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Business Process Modeling of a Web-Based Learning System for Annual Tax Return Reporting Using the Coretax Administration System Model

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Abstract: The application of information technology in tax education is a strategic effort to enhance students' understanding and skills in tax reporting. This study aims to design a Business Process Model using the Business Process Model and Notation (BPMN) method for a web-based learning system of Annual Tax Return (SPT) reporting, based on the Coretax Administration System (CTAS) model, and implemented at the Tax Laboratory of Politeknik Negeri Malang. The research employs a descriptive qualitative method, with data collected through literature review, user needs analysis, and business process modeling. The resulting BPMN diagrams successfully simulate key components of real tax reporting processes, including taxpayer registration, digital certificate requests, and the submission of both individual and corporate SPTs. These business process models enable students to better understand and visualize digital tax workflows, thereby bridging the gap between theoretical concepts and practical systems. The models are expected to support the modernization of tax education in vocational higher education institutions.

Keywords: Learning Application, Coretax Administration System, Business Process Model and Notation, Tax Return Reporting, Tax Education.

INTRODUCTION

Taxation plays an important role in increasing state revenue, which heavily relies on taxpayer compliance levels. In Indonesia, educational and facilitation efforts are needed to enhance taxpayers' awareness of the importance of fulfilling their obligations and its impact on the national economy (Lestari et al., 2022). One initiative expected to support this effort is the implementation of the Coretax Administration System (CTAS) launched by the Directorate General of Taxes (DJP). Tax administration reforms in Indonesia began in 1983 and have been continuously improved. Good tax administration is crucial for the success of tax policy, aimed at increasing voluntary compliance, public trust, and the integrity of tax authorities. In its latest

effort, DJP introduced CTAS to replace the Tax Information System (SIDJP) to optimize tax revenue and compliance (Arianty, 2024).

The Coretax Administration System (CTAS) is a service system of the Directorate General of Tax that supports the modernization of tax administration through the integration of processes such as registration, reporting, payment, auditing, and tax collection, and enhances taxpayer compliance with cutting-edge technology (Yosias et al., 2025). With systems like CTAS, in addition to expediting administrative processes, it can also be an effort to improve taxpayer compliance. However, the success of CTAS implementation does not solely depend on technological infrastructure, but also on the understanding and awareness of taxpayers. Therefore, tax education becomes crucial, whether through formal and non-formal education channels that aim to increase tax compliance. The more taxpayers know about their tax obligations, the more likely they are to comply because they better understand their responsibilities.ka. Therefore, taxpayers can be motivated to fulfill their tax obligations more accurately and on time through effective tax education (Agun et al., 2022).

According to information from the Higher Education Database (PDDikti) of Indonesia, there are 10 higher education institutions specifically for taxation and 30 study programs related to tax management and accounting. This highlights the importance of education in the field of taxation. Furthermore, the modernization of the tax administration system, which is the second component affecting taxpayer compliance levels, is also increasingly reinforced by various innovations (Ceme, 2021). In this digital era, the need for information technology is becoming more urgent, both in the field of taxation and education. The abundance of data and rapid digitalization requires society to develop solutions that can facilitate work and obtain information quickly and accurately (Alsyouf et al., 2021; Saad, 2023).

This digital technology also has a significant impact on the education sector, where learning methods need to be more efficient and allow students to be more active in absorbing and applying the knowledge they learn. For example, technology-based and simulation-based learning methods, with computers as media, have proven effective in increasing active participation and mastery of material by students, including in the field of taxation. The application of this approach supports the achievement of social and economic goals through the improvement of education quality and national tax revenue (Efriansyah, 2022; Suprayogi et al., 2021). Another example can be seen in community service activities that successfully enhance students' understanding and awareness of tax regulations, tax digitization, and new policies such as the use of the National Identity Number (NIK) as the Taxpayer Identification Number (NPWP) and the implementation of the Core Tax Administration System (CTAS). The evaluation results show a significant increase in participants' understanding, from 45% to 85% after attending the training (Windarsari et al., 2025).

Students in the Accounting Department of Malang State Polytechnic are still experiencing a gap between the tax theory they learn and the practices in the workplace, especially in the reporting of the Annual Individual Tax Return, which is caused by the unavailability of web-based learning media resembling modern systems like CoreTax, limited access to NPWP data, still traditional learning methods, and limited teaching materials. To bridge this gap, the development of web-based learning media that adopts the CoreTax system model in a simulation environment is needed. In order for this application development to proceed systematically and efficiently, business process design using Business Process Model and Notation (BPMN) is required, which can visually and structurally depict the application's workflow.

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Various previous studies have developed tax applications with diverse approaches and targets to improve understanding and efficiency in tax reporting, such as the design of an e-SPT 1771 simulation based on Microsoft Excel as a learning medium at Bosowa Polytechnic, which has been proven to be suitable for use based on ISO 9126 standards (Sopyan et al., 2022), the development of an offline e-filing application at SMK Negeri 1 Bandar Lampung using the waterfall method that supports user data processing and annual tax reporting (Efriansyah, 2022), as well as the creation of the web application "E-Bupot Bantu Pajak Edukasi Version" at Batam State Polytechnic which has been validated to assist lecturers and students in understanding the tax reporting process (Sartika et al., 2024). The novelty of this research lies in the development of a BPMN design for a web-based annual tax return reporting learning application that adopts the CoreTax model from the Directorate General of Taxes, in order to provide a tax reporting simulation resembling real conditions for students at the Tax Laboratory of Malang State Polytechnic.

METHOD

This research is a descriptive qualitative study that describes the objective conditions based on the facts found by the researchers in the field (Firdaus, 2022; Sumarsono et al., 2023). Data collection was conducted through literature study, user needs analysis, and business process modeling. Modeling using BPMN diagrams can depict the business processes of the website-based Annual Notification Reporting learning application. The structured and detailed steps of the research method are as follows.

RESULTS AND DISCUSSION

The E-Taxzone Polinema application is designed as a web-based tax learning medium that simulates the actual tax reporting system using the Coretax Administration System (CTAS) model. To illustrate the workflow of the system in a structured manner, business process modeling is carried out using Business Process Model and Notation (BPMN). BPMN in this application includes several main processes, among others:

Registration of NPWP for Individual Taxpayers

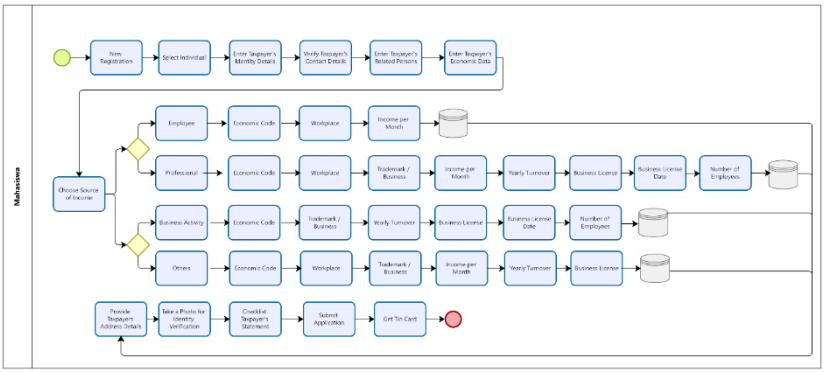


Figure 1. BPMN Registration of Individual Taxpayer Identification Number

The BPMN flow for registering an individual NPWP in the E-Taxzone Polinema system is illustrated through the following stages:

1. Students access the portal and select the “Register Here” menu to create a new account.
2. If they already have an account, they log in using their user ID (full name) and password (student ID).
3. Select taxpayer type as an Individual.
4. Confirm ownership of NIK.
5. Fill in personal identity, including NIK, name, place/date of birth, gender, and marital status.
6. Verify email and mobile number.
7. Optional: Add related parties (spouse or child).
8. Fill in economic data: method and bookkeeping period.
9. Select primary source of income: Employee, Professional, Business Activities, or Others, then complete the details for each.
10. Fill in the domicile address and identity.
11. Upload a facial photo for identity verification.
12. Check the compliance statement as a taxpayer.
13. Click Submit Application to send the request.

Registration of Taxpayer Identification Number (NPWP) for Corporate Taxpayers

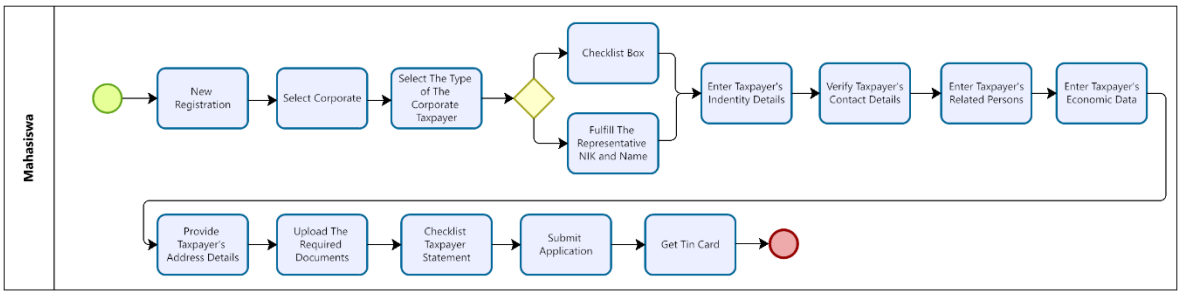


Figure 2. BPMN Registration of Corporate Tax Identification Number

The BPMN flow for registering a corporate NPWP in the E-Taxzone Polinema system is described through the following stages:

1. Access the portal and click 'Register Here'.
2. Select the type of taxpayer as a Corporate.
3. Choose the category of the entity: PT, CV, foundation, cooperative, etc.
4. If the registration is submitted by an authorized representative, fill in the representative's details (NIK/NPWP and name).
5. Complete the entity's identity: establishment decree, name, date of establishment, notary, capital, etc.
6. Verify email, mobile number, telephone, and fax (via OTP).
7. Add related parties, with at least 1 responsible person (PIC).
8. Fill in economic data: KLU, trademark, revenue, method, and accounting period.
9. Complete the domicile address and business activity location.
10. Upload supporting documents such as the deed of establishment and decree of validation.
11. Check the statement of data accuracy.
12. Click Submit Application to send the application.
13. The system issues the NPWP and is ready for download.

Application for Digital Certificate

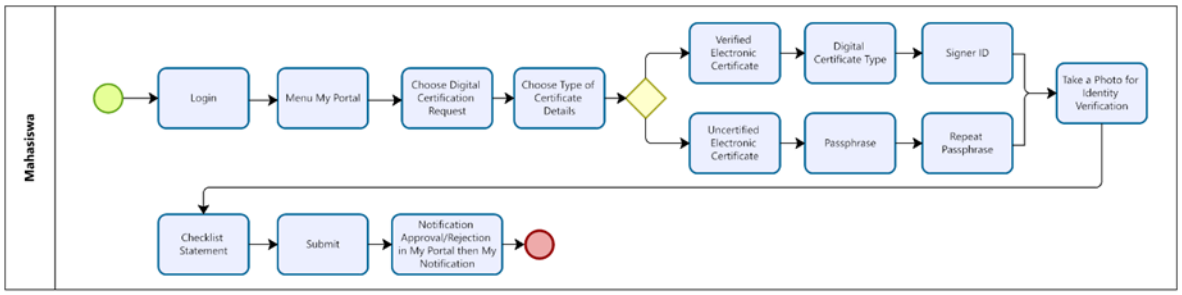


Figure 3. BPMN Digital Certificate Application

The BPMN flow for the digital certificate application in the E-Taxzone Polinema system is illustrated through the following steps:

1. Log in to the portal using NIK/NPWP and password.
2. Enter the 'Digital Certificate Application' menu.
3. Select the type of application: Electronic Certificate or DJP Authorization Code.
4. If choosing an electronic certificate: select the provider, fill in the Signer ID.
5. If choosing the authorization code: fill in the passphrase and repeat.
6. Upload a facial photo for Dukcapil verification.
7. Check the statement of data accuracy.
8. Click Submit to send the application.
9. The system sends a notification of approval/rejection in the 'Notification' menu.

Reporting of the Annual Personal Income Tax Return

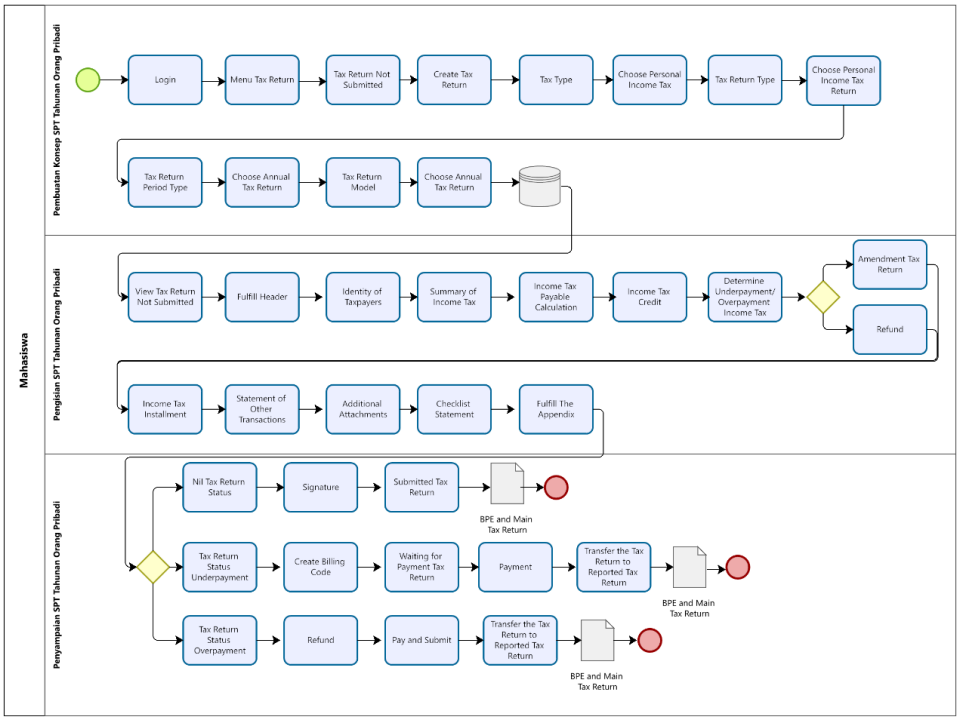


Figure 4. BPMN Reporting of the Annual Individual Tax Notification Letter

The BPMN flow for reporting the annual personal income tax notification in the E-Taxzone Polinema system is illustrated through the following stages:

1. Log in to the system, select the "Tax Return" menu, then click "Create Tax Return".

2. Choose the type of tax: Individual Income Tax, annual, normal/correction.
3. Complete the data:
   a. Header: Tax year, method, source of income.
   b. Identity: NIK, email, etc.
   c. Income summary and tax calculation.
   d. Tax credits and status of over/under payment.
4. If overpayment: fill out the refund application.
5. If underpayment: the system creates a billing code, make the payment.
6. Upload supporting documents: financial reports, proof of deduction, etc.
7. Sign and click Submit Tax Return.
8. The system issues an Electronic Receipt (BPE).

Reporting of the Annual Notification Letter of the Agency

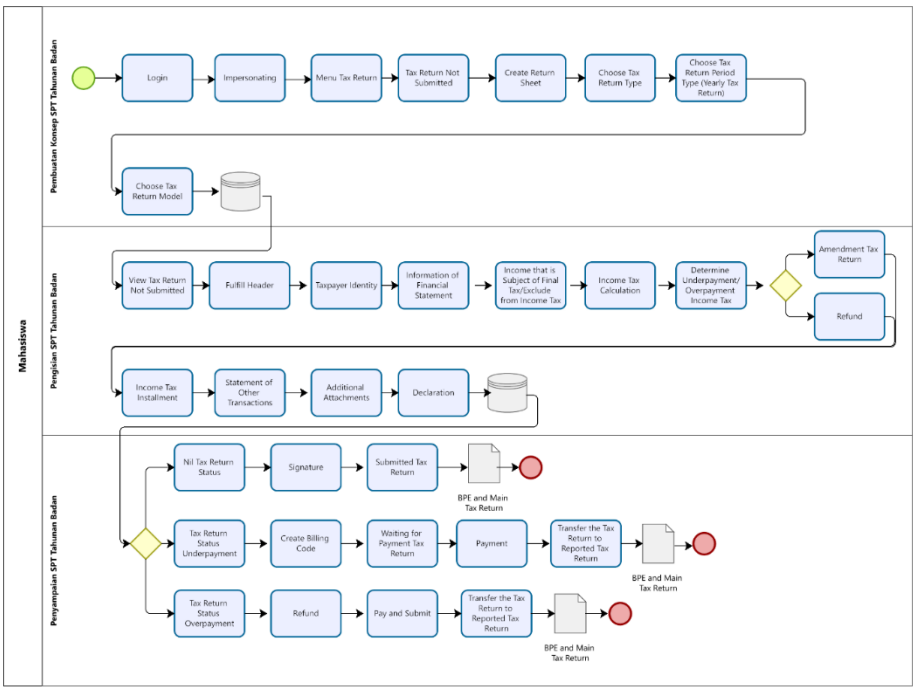


Figure 5. BPMN Reporting of the Annual Notification Letter of the Agency

The BPMN flow for reporting the annual notification letter of the entity in the E-Taxzone Polinema system is illustrated through the following steps:

1. Log in as an entity account (impersonating).
2. Go to the "Tax Return Not Submitted" menu, click "Create Return Sheet".
3. Select tax type: Corporate Income Tax in Rupiah/Dollar, annual/partial, normal/correction.
4. Complete:
   a. Header: Year, bookkeeping method.
   b. Entity identity.
   c. Financial reports, final income, and non-taxable income.
   d. Calculation of Corporate Income Tax and reductions.
5. Upload supporting documents: financial reports, shareholder list, etc.
6. Sign and click Pay and Submit.
7. The system issues a BPE and records the report of the annual notification letter.

Management of the E-Taxzone Dashboard

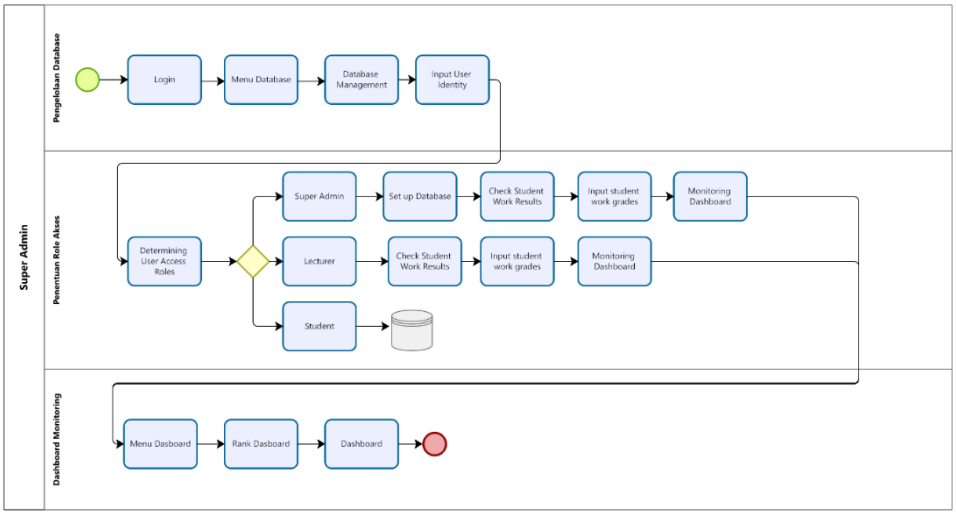


Figure 6. BPMN Management of E-Taxzone Dashboard

The BPMN flow for managing the dashboard within the E-Taxzone Polinema system is described through the following stages:

1. The user logs into the system using their respective accounts.
2. Users with access can input data for students and lecturers: NIM/NIP, name, program, class, and role.
3. The system determines the roles: Super Admin (lecturers and department) and Operator (students/lecturers inputting data).
4. Lecturers review the simulation results inputted by students.
5. The simulation scores are entered into the grade database.
6. The system displays the class ranking dashboard based on the highest scores.

The BPMN design developed in this application has gone through a limited validation process involving expert lecturers in taxation and information systems from Malang State Polytechnic. Validators were asked to evaluate the suitability of the BPMN flow with the applicable SPT reporting procedures in the DJP system and the user's understanding of the presented simulation. The validation results show that respondents consider the process flow to be quite representative and easy to understand.

The uniqueness of this application lies in the implementation of the BPMN approach to simulate the SPT reporting process comprehensively, starting from the NPWP registration stage to the issuance of the Electronic Receipt (BPE), within a single integrated web-based learning system. Unlike previous studies that generally only focused on one type of reporting such as Excel-based SPT 1771 or offline e-filing applications, this application integrates various main services of the DJP based on Coretax into a complete and realistic learning scenario. This approach is still rarely found in tax education studies in Indonesia, especially in vocational education institutions, thus providing an innovative contribution to the development of a more applicable and contextual digital learning model.

CONCLUSION

The development of a web-based annual tax return (SPT) learning application using the Coretax Administration System (CTAS) model implemented at the Tax Laboratory of Malang State Polytechnic aims to bridge the gap between tax theory and practice in higher education.

This application is designed to resemble a real tax reporting system, allowing students to gain simulated experience in fulfilling tax obligations digitally.

By using the Business Process Model and Notation (BPMN) approach, the flow of the learning process can be visualized systematically and structurally, starting from NPWP registration, digital certificate application, to Individual and Corporate Tax Return reporting. The use of BPMN facilitates business process design and allows the learning process to run more effectively and in accordance with the applicable tax administration system standards in Indonesia. Through this application, students not only gain conceptual understanding but also practical skills in operating modern tax reporting systems, which is expected to enhance their readiness to face the job market in the fields of taxation and accounting.

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