Robotic Process Automation (RPA)

Robotic process automation, or RPA, uses software robots, called bots, to carry out repetitive computer tasks that follow fixed rules. The word robot can mislead, because these bots are programs, not machines. They copy what a person does on a screen, such as clicking, typing and copying data between applications. The IEEE, a professional engineering organisation, has published a guide to the terms and concepts in this field. Hadi, a finance officer, wants to save time on his monthly reporting with RPA.

1. What RPA Is

An RPA bot works through the same screens that people use, so it usually does not need changes to the underlying systems. It follows a script of steps, for example opening an email, reading an invoice number and entering it into the accounting system. It works quickly, does not get tired and keeps a log of its actions. It does not think or judge, and it only does what it was told. This makes RPA different from artificial intelligence, although the two can be combined.

Example: A person copies the same order details from emails into a spreadsheet every morning. Using an RPA bot, the same clicks and copying are recorded once, and the bot repeats them without help.

At work: Hadi spends two hours a month copying figures from the bank portal into a report. Using an RPA bot, he records the steps, and the bot copies the figures in minutes while he reviews the result.

2. Good Candidates

Not every process suits automation. Good candidates follow clear rules, repeat often and use digital, structured data such as forms and tables. They have few exceptions, and their steps rarely change. A simple test is whether a new colleague could do the task from a written checklist. The more volume and rule clarity, the larger the benefit.

Example: A school office sends the same attendance reminder each week to the same group. Applying the good-candidate test, the steps are clear, repeated and digital, so the task suits a bot.

At work: Hadi lists three tasks. Applying the good-candidate test, he chooses the monthly bank report because it is rule-based, repeated and digital, and he leaves the negotiation emails to people.

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3. Start Small

The sensible way to begin is with one small process. First, we write down every step and every exception, because a bot can only follow what is described. Then we build the bot and test it with real examples in a safe environment. A pilot shows the time saved and the problems before the idea is spread wider. Early success also builds trust inside the organisation.

Example: A small office wants to automate reminders for all its customers. Starting small, it tests the bot on ten customers first and extends it only after it works.

At work: Hadi documents the report steps, then builds the bot and runs it on last month's data. Starting small, he compares the bot's report with his own, finds two small errors and fixes them before real use.

4. Keep Control

A bot still needs an owner. Somebody must monitor it, handle the cases it cannot process and keep its login details secure. When a screen or system changes, the bot may stop working, so changes should be reported to the bot owner. Exceptions are sent to a person instead of being ignored. Reviewing results regularly shows whether the bot still brings the benefit.

Example: A bot sends a daily sales email, and then the website layout changes. Keeping control with an owner and alerts, the owner sees the failure alert the same day and fixes the bot's steps.

At work: Hadi names himself as the bot's owner and sets an alert for failures. Keeping control, he learns on the first day of the bank's new screen that the bot stopped, and a colleague completes that report by hand.

Conclusion

In summary, RPA uses software bots to repeat rule-based computer tasks. It works best for clear, frequent and digital processes, and it does not replace human judgement. We start with one small process, test it carefully and keep an owner responsible for it. Hadi's reporting bot shows how a small project can return hours every month. The IEEE guide helps organisations use the same terms when they talk about this field.

Sources

• IEEE Std 2755-2017: IEEE Guide for Terms and Concepts in Intelligent Process Automation – https://standards.ieee.org/beyond-standards/ieee-2755-standards-to-bring-clarity-and-objective-guidance-to-software-based-intelligent-process-automation-space/
• Robotic process automation: overview of the concept, uses and limits – https://en.wikipedia.org/wiki/Robotic_process_automation

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