
Web-Based Accounting Information System In Managing Educational Development Donation Payments (A Study At A Vocational High School In Bandung)

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ABSTRACT

This study examines the development and implementation of an accounting information system for managing tuition fee payments in educational institutions. The primary aim of this system is to improve efficiency and precision in the administration of tuition fee payments, minimise manual errors, and deliver more transparent and accurate financial reporting. This system is designed to streamline the recording, monitoring, and reporting of tuition fee payments by leveraging information technology.

The technique employed in the development of this system encompasses needs analysis, system design, software implementation, and testing and assessment. This accounting information system encompasses multiple functions, such as payment registration, transaction verification, payment status monitoring, and automated financial report preparation. The deployment of this system is expected to yield substantial benefits for school administrators, parents, and other stakeholders.

The research findings demonstrate that the implemented accounting information system can decrease administrative time and expenses, enhance data accuracy, and facilitate quicker access to payment information for all stakeholders.

Keywords: Accounting Information Systems, Tuition Payment Management, Administrative Efficiency, Financial Reports, Information Technology

INTRODUCTION

With the rise in student enrolment and the intricacy of financial activities, the demand for a readily available information system intensifies. Different categories of payments, including tuition fees, extracurricular activity fees, uniform expenses, and additional contributions, must be administered with transparency and precision. Discrepancies in the documentation and presentation of financial transactions can result in significant complications, including uncertainty for parents and students, as well as challenges in the school's financial reporting. Consequently, the implementation of a web-based accounting information system presents a pertinent and novel alternative. This system facilitates more precise and effective handling of payment data while also granting enhanced accessibility for all stakeholders, including school personnel and parents.

Accounting Information System

An accounting information system processes data and transactions to furnish users with the necessary information for planning, controlling, and operating a business (Efuntade & Efuntade, 2023; Emadi, 2023)

Administration

Administration, in a specific context, refers to the methodical collection and documentation of

data and information to enable comprehensive access and interrelation of the content. (Riwajanti, 2022; Supriati & Supriatna, 2023)

Educational Development Contribution

Educational support contributions are obligatory monthly fees made by students at school. An agreement between the school committee and the parents collects tuition fees. Tuition payments are designed to enhance the quality of education by funding upgrades in teaching and learning facilities and infrastructure. (Pebriadi et al., 2024)

Cash Receipts

Cash receipts is a system designed to handle transactions related to sources of cash income received by the company (Rahayu & Yulianto, 2023).

Visual Studio Code

Visual Studio Code (VS Code) is a robust and efficient text editor developed by Microsoft for multiple operating systems, including Linux, macOS, and Windows. (Khoerunisa & Supriyati, 2023)

Web

A website comprises a series of interconnected web pages, often housed on a web server accessible by the internet or a local area network (LAN). (Ritchi et al., 2019)

Database

A database is characterised as an organised and integrated collection of data that facilitates rapid manipulation, retrieval, and search capabilities. (Monteiro & Cepêda, 2021)

Laravel

Laravel is a PHP framework distributed under the MIT license, constructed on the MVC (model, view, controller) paradigm (Al-Okaily, 2024)

METHOD

This study's approach comprises several critical steps to guarantee the efficient creation and execution of the accounting information system. A needs analysis is conducted to determine the specific requirements of educational institutions regarding tuition fee management. This study guides the system design, guaranteeing its alignment with the requirements of school administrators and stakeholders. Following the design phase, the programme is executed using suitable technology to enable the necessary functionality for payment registration, transaction verification, and payment status monitoring.

During system development, thorough testing and evaluation are conducted to ensure its dependability and accuracy. This includes evaluating the system's ability to generate automated financial reports and its usability for both school staff and parents. The testing step is crucial for identifying potential faults and refining the system further. The implementation of this accounting information system is expected to

yield substantial benefits, including decreased administrative expenses and time, increased data precision, and greater accessibility to payment information for all stakeholders.

RESULTS and DISCUSSION

SYSTEM ANALYSIS

Running system

Students submit their tuition costs directly to the staff, who subsequently register the payment and annotate the tuition card presented by the student as evidence of payment. All tuition fee information is recorded in a ledger. When a student attempts to make a payment or if discrepancies arise, the staff consults the ledger to verify the student's payment status. This approach lacks time efficiency, particularly when students consistently make late payments, as personnel are unable to ascertain the status of these payments swiftly. Upon reaching capacity, the ledger is archived as a physical document, which frequently results in retrieval delays and the risk of losing critical records when needed.

Use case diagram

A use case diagram comprises actors, use cases, and their interrelations. The use case diagram is crucial for visualising, describing, and documenting the system's behavioural requirements. This explains the actions users can undertake inside the existing system.

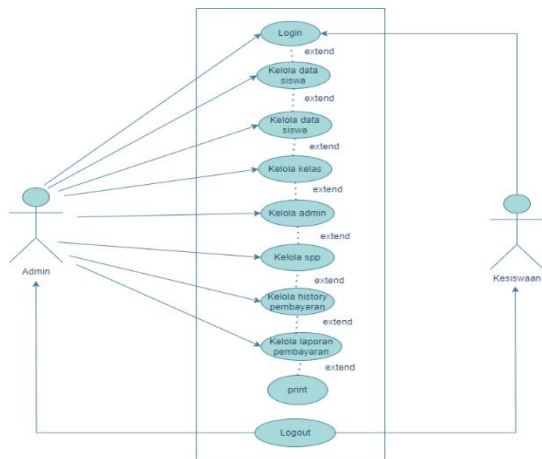


Figure 1. Proposed System Use Case Activity diagram

high school in Bandung.

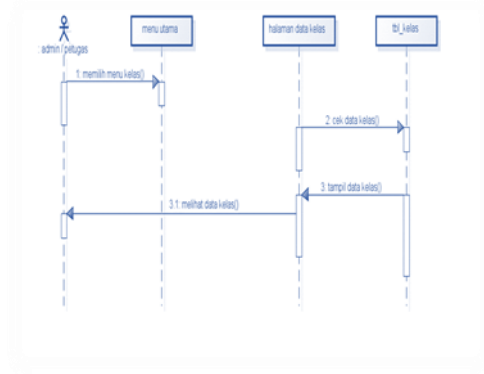


Figure 3. Class Data Sequence Diagram Class Diagram

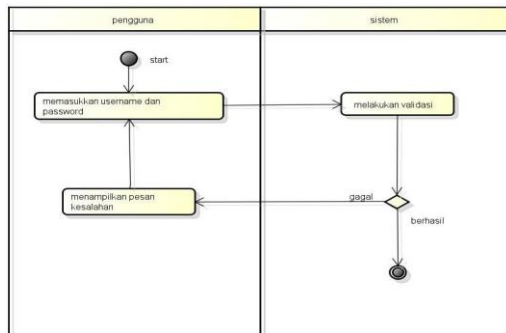


Figure 2. Login Activity Diagram

System design

Sequence diagram

A sequence diagram illustrates an object's output in a use case by detailing the object's lifespan and the messages exchanged between objects. This is a sequence diagram for the Educational Development Contribution payment information system at a vocational

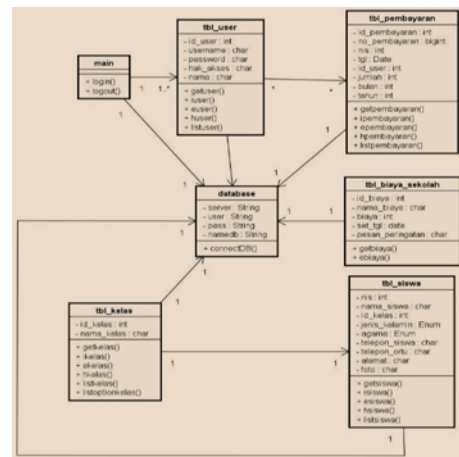


Figure 4. Class Diagram

Menu Structure Design

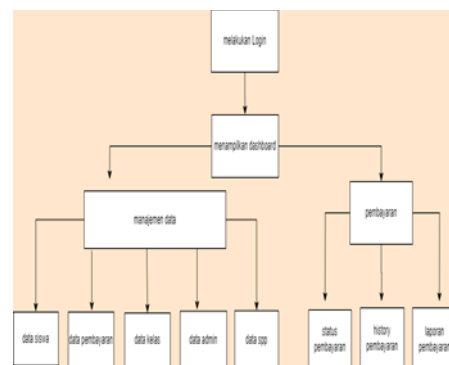


Figure 5. Menu Structure Interface Design

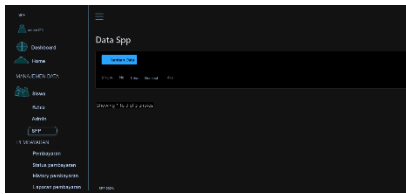


Figure 6. Page Educational Development Contribution

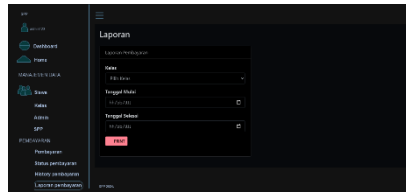


Figure 7. Payment Report

System Implementation

The requirements for the application design serve as the fundamental basis to ensure that the design aligns with the previously defined objectives. The proposed approach encompasses both software and hardware environments.

Hardware Implementation

1. Hardware = Processor, Memory, Mouse, keyboard
2. Spesifikasi = Intel(r) core(tm) i5-2430m cpu @ 2.40ghz 2.40 ghz

Software Implementation

The construction of a web-based accounting information system for educational contributions (SPP) necessitates consideration of both hardware and software requirements to facilitate the constructed system. The requisite software specifications are as follows:

1. Sistem operasi: microsoft windows 2013
2. Database server : mysql, phpmyadmin 8.0.28
3. Browser : mozilla, google chrome
4. Control panel : xampp 3.3

Database implementation

The discourse on the table structure in the database outlines the configuration of the database tables, which are derived from the design outcomes presented in the preceding chapter. This programme comprises a single database featuring multiple tables, including:

1. Users database table

Table Name: users

Information : This table contains user data

#	Nama	Jenis	Pemilihan	Atribut	Tak Termini	Batasan	Komentar	Contoh	Tindakan
1	id	integer(10)	autoincrement	Ya	AUCL				
2	username	varchar(50)	artificial_pk	Ya	AUCL				
3	email	varchar(50)	artificial_pk	Ya	AUCL				
4	email_verified_at	timestamp		Ya	AUCL				
5	password	varchar(50)	artificial_pk	Tidak					
6	two_factor_secret	text	artificial_pk	Ya	AUCL				
7	two_factor_recovery_codes	text	artificial_pk	Ya	AUCL				
8	remember_token	varchar(100)	artificial_pk	Ya	AUCL				
9	created_at	timestamp		Ya	AUCL				
10	updated_at	timestamp		Ya	AUCL				

Figure 8. Users Data Table

2. Educational Development Contributions database table

Table name: Educational Development Contributions

Information : This table contains data on educational development contributions.

#	Nama	Jenis	Persyaratan	Atribut	Tak Terhima	Batasan	Komentar	Ekstensi	Tindakan
1	id	bigint(20)		UNSIGNED	Ya	Tidak ada		AUTO_INCREMENT	Ubat Hapus Lampas
2	tahun	varchar(30)	utf8mb4_unicode_ci	Ya	NULL				Ubat Hapus Lampas
3	nominal	varchar(30)	utf8mb4_unicode_ci	Ya	NULL				Ubat Hapus Lampas
4	created_at	timestamp		Ya	NULL				Ubat Hapus Lampas
5	updated_at	timestamp		Ya	NULL				Ubat Hapus Lampas

☐ Filtrir
 ☐ Sema
 ☐ Deny
 ☐ p/kan
 ☐ Ajah
 [Ubat](#)
[Hapus](#)
[Umat](#)
[Link](#)
[Index](#)
[Spesial](#)
[Taka penuh](#)

Figure 9. Table of Educational Development Contribution Data

3. Student Database Table

Table name: Student

Information : This table contains student data

#	Indicator label	Sample frequency	Indicator	Property	Initial Value	Default	Known	Units	Indicator
1	1. Age	age(yr)	continuous	Age	years	18	NA	Age	years
2	2. Age	age(yr)	continuous	Age	years	18	NA	Age	years
3	3. Age	age(yr)	continuous	Age	years	18	NA	Age	years
4	4. Age	age(yr)	continuous	Age	years	18	NA	Age	years
5	5. Age	age(yr)	continuous	Age	years	18	NA	Age	years
6	6. Age	age(yr)	continuous	Age	years	18	NA	Age	years
7	7. Age	age(yr)	continuous	Age	years	18	NA	Age	years
8	8. Age	age(yr)	continuous	Age	years	18	NA	Age	years
9	9. Age	age(yr)	continuous	Age	years	18	NA	Age	years
10	10. Age	age(yr)	continuous	Age	years	18	NA	Age	years
11	11. Age	age(yr)	continuous	Age	years	18	NA	Age	years
12	12. Age	age(yr)	continuous	Age	years	18	NA	Age	years
13	13. Age	age(yr)	continuous	Age	years	18	NA	Age	years
14	14. Age	age(yr)	continuous	Age	years	18	NA	Age	years
15	15. Age	age(yr)	continuous	Age	years	18	NA	Age	years
16	16. Age	age(yr)	continuous	Age	years	18	NA	Age	years
17	17. Age	age(yr)	continuous	Age	years	18	NA	Age	years
18	18. Age	age(yr)	continuous	Age	years	18	NA	Age	years
19	19. Age	age(yr)	continuous	Age	years	18	NA	Age	years
20	20. Age	age(yr)	continuous	Age	years	18	NA	Age	years
21	21. Age	age(yr)	continuous	Age	years	18	NA	Age	years
22	22. Age	age(yr)	continuous	Age	years	18	NA	Age	years
23	23. Age	age(yr)	continuous	Age	years	18	NA	Age	years
24	24. Age	age(yr)	continuous	Age	years	18	NA	Age	years
25	25. Age	age(yr)	continuous	Age	years	18	NA	Age	years
26	26. Age	age(yr)	continuous	Age	years	18	NA	Age	years
27	27. Age	age(yr)	continuous	Age	years	18	NA	Age	years
28	28. Age	age(yr)	continuous	Age	years	18	NA	Age	years
29	29. Age	age(yr)	continuous	Age	years	18	NA	Age	years
30	30. Age	age(yr)	continuous	Age	years	18	NA	Age	years
31	31. Age	age(yr)	continuous	Age	years	18	NA	Age	years
32	32. Age	age(yr)	continuous	Age	years	18	NA	Age	years
33	33. Age	age(yr)	continuous	Age	years	18	NA	Age	years
34	34. Age	age(yr)	continuous	Age	years	18	NA	Age	years
35	35. Age	age(yr)	continuous	Age	years	18	NA	Age	years
36	36. Age	age(yr)	continuous	Age	years	18	NA	Age	years
37	37. Age	age(yr)	continuous	Age	years	18	NA	Age	years
38	38. Age	age(yr)	continuous	Age	years	18	NA	Age	years
39	39. Age	age(yr)	continuous	Age	years	18	NA	Age	years
40	40. Age	age(yr)	continuous	Age	years	18	NA	Age	years
41	41. Age	age(yr)	continuous	Age	years	18	NA	Age	years
42	42. Age	age(yr)	continuous	Age	years	18	NA	Age	years
43	43. Age	age(yr)	continuous	Age	years	18	NA	Age	years
44	44. Age	age(yr)	continuous	Age	years	18	NA	Age	years
45	45. Age	age(yr)	continuous	Age	years	18	NA	Age	years
46	4								

Figure 10. Student Data Table

4. Officer database table

Table name : officer

Information : This table contains officer data

#	Nama	Jenis	Pengertian	Atribut	Tipe Default	Komentar	Eksis	Tindakan
1	id_kategori	bigint(20)		UNSIGNED	Not Null		AUTO_INCREMENT	Ubah
2	user_id	bigint(20)		UNSIGNED	Not Null			Ubah
3	kode_produk	varchar(10)	unikfilid_produk	Yes	NULL			Ubah
4	nama_produk	varchar(10)	unikfilid_produk	Yes	NULL			Ubah
5	jenis_produk	varchar(10)	unikfilid_produk	Yes	NULL			Ubah
6	created_at	timestamp		Yes	NULL			Ubah
7	updated_at	timestamp		Yes	NULL			Ubah

Figure 11. Officer Data Table

5. Payment Database Table

Table name : payment

Information : This table contains
payment data

#	Nama	Jenis	Propertitas	Attribut	Tak Terikat	Domain	Konstante	Ekstensi	Terdistribusi
1	id	integer		NOT NULL	Yes	1..10	ALFO_NOSISIT	Jah	Hasil Log
2	kode_pendampingan	varchar(5)	default_pendampingan	Yes	NO			Jah	Hasil Log
3	pendampingan	integer	default_pendampingan	Yes	NO			Jah	Hasil Log
4	siswa_id	integer		NOT NULL	Yes	1..10		Jah	Hasil Log
5	id	varchar(5)	default_pendampingan	Yes	NO			Jah	Hasil Log
6	tergagal_bayar	varchar(5)	default_pendampingan	Yes	NO			Jah	Hasil Log
7	bayar_bayar	varchar(5)	default_pendampingan	Yes	NO			Jah	Hasil Log
8	bayar_bayar	varchar(5)	default_pendampingan	Yes	NO			Jah	Hasil Log
9	jumlah_bayar	int(1)		Yes	NO			Jah	Hasil Log
10	is_canceled	timestamp		Yes	NO			Jah	Hasil Log
11	updated_at	timestamp		Yes	NO			Jah	Hasil Log

Figure 12. Payment Data Table

6. Class Database Table

Table name : class

Keterangan : This table contains class data

Login page view

To initiate a programme, you must first authenticate by inputting your username and password. The login form serves as the system's initial interface, enabling access to the system and facilitating progression to the subsequent phase.

Figure 13. Login Page Display

The screenshot displays the Microsoft Dynamics CRM 2013 dashboard. The top navigation bar includes the user profile 'ash@CRM2013' and the 'Dashboard' tab. The main area features four large tiles representing key metrics: '2 Sales' (blue), '3 Leads' (red), '5 Opportunities' (green), and '1 Accounts' (yellow). Each tile has a corresponding icon and a 'View all' link. Below the tiles is a 'Sales' chart showing a bar chart with a red bar at 1.0 and a blue bar at 2.0. The left sidebar contains navigation links for Home, Recent Activities, Sales, Leads, Accounts, CRM, and Productivity.

Figure 14. Dashboard Page View

The screenshot shows the SPP web application. The left sidebar has a dark theme with a navigation menu. The 'Home' option is highlighted in blue. The main content area is light gray and displays the word 'Home' at the top, followed by a large 'Hello, Administrator!' message and the subtitle 'Selamat datang di WEB SPP'.

Figure 15. Home Page View

No	Nama Siswa	NISN	NIS	Kelas	Jenis Kelamin	No Telp	Aksi
1	Nisa Khyra Chandra	0000010	0000001	X RPL 1	Perempuan	081990000000	Detail
2	Dafa	0000006	0000002	X RPL 2	Perempuan	081990000000	Detail

Figure 16. Student page view

No	Nama Kelas	Deskripsi
1	X RPL 1	Berprestasi dan Berprestasi
2	X RPL 2	Berprestasi dan Berprestasi

Figure 17. Class Page View

No	Username	Nama Pengguna	Aksi
1	admin221	Administrator	Detail

Figure 18. Admin Page View

No	Tahun	Nominal	Aksi
1	2020	1000000	Detail
2	2021	1000000	Detail
3	2022	1000000	Detail

Figure 19. Educational Development Donation Page View

No	Tahun	Nominal	Aksi
1	2020	1000000	Detail
2	2021	1000000	Detail
3	2022	1000000	Detail

Figure 20. Payment Page View

No	Nama Siswa	NISN	NIS	Kelas	Jenis Kelamin	Aksi
1	Nisa Khyra Chandra	0000010	0000001	X RPL 1	Perempuan	Detail
2	Dafa	0000006	0000002	X RPL 2	Perempuan	Detail

Figure 21. Payment Status Page View

No	Nama Siswa	Kelas	NISN	NIS	Tanggal Bayar	Nama Pengguna	Bulan	Tahun	Nominal	Aksi
1	Dafa	X RPL 2	0000006	0000002	20-07-2021	Administrator	Januari	2021	Rp.175000	Detail
2	Dafa	X RPL 2	0000006	0000002	20-07-2021	Administrator	Februari	2021	Rp.175000	Detail
3	Dafa	X RPL 2	0000006	0000002	20-07-2021	Administrator	Maret	2021	Rp.175000	Detail
4	Dafa	X RPL 2	0000006	0000002	20-07-2021	Administrator	April	2021	Rp.175000	Detail
5	Dafa	X RPL 2	0000006	0000002	20-07-2021	Administrator	Mai	2021	Rp.175000	Detail

Figure 22. Display The Payment History Page

Figure 23. Payment report page display

CONCLUSION

The web-based accounting information system for managing SPP (educational contributions) can improve efficiency, transparency, and accuracy in payment management. This system facilitates expedited and simplified access for users, including students, parents, and school administration, to oversee and administer SPP payments in real-time.

This system, equipped with automation and reporting capabilities, mitigates the risk of human mistakes, accelerates the data reconciliation process, and delivers more precise and prompt financial information.

Below are a few recommendations: Consistent maintenance of both software and hardware is essential for optimal performance. Implementing data backups is crucial to avert

data loss in the event of software or hardware malfunctions. Furthermore, supervision by authorised individuals is essential to prevent any data manipulation.

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