

Billing System Based on Macro Scheduler at PT Petrokimia Gresik

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Abstract

PT Petrokimia Gresik continues to make innovations in supporting various kinds of work in each department to each part. The billing department in support of each job uses the macro scheduler system. Macro Scheduler is a software for automating various tasks on a computer. In the billing section Macro Scheduler is used for speed and also accuracy in the work. Starting from bookkeeping with thousands of data and also printing sales invoices in the form of soft files. This research was conducted to conduct experiments by creating a macro scheduler robot in the process of sending sales invoices to distributors which aims for time efficiency and also accuracy in the delivery process. The research methods used are problem analysis, system needs analysis, system design, implementation, testing and application. The results of this study related to the manufacture of macro scheduler robots are the time efficiency from before the existence of the robot took one month in the delivery process now only takes one week. So that there is no delivery request from the distributor regarding delays in sending sales invoices. In addition, the accuracy of sending sales invoices with emails belonging to distributors.

Keywords: Macro scheduler; Sales invoice; Time efficiency; Accuracy.

1. Introduction

Globalization is entering a new era, namely the Industrial Revolution 4.0. This era resulted in changes in the way humans think (Banu and Umi, 2019). The impact of changing the way humans think is one of them, developments in the business environment that occur dynamically so that it can affect performance in every company (Sri, 2012). A company is required to continue to innovate to keep up with the times, if not so, the company can eventually be replaced by a new, more innovative company.

Sales and financial system innovation is one of the main factors that can affect the survival of a company. There are innovations in sales and finance that will affect company performance (Rahmasari, 2021). One company that continues to innovate is PT Petrokimia Gresik. PT Petrokimia Gresik is one of the largest fertilizer companies in Indonesia which continues to innovate to support every job. Innovation at PT Petrokimia Gresik is something that continues to be improved to support production and also the company's finances (Petrokimia Gresik, 2021). One of the processes of business activities that continues to be carried out is innovation at PT Petrokimia Gresik, namely the Ministry of Finance. The finance department is divided into three, namely, billing, treasury, and guarantees (taxes and insurance).

The problems in the billing department are bookkeeping with thousands of data, printing sales invoices, and sending sales invoices with hundreds of distributors. Every month the billing department prints sales invoices in the form of *soft files* in *Portable Document Format* (PDF) format from hundreds of distributors and also sends sales invoices to each customer's email. The billing team innovates by creating a *macro scheduler* in printing sales invoices. So that printing sales invoices in the form of *soft files* in PDF format can be done automatically from hundreds of distributors. One of the problems that has no innovation or efficiency is the process of sending sales invoices to email distributors, which is currently being done manually one by one.

Problems that arise from the process of sending sales invoices, namely, the length of time for delivery and errors in sending sales invoices. The first is, the process of sending sales invoices which takes one month or more, so sometimes sales invoices are often late for delivery to distributors. As a result of the delay in delivery, the distributors sent an email to the billing team to immediately send a sales invoice. Second, there was an error sending a sales invoice that didn't match the email name due to a *human error*. For example, a sales invoice for PT. A sent to PT. B.

Based on these problems, the researcher conducted an experiment, namely by making a *macro scheduler* so that it can send sales invoices to distributors automatically. The purpose of making a *macro scheduler* is first, for time efficiency in sending sales invoices and so that there are no delays in sending sales invoices to distributors. Second, the accuracy in the process of sending sales invoices so that there are no mistakes sent to other distributor email addresses.

2. Literature Review

Receivables Collection System Receivables

Collection system is a procedure created to support the process of notifying or reminding the collector to pay the debt to the collector that arises due to sales on credit or is called a claim on goods and services.

Collection of accounts receivable on credit sales is carried out in several ways, including: a) functions related to the system of collecting receivables on the sale of goods and services on credit, b) Documents required in the receivables collection system, and c) Companies in the receivables collection system are carried out in accordance with with existing procedures (Mulyadi, 2016)

Macro Scheduler

Macro Scheduler is a powerful automation tool that allows building routines to automate various tasks on the computer. *Macro Scheduler* has more than 250 commands that can be used to control other applications and windows. *Macro Scheduler* offers a number of different technologies that allow each process to be automated. Whatever technology is used by the application, the *macro scheduler* can automate it (MJT Net, 2019).

3. Research Methods

The research methods used in solving this problem is the first stage, problem analysis. At this stage a discussion is held with the billing team regarding the problems that must be immediately found a solution. By raising the issue of sending sales invoices in bulk. The second stage, analysis of system requirements. At this stage, an analysis of the needs contained in the *macro scheduler* which originates from the problem analysis and then makes what is needed.

The third stage, system design. After conducting a needs analysis, the next step is to design the existing system in the *macro scheduler*. The fourth stage, implementation. Carry out the process of writing into program code using *script* by generating *hotkeys*. The fifth stage, testing. This stage is carried out to test the results of the implementation, which is tested by the billing team. The final stage is application. At this stage, after testing and correcting the *script*, it can be applied to work.

4. Results and Discussion

From the explanation of the previous research method, there were several stages carried out, as follows:

Problem Analysis The

First stage is to analyze the problems that exist in the billing section. One of the problems that occurs is sending sales invoices manually. Petrokimia Gresik has hundreds of distributors consisting of hundreds of files also sent.

Table 1. Number of Sales Invoice Files

	Januari	Februari	Maret	April	Mei
Faktur Penjualan Distributor (Financing)	123 File	134 File	132 File	130 File	132 File
Faktur Penjualan (Down Payment)	735 File	758 File	774 File	802 File	783 File
Total	858 File	892 File	906 File	932 File	915 File

Source: Data Amount of Sales Invoice Delivery The

delivery of sales invoices raises problems, namely the delivery of sales invoices which takes a very long time, there is a delay in sending sales invoices so the distributor sends an email requesting a sales invoice to the billing department to immediately send a sales invoice, and also occurs human error, namely wrong delivery sales invoice that does not match the distributor's email address. The solution to this problem is to create a *macro scheduler* for sending sales invoices in bulk.

System Requirements Analysis

After analyzing these problems, then perform a system requirements analysis. Based on these problems, what is needed in making a *macro scheduler* is the design of *macro scheduler* and the design of the distributor data in the form of excel.

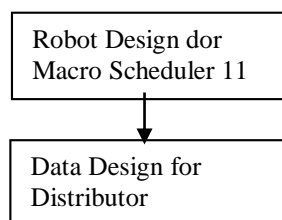


Figure 1. Flow of the Macro Scheduler 11 Making Process
 Source: Data Processed by the Author

System Design

After analyzing the needs of the system, then create a system design. In the process of making an automatic shipping macro scheduler robot, there are 2 designs that are carried out, namely the macro scheduler 11 robot design and the distributor data design.

Design of Robot Macro Scheduler 11

Robot *macro scheduler* 11 is made to automate email sending automatically. The steps for planning the application of making a *macro scheduler* 11 robot are first, zimbra is opened automatically via the robot after we press the *Hotkey the macros*. Second, the robot runs to enter email names based on the order in the distributor data. Third, after the email name is entered, the robot enters the zimbra subject based on the subject in excel. Fourth, after the subject is entered, the robot then enters *the attached file*.

Fifth, *the attach file* is searched based on the distributor code in excel and searched on the desktop. Sixth, after the attachment is entered, *sent* automatically and the data in excel that has been sent will be deleted automatically as well. Finally, when finished, return to the initial process.

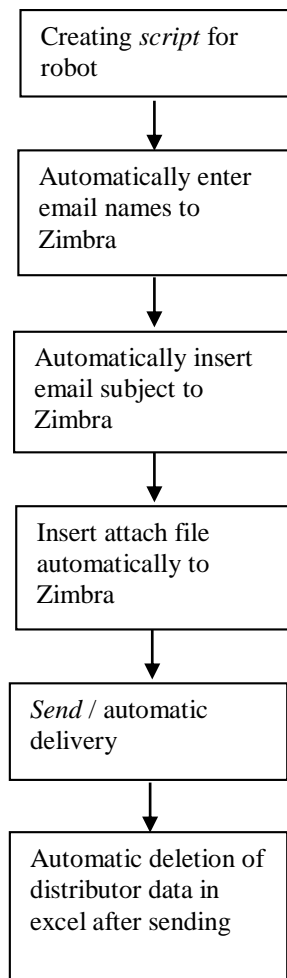


Figure 2. Flow of the Design Process for Making a Macro Scheduler Robot 11

Source: Data Processed by the Author

ID	Nama	Email
1000000001	BORNEO SEVENTEEN ENTERPRISE	newspaper@gmail.com
1000000002	EV SURTA KENAGA	suratkenaga.002@gmail.com
1000000003	PT SURTA KENAGA	surta@surta.co.id
1000000004	BORNEO UNIT DESA IBU MELUD	ibumelud@ibumelud.com
1000000005	BORNEO UNIT DESA MADAGARA	madagara@borneo.com
1000000006	BORNEO UNIT DESA EUTA NIAGA	euta_niaga_c@ibuy.com
1000000007	BORNEO UNIT DESA	ibuy.com@gmail.com
1000000008	BORNEO UNIT DESA BAHAGIA	ibuybahagia@ibuy.com
1000000009	BORNEO UNIT DESA IBU BANGSA	ibu_bangsa@ibuy.com
1000000010	BORNEO UNIT DESA MANASSARI	manassariborneo@gmail.com
1000000011	BORNEO UNIT DESA TEBU MANASSARI	tebuborneo@gmail.com
1000000012	PT SURTA BUKITA YUDHA	caroline.poganes@gmail.com
1000000013	BOI ALLEGRA	boi@boi.com
1000000014	BORNEO UNIT DESA MINIBEL	ibuy@ibuy.com
1000000015	BORNEO UNIT DESA	ibuy@ibuy.com
1000000016	BORNEO UNIT DESA	ibuy@ibuy.com
1000000017	PT PUSKAS	puskas@puskas.com
1000000018	PT PUSKAS	puskas@puskas.com
1000000019	PT PUSKAS	puskas@puskas.com
1000000020	PT PUSKAS	puskas@puskas.com
1000000021	PT PUSKAS	puskas@puskas.com
1000000022	PT PUSKAS	puskas@puskas.com
1000000023	PT PUSKAS	puskas@puskas.com
1000000024	PT PUSKAS	puskas@puskas.com
1000000025	PT PUSKAS	puskas@puskas.com
1000000026	PT PUSKAS	puskas@puskas.com
1000000027	PT PUSKAS	puskas@puskas.com
1000000028	PT PUSKAS	puskas@puskas.com
1000000029	PT PUSKAS	puskas@puskas.com
1000000030	PT PUSKAS	puskas@puskas.com
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1000000034	PT PUSKAS	puskas@puskas.com
1000000035	PT PUSKAS	puskas@puskas.com
1000000036	PT PUSKAS	puskas@puskas.com
1000000037	PT PUSKAS	puskas@puskas.com
1000000038	PT PUSKAS	puskas@puskas.com
1000000039	PT PUSKAS	puskas@puskas.com
1000000040	PT PUSKAS	puskas@puskas.com

Figure 6. Display of distributor data excel file after entering email
Source: Excel Data Distributor

Implementation

After the system design is done, the next stage is system implementation. This stage implements the *macro scheduler* 11 robot in accordance with the system design that has been made. Following are the steps for writing *scripts* based on system design. First, when we press the *hotkey*, the robot will automatically start sending email via *zimbra* by *new* automatically.

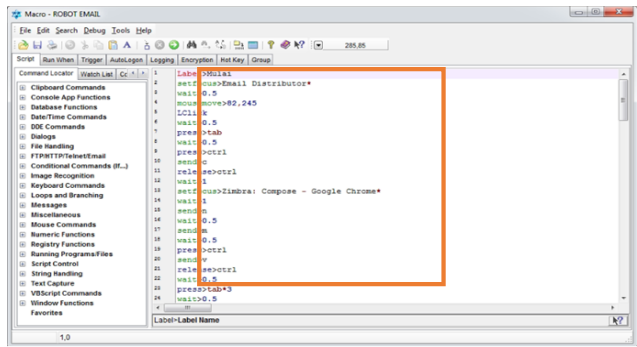


Figure 7. Display script of the robot *macro scheduler* opening *zimbra*
Source: Macro Scheduler Sending Sales Invoices

Second, the robot enters the distributor's email name based on data in excel automatically using the robot *macro scheduler* 11 that was created

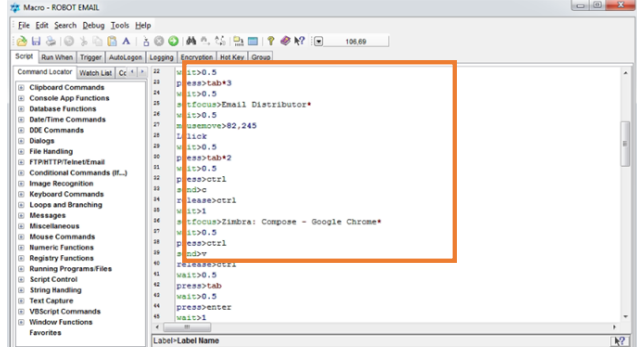


Figure 8. Display script robot *macro scheduler* entering the email name
Source: Macro Scheduler Sending Sales Invoices

Third, the robot enters the email subject based on data in excel automatically using *macro scheduler* the created 11

Discussion

From the results of the study, for the aspect of time efficiency before there were robots, it now takes forty days because sending sales invoices is done manually. After there are robots in the first month of testing, it takes fourteen days, because there are still errors in the *script robot macro scheduler*. In the second month of testing, it only took seven days to process sales invoices and very few errors occurred. In the aspect of the accuracy of the initial delivery before there was a robot, the accuracy of the delivery was still sent incorrectly to another distributor's email. Once there is a delivery robot, it is very well targeted to each distributor's email and is no longer wrong for sending emails to other distributors.

In the early shipping request aspect before there were robots, there were thirty to thirty five distributors emailing sales invoice delivery requests. After there were robots in the first month's test, there were ten distributors who sent emails requesting sales invoices, because there were no distributor emails yet. In the second month's test, only 5 distributors sent emails requesting sales invoices, because almost all of the distributor's emails were completed.

Constraints

Robot *macro scheduler*, there are bound to be obstacles, such as the absence of email names from several distributors. So that the email delivery is not sent directly to the distributor's email but to the billings spam email. Because in the excel data distributor, the distributor's email name cannot be empty, if it is empty, an error will occur in the middle of sending a sales invoice.

In addition, if there is a new distributor, automatically in Excel there is no distributor number, so you have to look for the distributor number one by one using the distributor name in SAP. *robot macro scheduler*, it starts with opening the excel data distributor and zimbra in *google chrome*. Then pressing the *macro scheduler hotkey* for sending sales invoices, after pressing it, the robot will automatically run and start the delivery process via zimbra.

Completion of Objectives

Based on the research objectives, the results of making *macro scheduler* can complete the research objectives. The application of the *macro scheduler* was made in May 2022, the initial delivery process without robots took up to a month or more, now it only takes one week for the delivery process so that there is time efficiency in the process of sending sales invoices to distributors.

In addition, it can also minimize the occurrence of sales invoices that are incorrectly sent by e-mail or do not match the e-mail name with the sales invoice due to *human error*. Even though there is still an evaluation in the application process, at the beginning the robot is running, it still has to be started by entering the manual and there may not be any problems from start to finish.

5. Conclusions and Suggestions

From this study it can be concluded that, with a *macro scheduler-based sales invoice delivery system*, it can streamline the time in the process of sending sales invoices to distributors and can also minimize the occurrence of missed sales invoices due to *human error*. Suggestions in the future that the billing team can complete and update distributor e-mail data so that all sales invoices can be sent to each distributor's company e-mail, without anyone having to go to spam e-mail. Suggestions for further research can provide a solution to the application process, which at the beginning of the robot running must still be started by entering the manual.

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