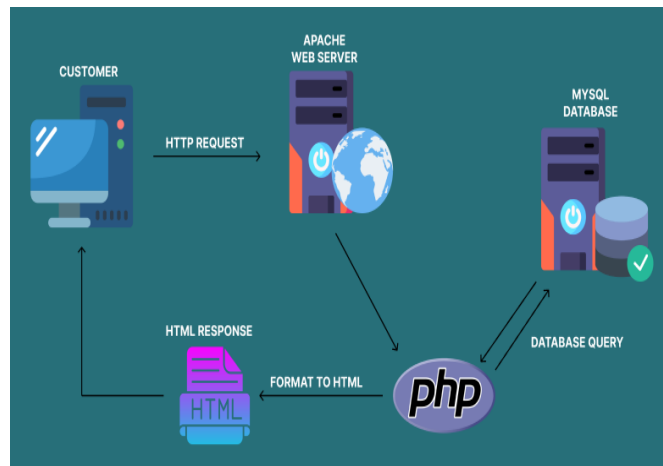
Fig. 6 Web and PHP application development

```php
public function obtenerTransacciones($where = "")
{
  $arrWhere = array();
  $strWhere = "";

  if(!empty($where['id_detord'])){
    $arrWhere[] = "id_prod = {$where['id_prod']} ";
  }

  $estado = "";
  if($_GET['tipoGasto'] == 'efectivo'){
    $estado = " estado not like 'Por pagar' ";
  }else{
    $estado = " estado = 'Por pagar' ";
  }

  $arrWhere[] = $estado;

  $arrWhere[] = "(nom_prod != 'Movimiento' AND nom_prod != 'cuadre' ) ";

  if(!empty($arrWhere)){
    $strWhere = ' WHERE ' . implode(' AND ', $arrWhere);
  }

  $sql = "SELECT
      precio_detord,
      fecreg_detord,
      nom_cat,
      nom_prod,
      cant_detord,
      descripcion,
      proveedor,
      entidad,
      estado,
      tipo_transaccion_detord,
      tipo_egreso_detord,
      agrupacion_detord,
      id_detord
      from detalle_orden  a
      INNER JOIN productos b on a.id_catprod = b.id_prod
      INNER JOIN categorias c on c.id_cat = b.id_cat
      $strWhere
      ORDER BY  id_detord  DESC
      ";

  $query = $this->db->query($sql);
  return $query->result();
}
```

Fig. 7 Income and expense transactions

```php
public function getReportePeriodoCategoria()
{
  $sql = "
    SELECT
    CONCAT(  CONVERT(YEAR(fecreg_detord), CHAR(50)), '-' , CONVERT(MONTH
      (fecreg_detord), CHAR(50)) ) AS periodo,
    -- c.nom_cat,
    SUM(precio_detord) sum_precio_detord
    -- ,
    -- proveedor
    FROM detalle_orden a
    INNER JOIN productos b ON a.id_catprod = b.id_prod
    INNER JOIN categorias c ON b.id_cat = c.id_cat
    /*
    WHERE precio_detord < 0 and (entidad like 'Debito%' or entidad =
    'Billetera' ) and nom_prod not like '%Movimiento%'
    */
    GROUP BY PERIODO
    ORDER BY  UNIX_TIMESTAMP(fecreg_detord)  DESC
    -- ,c.nom_cat,proveedor
    ";

  return $this->db->query($sql)->result();
}
```

Fig. 8 SQL queries in PHP for category-based expenses

To classify and analyze expenses by category, specific SQL queries were developed, as documented in Figure 8. These queries enable the generation of detailed reports that facilitate the understanding of spending patterns, optimizing users' financial planning.

The logic for generating balance reports was implemented using PHP functions and SQL queries, as shown in Figure 9. This tool provides users with a clear view of their current financial status, helping them make informed decisions.

```php
public function getSaldosDebito()
{
  $sql = "SELECT
      entidad,
      sum(precio_detord ) as monto_total
      from detalle_orden a
      INNER JOIN productos b on a.id_catprod = b.id_prod
      WHERE /*precio_detord < 0 AND*/
      MONTH(fecreg_detord) >= 2 and
      (entidad like '%Billetera%' OR  entidad like '%Debito%')
      and nom_prod not LIKE 'Movimiento por%'
      /*ORDER BY fecreg_detord ASC*/
      GROUP BY entidad
    ";

  return $this->db->query($sql)->result();
}
```

Fig. 9 PHP logic for balance reports

```php
public function getTotalPorMesCategoria($date = '',$tipoGasto)
{
  $estado = "";
  if($tipoGasto == 'efectivo'){
    $estado = " and estado not like 'Por pagar' ";
  }else{
    $estado = " and estado = 'Por pagar' ";
  }

  $sql = "SELECT CONCAT(YEAR(date(fecreg_detord)), '-' ,Date_format(date(
    fecreg_detord),'%m')) AS aniomes,
          sum(precio_detord) as monto,
          c.nom_cat
      FROM detalle_orden a
      INNER JOIN productos b on a.id_catprod = b.id_prod
      INNER JOIN categorias c on b.id_cat = c.id_cat
      WHERE precio_detord < 0 and
          fecreg_detord like '%$date%'
          and nom_prod not LIKE '%Movimiento%'
          and nom_prod not LIKE '%cuadre%'
      -- and CONCAT(substr(nom_prod,1,11),substr(
      entidad,1,7))  not like 'disposicionCredito'
      -- and estado not LIKE 'Pagado'
      $estado

      GROUP BY aniomes,c.nom_cat
      ORDER BY fecreg_detord DESC
    ";

  return $this->db->query($sql)->result();
}
```

Fig. 10 SQL query in PHP for monthly reports

To provide a comprehensive perspective, categorized monthly reports were designed, represented in Figure 10. This component consolidates financial data and offers users a strategic view of their cash flow. The system's overall financial logic was carefully implemented, as illustrated in Figure 11, ensuring that key operations were performed efficiently and were scalable. This includes managing large volumes of data and integrating various functionalities.

```php
public function insertarProducto()
{
  $data['nom_prod'] = $this->input->post('nom_prod');
  $data['id_cat'] = $this->input->post('id_cat');

  $where['nom_prod'] = strtoupper($data['nom_prod']);
  $producto = $this->Taller_model->obtenerProductos($where);
  if(!empty($producto)){
    echo 'El producto ya existe';
    exit;
  }

  $result = $this->Taller_model->insertarProducto($data);
  if($result){
    echo 'Se inserto correctamente';
  }else{
    echo 'Ocurrio un error en la insercion';
  }
  exit;
}
```

Fig. 11 Implementation of financial logic

The system's customization was enhanced with the option to register new categories, a process described in Figure 12. This feature allows users to tailor the software to their specific needs, increasing its flexibility and usefulness.

The transaction registration process was designed to be intuitive and efficient, as detailed in Figure 13, which demonstrates how users can easily input and manage their income and expenses. Additionally, tools for visualizing organized expenses were created, as documented in Figure 14, providing quick access to financial information.

Figure 13 details the process flow for saving income and expenses into the database. Figure 14 illustrates how users can quickly access relevant financial information.

Fig. 12 Registration of new categories

Fig. 14 Expense list sampling

Fig. 13 Transaction registration

Fig. 15 Transaction or expense registration

Figure 15 shows the interface for registering transactions, while Figure 16 details the process for adding a new category to the system. These figures demonstrate how these tools provide users with flexibility and personalization. Figure 17 illustrates the process for registering products in the system, enabling detailed tracking of goods associated with personal finances.

Fig. 16 Registration of new category

Fig. 17 Registration of new product

Fig. 18 Report of cash and credit expenses

Finally, Figure 18 presents a consolidated report that distinguishes between expenses made in cash and on credit, allowing for a more detailed analysis of personal finances. Figure 18 shows how this tool helps users visualize and better plan their financial flow.

4.3.1. Testing Based on Evaluation Factors

To assess the effectiveness of the software, user tests were conducted focusing on ease of use, utility, and design. The data collected during these tests were based on questions presented in Table 5, and the responses are detailed in Figure 19.

Table 5. Form questions

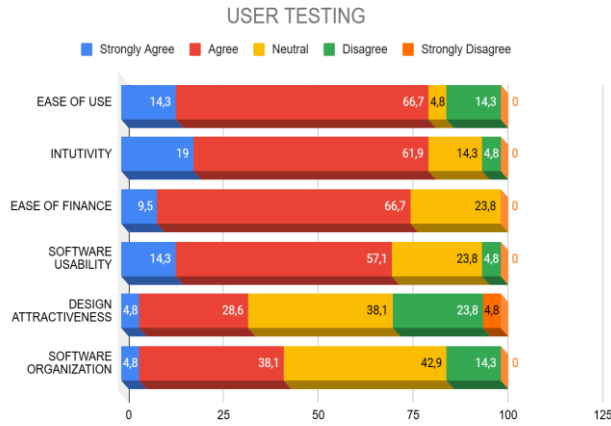| Instruments	
Ítems	**Interrogantes**
Ease of Use	Do you find the software easy to use?
	Are the software's functions intuitive?
Utility	Does the software facilitate your financial management?
	Do you find the software tools useful?
Design	Do you find the software's design attractive?
	Is the software's design well-organized?

Fig. 19 Responses by Item

The analysis is based on the results shown in Figure 19, which consolidates users' responses regarding the different dimensions evaluated in the software. This graph clearly synthesizes participants' perceptions, highlighting both positive aspects and areas for improvement. According to Figure 19, the evaluated dimensions show a general trend of acceptance in terms of ease of use, intuition, and the utility of the software. At the same time, design exhibits greater variability in responses.

The graph indicates that, in terms of ease of use, 14.3% of users strongly agreed, and 66.7% agreed, highlighting a high level of acceptance regarding the software's ease of interaction. Regarding intuition, 19% of participants strongly agreed, and 61.9% agreed, emphasizing that the software's functions are easily understandable for most users. As for utility, 14.3% strongly agreed, and 57.1% agreed, showcasing the effectiveness of the included tools for personal financial management. Dimensions related to design revealed greater variability in responses. For the visual appeal, 4.8% strongly agreed, 28.6% agreed, 38.1% were neutral, and 28.6% disagreed, suggesting significant improvements are needed in the visual design. Regarding the organization of the design, 4.8% strongly agreed, 38.1% agreed, 42.9% were neutral, and 14.3% disagreed, indicating that design elements require adjustments to enhance the user experience. The unified graph, as an analysis tool, efficiently identifies the software's strengths and areas for improvement, consolidating user perceptions into a clear and compact visual presentation. This format facilitates result interpretation, enabling prioritization of necessary adjustments in terms of design and functionality for future software iterations.

5. Discussion
The results obtained in the development and implementation of the personal financial management software confirm that agile methodologies, such as Scrum and Extreme Programming (XP), are key tools for ensuring rapid and adaptable iterations. This aligns with the findings of [5], who emphasized that agile methodologies are particularly effective in addressing dynamic environments, allowing solutions to respond to users' changing needs efficiently.

The high level of acceptance in terms of ease of use and utility is consistent with previous research. [3] and [4] emphasized that simple and accessible interfaces are crucial for improving user experience. This approach is further reinforced by the studies of [6], which found that personalization and advanced data analysis are essential elements for enhancing user satisfaction. However, as noted by [7], the results also indicate that certain groups of users without prior financial experience may face challenges in fully utilizing the functionalities, highlighting the importance of continuing to optimize the design to ensure universal accessibility. In terms of technological innovation, the results confirm the relevance of integrating tools such as Optical Character Recognition (OCR), as suggested by [8]. Additionally, intelligent assistants, as described by [9], present an opportunity to personalize financial recommendations further and improve user interaction. These tools could be implemented in future versions of the software, adding functionalities that optimize the user experience.

On the other hand, variability in perceptions of visual design contrasts with the conclusions of [16] and [17], who emphasized that an attractive and organized design is crucial for fostering broader adoption of financial technologies. Although the developed software includes advanced functionalities, users highlighted the need to improve the aesthetics and organization of the interface, which opens an opportunity for future iterations that prioritize user-centered design. The importance of data security is also relevant in this context. Studies such as [14] emphasize that robust security structures are fundamental for building user trust. Although this study did not specifically evaluate the dimension of security, its relevance is recognized as a critical area to address in the development of financial technology tools.

Finally, the findings related to the software's cross-platform capabilities and scalability support the results of [15], who highlighted that inclusive and adaptable tools have greater potential for technological adoption. Additionally, recent studies such as those by [12] and [13] underline how the integration of machine learning and customizable configurations can significantly enhance user experience and software functionality, areas that could also be explored in future developments. In conclusion, the results of this work not only reaffirm the effectiveness of agile methodologies in software design but also highlight the importance of combining advanced functionalities with an intuitive and accessible design. While significant progress has been made, the identified areas for improvement, such as visual design and data security, open new opportunities for future iterations that optimize the user experience and expand the software's impact on personal financial management.

6. Conclusion

The development and implementation of the personal financial management software demonstrate the feasibility of designing an effective, functional, and user-centered tool by utilizing agile methodologies such as Scrum and Extreme Programming (XP). This approach enabled the integration of key functionalities, including transaction recording, personalized report generation, and expense categorization, ensuring a positive user experience. The results highlight that the software meets high standards in terms of ease of use and utility, facilitating more efficient and informed financial management for users. However, the findings also reveal areas for improvement, such as visual design, which showed variability in user perceptions. This underscores the importance of continuous iterations in design to achieve a more attractive and organized visual experience.

Compared to previous studies, this work validates the relevance of a user-centered approach, emphasizing the need to combine practical functionalities with intuitive interfaces.

Additionally, the agile methodologies employed proved highly effective in ensuring the software's quality and adaptability, corroborating their applicability in similar technological projects.

In terms of contributions, this study not only offers an innovative solution for personal financial management but also paves the way for future research. Incorporating elements such as security and personalization, along with continuous design optimization, could further enhance the software's functionality and acceptance. Moreover, it is recommended to explore new evaluation dimensions, such as the long-term impact of software usage on users' financial planning.

In summary, this project contributes to the financial technology field by creating a practical, adaptable tool aimed at improving financial decision-making. The identified opportunities for improvement provide a clear framework for future iterations and developments, consolidating the potential of technological tools in the efficient management of personal finances.

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