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Robotic Process Automation

Robotic Process Automation (RPA) is a software program that imitates human actions while interacting with a computer application and accomplishing automation of repetitive, rule-based processes.

What is RPA?

Robotic Process Automation (RPA) is the technology that allows the automation of the task in exactly the way how a human does. A robot in robotic process automation does not mean that literally robots are going to replace human beings, but it means a computer program that imitates human actions.

In other words, we can say that RPA is a software program that imitates human actions while interacting with a computer application and accomplishing the automation of repetitive and rule-based processes. RPA can be used to automate the labor intensive tasks such as back office processes, data entry, data validation etc.

The main goal of Robotics process automation process to replace repetitive and boring clerical task performed by humans, with a virtual workforce. RPA automation does not require the development of code, nor does it require direct access to the code or database of the applications.



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Why Robotic Process Automation?

Consider the following scenario in a typical enterprise



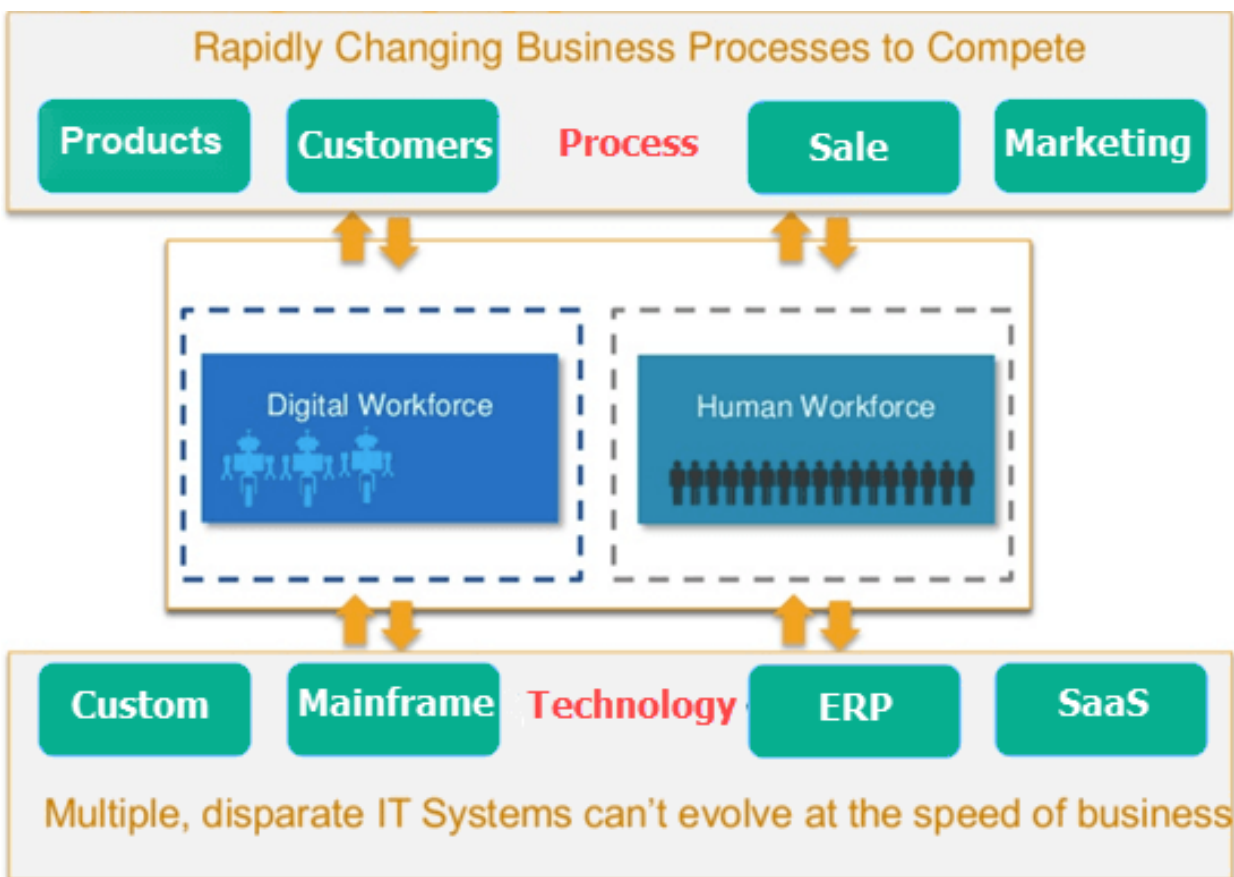
1. The business climate is ever changing. An enterprise needs to continuously evolve its product, sales, marketing, etc. process to grow and stay relevant.
2. A typical enterprise uses multiple and disconnected IT systems to run its operations. With change in Business process, these IT systems are not changed frequently due to budget, timing, and implementation complexity issues. Hence, the business process does not map the technical process mapped in the IT system.

3. To overcome this technical and organization debt human workforce is hired to fill the gap between systems and processes. Example: A company made changes in Sales process such that a mandatory 50% advance is required to confirm the booking of its product. But this is not coded in the IT system yet. A human worker will have to manually check the Invoice and payment details and process the sales order only if 50% advance is made.

The problem? --- Humans

With any change in the business process, a company would need to hire new employees or train existing employees to map IT system and business process. Both solutions are time and money consuming. Also, with any succeeding business process change will also need hiring or re-training.

Enter RPA



With Robotic automation, the company can deploy virtual workers who mimic human workers. In case of a change in process, a change in few lines of software code is always faster and cheaper than retraining hundreds of employees.

Here, are some reasons why Robotics Process Automation is advantageous

- A human can work average 8 hours a day whereas robots can work 24hours without any tiredness.
- The average productivity of human is 60% with few errors as compared to Robot's productivity which is 100% without any errors.
- Robots handle multiple tasks very well compared to a human being.

RPA Implementation Methodology

In this Robotic Process Automation tutorial, we will learn the RPA implementation methodology.



Planning

In this phase, you need to Identify processes which you want to automate. Following checklist will help you identify the correct process.

- Is the process manual & repetitive?
- Is the process Rule-based?
- Is the input data is in electronic format and is readable?
- Can existing System be used as it is with no change?

Next, steps in planning phase are:

- Setup project team, finalize implementation timelines and approach.
- Agree on solution design for performing Robotic Process Automation processes.
- Identify logging mechanism that should be implemented to find issues with running bots.
- Clear roadmap should be defined to scale up RPA implementation.

Development

In this phase, you start developing the automation workflows as per agreed plan. Being wizard driven, the implementation is quick

Testing

In this phase, you run RPA Testing cycles for in-scope automation to identify and correct defects.

Support & Maintenance

Provide continuous support after going live and helps in immediate defect resolution. Follow general maintenance guidelines with roles and responsibilities with business and IT support teams.

General Use of RPA

1. Emulates Human Action:

Emulates human execution of the repetitive process using various application and systems.

2. Conduct high-volume repeated tasks:

Robotics process automation can easily simulate rekeying of data from one system to another. It performs tasks like data entry, copying, and pasting.

3. Perform Multiple Tasks:

Operates multiple and complex tasks across multiple systems. This helps to process transactions, manipulate data and send reports.

4. 'Virtual' system integration:

This automation system can transfer data between disparate and legacy systems by connecting them at the user interface level instead of developing new data infrastructure.

5. Automated report generation:

Automates the extraction of data to come up with accurate, effective and timely reports.

6. Information validation and auditing:

Resolves and cross-verify data between different systems to validate and check information to provide compliance and auditing outputs.

7. Technical debt management:

Helps to reduce technical debt by reducing the gap between systems, preventing the introduction of custom implementations.

8. Product management:

It helps to bridge the gap between IT systems and related product management platforms by automated updating of both systems.

9. Quality Assurance:

It can be beneficial to QA processes which cover regression testing and automating customer use case scenarios.

10. Data migration:

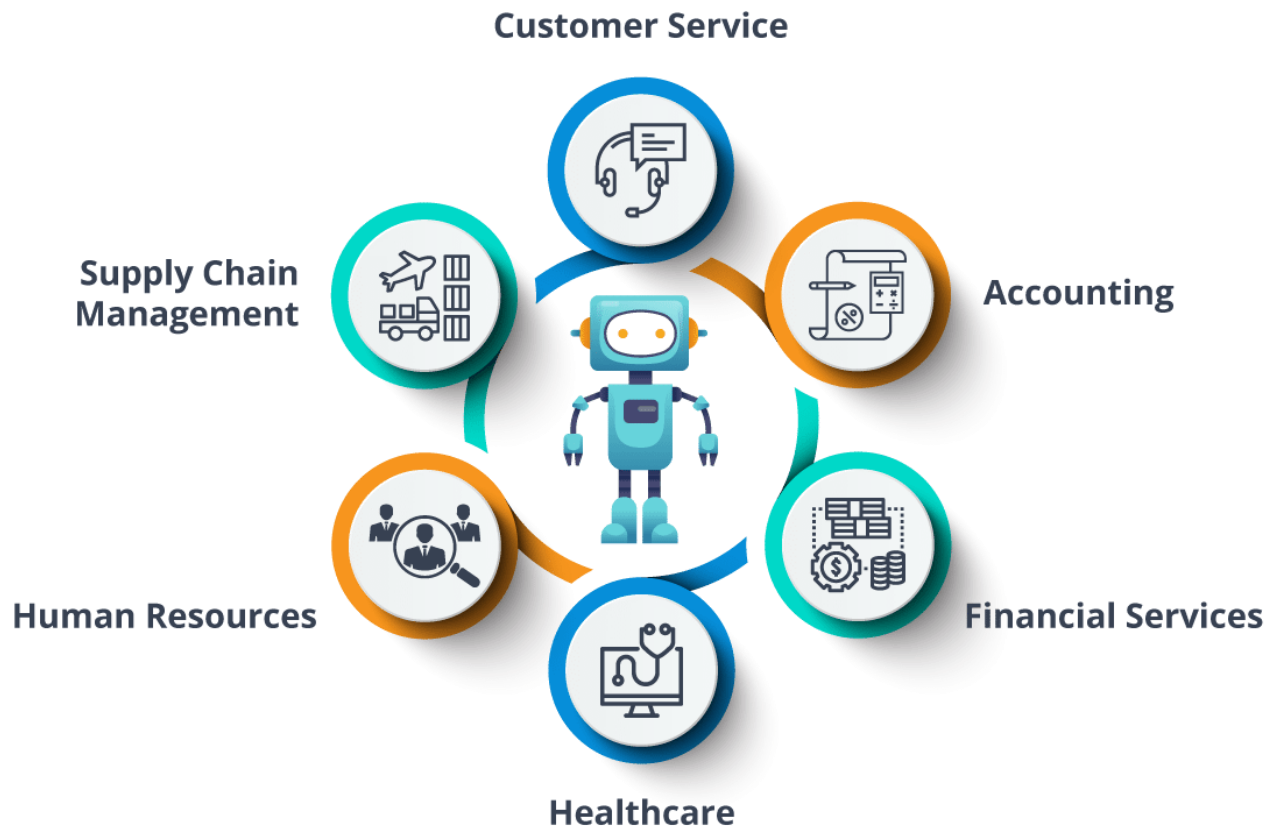
Allows automated data migration through systems which is not possible using traditional mediums, like document, spreadsheets or other source data files.

11. Gap solutions:

Robotic automatic fills the gaps with process deficiencies. It includes may simple tasks as password resets, the system resets, etc.

Applications of RPA

Multinational companies such as Deloitte, Accenture, Capgemini and many more, use Robotic Process Automation in their day to day tasks. These companies, benefit by using RPA as it provides, accurate, reliable, consistent outputs with high productivity rates. So, now let me tell you the top applications of RPA so that you know the various sectors in which RPA can be used.



RPA Tools - Robotic Process Automation

Selection of RPA Tool should be based on following 4 parameters:

1. **Data:** Easy of reading and writing business data into multiple systems
2. **Type of Tasks mainly performed:** Ease of configuring rules-based or knowledge-based processes.
3. **Interoperability:** Tools should work across multiple applications
4. **AI:** Built-in AI support to mimic human users

Popular Robotic Automation Tools:

1) Blue prism

Blue Prism is a Robotic Process Automation software. It provides businesses and organizations with an agile digital workforce.

2) Automation Any Where

Automation Anywhere is a developer of robotic process automation (RPA) software.

3) UiPath

UiPath is Robotic Process Automation software. It helps organizations efficiently automate business processes.

Benefits of RPA

Some benefits that RPA can provide to your organization:

1. Large numbers of the process can easily have automated.
2. Cost is reduced significantly as the RPA takes care of repetitive task and saves precious time and resources.
3. Programming skills are not needed to configure a software robot. Thus, any non-technical staff can set up a bot or even record their steps to automate the process.
4. Robotic process automation support and allows all regular compliance process, with error-free auditing.
5. The robotic software can rapidly model and deploy the automation process.
6. The defects are tracked for each test case story and the sprint.
7. Effective, seamless Build & Release Management

Disadvantages of RPA

Let's not forgot some cons of the RPA process:

1. The bot is limited to the speed of the application
2. Even small changes made in the automation application will need the robots to be reconfigured.

Myths of RPA

1. **Coding is required to use RPA software**

That's not true. To use Robotics Process Automation tools, one needs to understand how the software works on the front-end and can how they can use for automation.

2. **RPA software does not require human supervision**

This is an illusion because humans are needed to program the RPA bot, feed them tasks for automation and manage them.

3. **Only large big companies can afford to deploy RPA**

Small to medium-sized organizations can deploy RPA to automate their business. However, initial costing will be high but can be recovered in 4-5 years.

4. **RPA is useful only in industries that rely heavily on software**

RPA can be used to generate automated bills, invoice, telephone service, etc. which are used across industries irrespective of their software exposure.

Summary

- RPA meaning or RPA full form is Robotic Process Automation
- Robotics Process Automation allows organizations to automate task just like a human being was doing them across application and systems.
- The main goal of Robotics process automation process to replace repetitive and boring clerical task performed by humans, with a virtual workforce.
- The average productivity of human is 60% with few errors as compared to Robot's productivity which is 100% without any errors.
- One should consider business impact before opting for RPA process
- There is multiple overlaps between a Test Automation Tool and RPA tool. Though they are still different
- RPA implementation has 4 phases 1) Planning 2) Development 3) Testing 4) Support & Maintenance
- RPA is used in wide range of industries like Healthcare, Insurance, Banking, IT etc.

QUIZ (16)

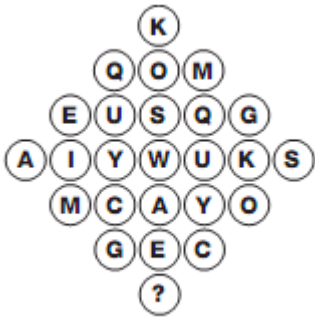
Quiz : 1

Find the next in the sequence 3,10,101, ?

- a. 10101 b. 10201 c. 10202 d. 11012

Quiz : 2

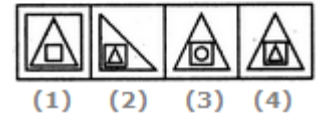
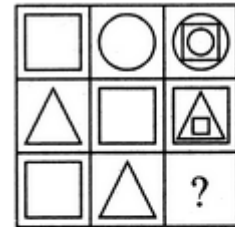
Which letter replaces the question mark?



Quiz : 3

Out of the given answer figures, which is the correct one to replace the question mark?

- a. (1)
b. (2)
c. (3)
d. (4)

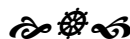


Answer of Last Quiz (15)

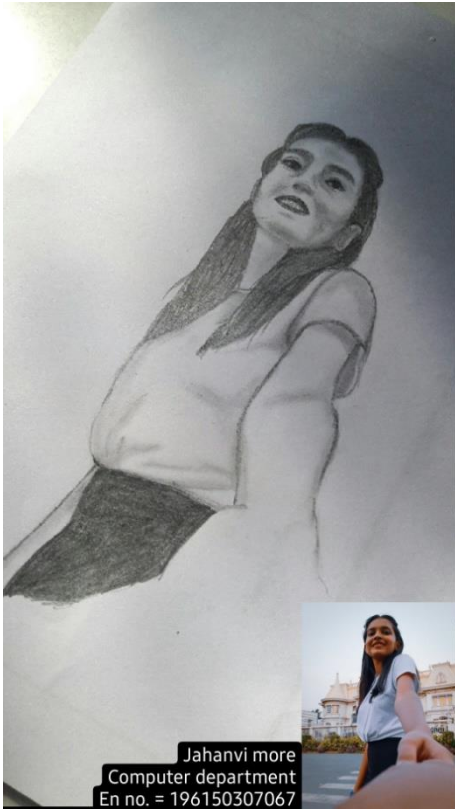
Q. 1 Answer: C Explanation: $5, 5 \times 3 + 6 = 21, 21 \times 3 + 6 = 69, 69 \times 3 + 6 = 213, 213 \times 3 + 6 = 645$
 $645 \times 3 + 6 = 1941$

Q. 2 Answer: A Explanation: Alphabet Series - A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
The coding follows the rule -2, +1, -2, +1, etc.
That means $Q-2=O, U+1=V, E-2=C$, etc.

Q. 3 Answer: D Explanation: First a 6-sided figure encloses $(6-1=)$ 5-sided figure.
Then a 5-sided figure encloses $(5-1=)$ 4-sided figure.
So on,
The answer must be a 3-sided figure enclosing a 2-sided figure.
So answer figure D should be next. So, answer is option D



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