HR PAYROLL AUTOMATION USING BLUE PRISM

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1. INTRODUCTION

1.1 OVERVIEW

In this project, we are building a process for HR Department to manage the Payroll of the employees that work over Microsoft excel using Blue prism. We will give the excel file as an input for the process to get the details like basic pay, incentives and taxes like TDS and PT. The process then calculates every component which is needed for the payroll and saves in the excel file.

1.2 PURPOSE

HR automation is a process of enhancing the efficiency of the HR department by freeing employees from tedious manual tasks and allowing them to focus on complex tasks like decision making and strategizing. By automating standard and repetitive HR activities, organizations can reduce the cost and time they spend on manual HR planning and processing.
This process will help the department to calculate the employee's dearness allowance, House rent allowance, incentives, taxes, and take-home salary. This is more time efficient than manual calculation using excel. After the calculation the excel file will be sent to the Accounts department, through mail which is also a part of the process. This process requires less man-force to get it done, which in return helps the department to use the additional man-force in any other valuable work.

2. LITERATURE SURVEY

2.1 EXCISTING PROBLEM

With the challenges of the incorrect timesheet, improper record of documents, and non-categorization of employees, processing payroll on time is one of the biggest challenges in payroll management. Accurate and on-time payment is the need for payroll management but when employees don't receive payment on time, they become unhappy and may leave the

organization. To solve this problem currently organisations are hiring expert resources for best payroll management services.

Failure to automate your HR process can be a problem that only compounds as your business grows. Here are a few reasons why.

- Lost Efficiency

By not automating repetitive and laborious tasks, you lose efficiency. Your HR staff will have their time spent on monotonous and unproductive tasks.

- Prone to Errors

Tasks like verifying timesheets, calculating payrolls, and checking leaves, can be easily done by a machine. But having them done by humans might pave the way for errors. Once set up, automation does it perfectly, without any errors, unlike the human counterpart.

- New Candidates Can Have A Bad Experience

Candidates have a disheartening experience if HR doesn't follow up with them regularly. That's easier said than done.HR staff are swamped with a mountain of other tasks, making them to unknowingly forget or miss out on getting back to candidates. This is a bad hiring experience, and even if they are eventually hired, it is not a good pick for the organization.

2.2 PROPOSED SOLUTION

Through HR automation, organizations can design, streamline, integrate, and deploy necessary services swiftly at a considerably lower cost. If implemented right, HR automation can reap indispensable benefits.

It can improve productivity due to quick processing and data sharing and reduce employee turnover due to heightened employee engagement. This can cut down storage and printing costs associated with paper-based processing. This can improve organizational growth through efficient hiring at optimal operational cost. There will be a significant amount of Drop in data entry errors and misplaced/lost documents.
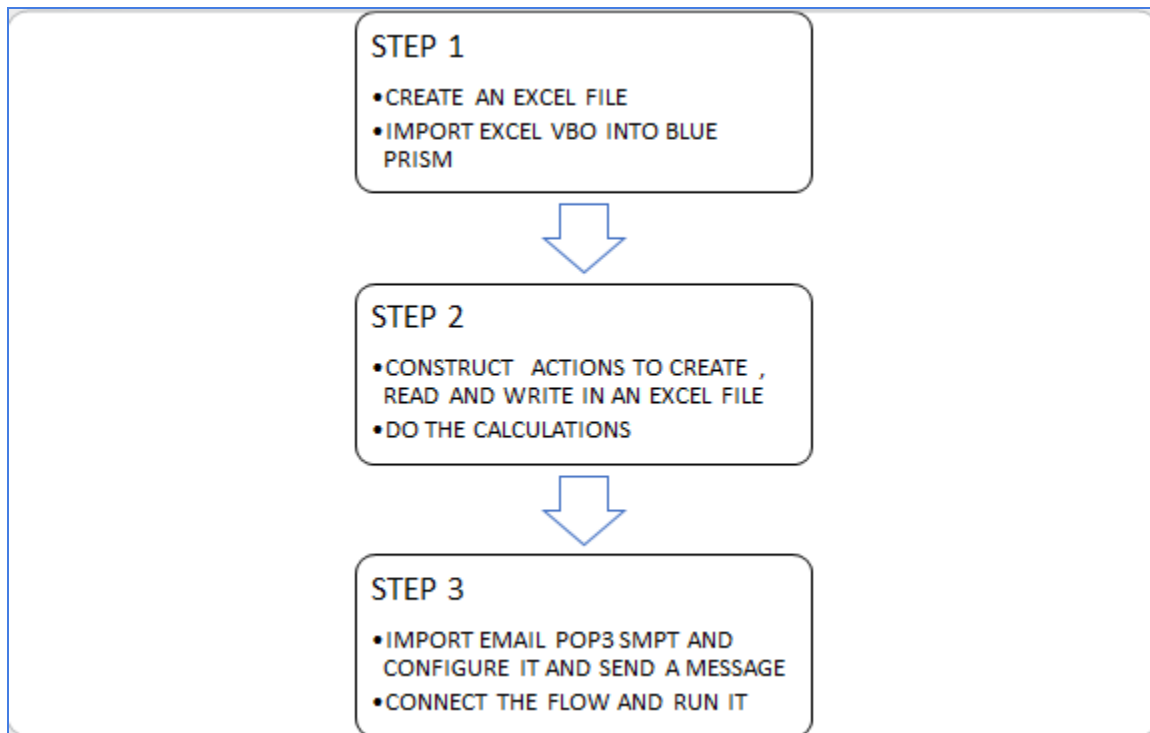
This automation can integrate all the problems with help of less man-force and with least

possible errors that could happen, when compared to the management done by the whole department. This can be achieved with minimum effort. All the department needs to do is to manage the details in excel sheets with proper care. This can be done within less time and can be delivered to the department through mail within no time once the process is done, so on -time payments is no more an issue if one uses this automation.

We can even Set automated alerts to send the payments. The Fair Labour Standards Act requires employers to keep three years' worth of pay records. In these records, you should include hours worked, payment rates, payroll dates, and more depending on your state laws. Automated payroll systems will keep this data organized for you, so you stay compliant and prepared for a possible audit. Many of the previously mentioned benefits of automated payroll contribute to an overall lower cost for your organization. When you eliminate most expensive errors, you can drop your costs in the long run.

3. THEORITICAL ANALYSIS
3.1 BLOCK DIAGRAM

STEP 1
- CREATE AN EXCEL FILE
- IMPORT EXCEL VBO INTO BLUE PRISM

STEP 2
- CONSTRUCT ACTIONS TO CREATE , READ AND WRITE IN AN EXCEL FILE
- DO THE CALCULATIONS

STEP 3
- IMPORT EMAIL POP3 SMPT AND CONFIGURE IT AND SEND A MESSAGE
- CONNECT THE FLOW AND RUN IT

3.2 SOFTWARE DESIGNING

The software required to do this process is BLUE PRISM. It is the most popular software used for robotic process automation. It has basic requirements like
Minimum 10GB free disk space
Windows 8.1 or 10 (64-bit version only)

4. EXPERIMENTAL INVESTIGATION

This automation process uses an excel sheet as its input and output. The mandatory values need for the calculations are entered in this sheet and the expected output values are left blank as the process will calculate them faster and efficiently and paste them in the assigned cells. Many companies use Excel as their data analytics tool, automation of certain aspects is possible using visual basic but many of features in excel can't be automated through the software. The combination of blue prism and excel makes that possible and cleaner.

The use of collections and multi calculation stages made the process flow light, clean and easy to understand.
All the calculations necessary for the payroll is done in the multi calculation stage.

Loop stages are used to perform these calculations on data provided multiple times.

We are using POP3 and SMTP server protocol VBO to automate the process of mailing the excel file to a list of people.
SMTP stands for Simple Mail Transfer Protocol and it's the industry standard protocol for email sending.
With SMTP you are sending, relaying, or forwarding messages from a mail client (like Microsoft Outlook) to a receiving email server. A sender will use an SMTP server to carry out the process of transmitting an email message.
POP3 downloads the email from a server to a single computer, then deletes the email from the server.

5. Flowchart
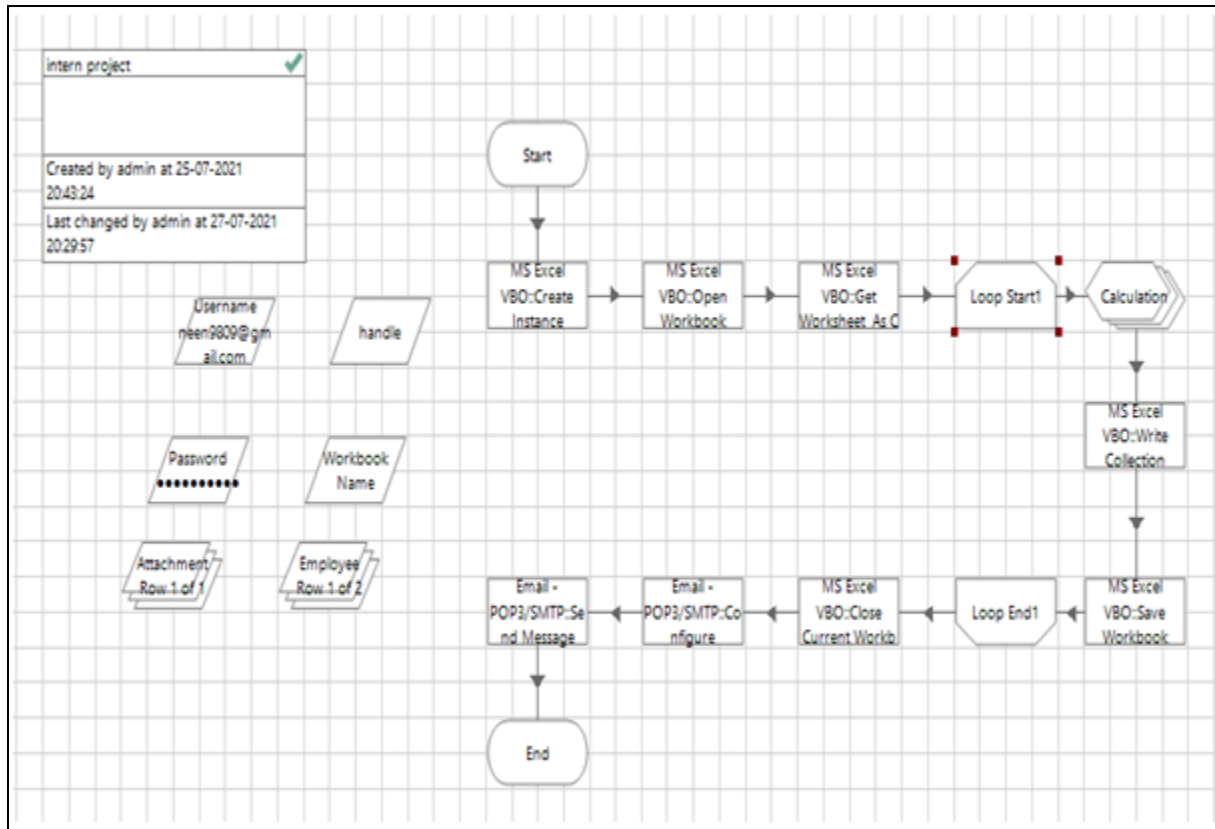
6. Result

Finally using RPA "HR Payroll" was calculated for the entire data and then the updated excel file is saved. Now this file is sent via mail with a proper subject and message to the concerned department like accounts department.

Final output of the project:

https://docs.google.com/spreadsheets/d/1IYkmUz44aCfu9dbNp3wdhVlAUlYV37GwpFwWMOaxBtM/edit?usp=sharing

7. Advantages of the project

1. **Reduced compliance risk**

As Businesses need to pay a certain amount of tax for every employee, this project helps in ensuring that the correct amount is being withheld from both the employee and employer. When there is a change in the rules of tax, payroll automation system can help account for those changes automatically.

2. **Streamlined payroll operations**

Payroll automation helps HR and accounting work better together, this simplifies the process of employees getting paid the correct amount at the correct time in every payroll cycle.

3. **Time saving**

With less manual input and more streamlined system the proposed project is very responsive and less time consuming.

4. **Reduced costs**

Reducing manual work leads to reduce staff costs, budget spent on correcting mistakes.

5. **Staff efficiency**

As many small start-ups don't have a full HR team and their HR staff handles everything from payroll to HR onboarding to recruitment and training. For those teams, making use

of this project can reduce their burden on Payroll. Thus, being able to concentrate on other important tasks.

6. **Improved accuracy**

As Payroll needs to be very accurate for several reasons. When you remove the manual processes involved in payroll, the accuracy of your process is automatically improved.

7. **Improvement in Handling the task's**

Using this project, one can schedule and complete repetitive tasks at a click – this can include data transfer, payslip generation, group mailing, and others.

8. **Avoid delay payments**

As this Payroll process is automated it makes the things very much simpler than before thus avoiding delaying payments to the employees and this will have a positive impact on employees' level of job satisfaction.

8. Disadvantages of this project

1. **License cost**

Blue Prism license is costly and sometimes few organizations just hesitate to implement this project just by looking into the cost.

2. **Equipment and operators cost**

As it requires computer equipment, resources, and skilled operators. We will need to invest money into all of them.

3. **Cannot make intelligent decisions**

As this project deals with good amount of data, numbers that would be great if this takes care of decision making and use AI to give meaningful insights but unfortunately it doesn't.

9.Applications

- Resume screening and candidate shortlisting

- Freshers Onboarding

- Travel and expense management

- Attendance tracking

- Sending specified data to a group of people

10. Conclusion

Automation is among the most popular buzzwords sweeping through the HR industry. Robotic Process Automation (RPA), specifically, is a highly relevant and easy-to-implement automation methodology that could transform several routine HR tasks. RPA works via automated scripts and bots conducting activities at an exceptional rate of accuracy and speeds. This project addresses common human errors and mistakes that creep in because of work fatigue. In a segment where error-free operations and data accuracy is so important, i.e., payroll, this project has more potential for instituting change.

This project makes it clear that the HR Payroll can be done in a much easier way and it represents a feasible approach for expanding businesses. To become more competitive, companies will have to adapt to a growing number of employees, and to a growing amount of data and paperwork. This project **deployment** promises a more efficient data management, and consequently it streamlines rule-based HR processes.

Payroll is perfect for Robotic Process Automation, as it deals well with processes that are recurring and heavily rule-based. Automating payroll allows small business owners and their accountant or bookkeeping partners, for example, to spend less time on back-office operations and more time building their businesses or providing more careful financial analysis.

Payroll is a critical business operation for every organisation. One must pay their staff accurately and on time to avoid low morale, poor performance and possibly even reputational and legal difficulties. This project helps in overcoming all these with a greater speed, efficiency, and confidence.

11.Future scope
As this project uses a huge amount of data, that would be great if RPA, AI, and ML fuses together so that these RPA tools along with doing those defined repetitive tasks using bots, they can also take meaningful decisions and give meaningful insights on the data that is being used. Thus, creating a greater impact on the work that is being done.

Quite a few trends are making their mark in HR Tech lately. One such is the implementation of Robotic Process Automation (RPA) in organisations. This project tends to change the way business' function; leaving tedious, repetitive, iterative tasks for bots and creating opportunities

for effectively leveraging the workforce.

Typically, HR departments deal with many different functions that need to be repeated for every new cycle. This project could enable bots to automate these tiny, cumbersome tasks and work along with HR personnel to handle routine, standardised workflows, allowing them to focus their precious time on other crucial matters.

A report finding also suggests that in future, humans and robots will work in greater synergy, where robots take ownership of iterative data-related tasks. Interpretation and decision-making, on the other hand, remain under the ambit of human workers. A leading international bank has adopted RPA in payroll/payments to reduce manual errors by 84 percent and in addition there was an increase of 70 percent in productivity. This is in line with that report prediction that RPA can unlock up to 35% in potential savings.