# TEST AUTOMATION USING ANALYTICS, ROBOTICS & MICROCONTROLLERS

# Software Test Automation Trends

Gartner

*" By 2021, 50% of enterprises will leverage intelligent test automation driven by AI and machine learning."*

SAUCELABS

*"56% do as much or more automated as manual testing, a minor decrease from 59% (2017) and 60% (2016) ."*

FORRESTER

*"Automating 80% is the goal but 14% of the customer references are at that level"*

Gartner

*"By 2023, 75% of IoT system integrators will have added comprehensive end-to-end IoT solution testing services to their portfolios, up from 30% today"*

WORLD QUALITY REPORT

*"Organizations are unable to tap the full benefits of Agile/Devops due to low levels of automation and challenges with test data/test environment"*

WORLD QUALITY REPORT

*"42% of the CPRD customers do not have the right set of tools for testing"*

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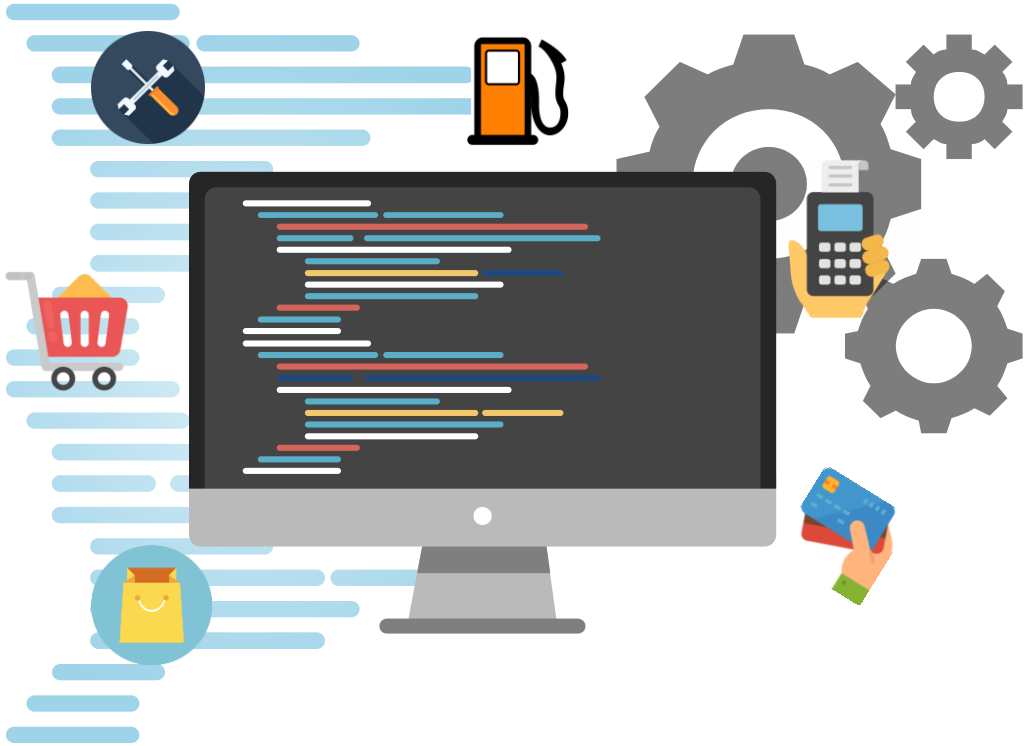
# There are multiple types of hardware to deal with...



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# There are varying flavors of POS software...

TOSHIBA

PCMS

NCR

WINCOR NIXDORF

GK SOFTWARE

Retalix

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# End to End Workflows using each hardware involves multiple Hardware Components

Debit Readers

Receipt Printers

Scanner Scale

Barcode Scanners

Customer Pole Display

Handheld scanners

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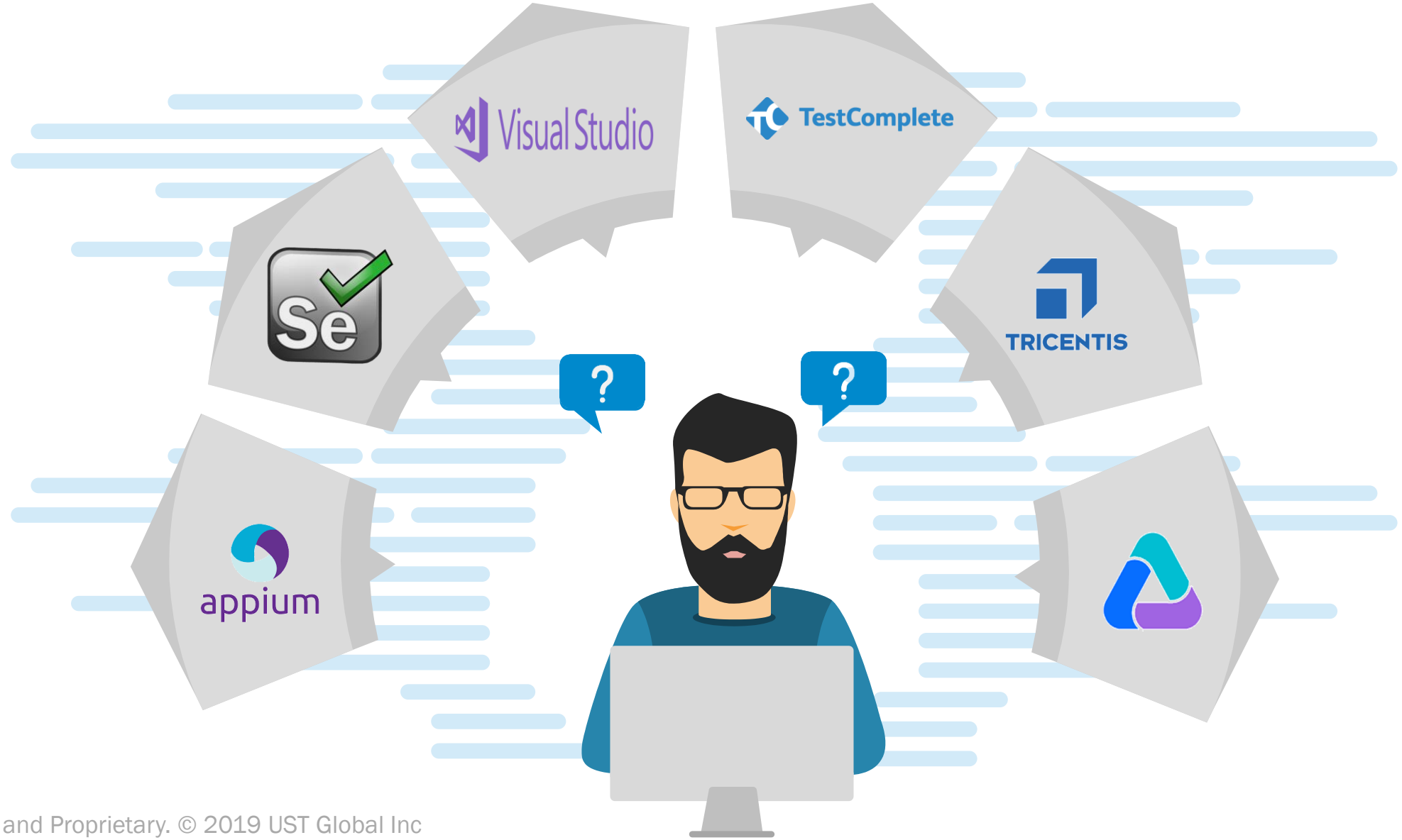
# Lack of Support for Automation Tools – Popular tools does not help Automate POS

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# Testing should be aligned with Real World Scenarios

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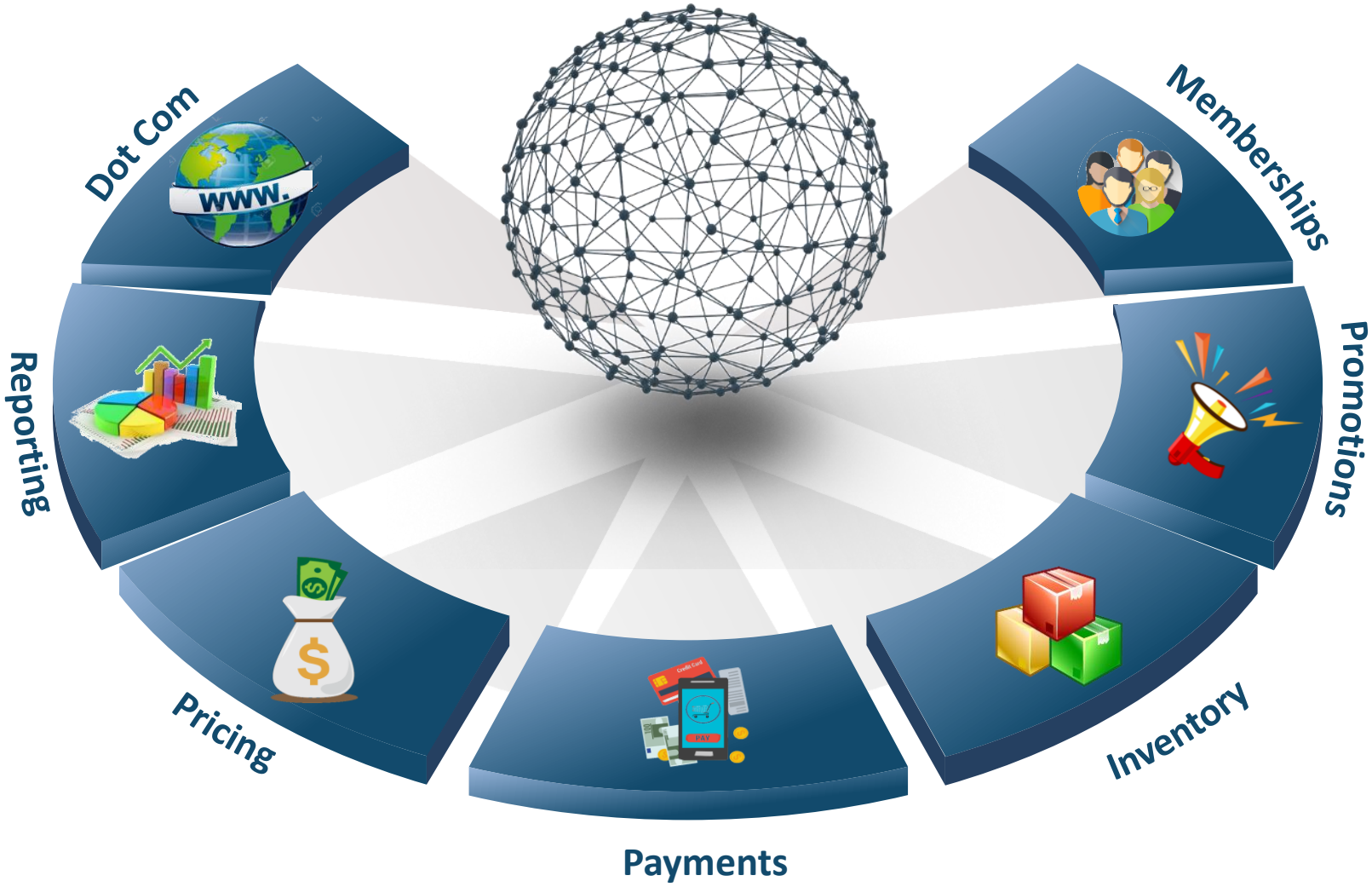
# POS has numerous Interfaces with In-House & 3rd Party Systems

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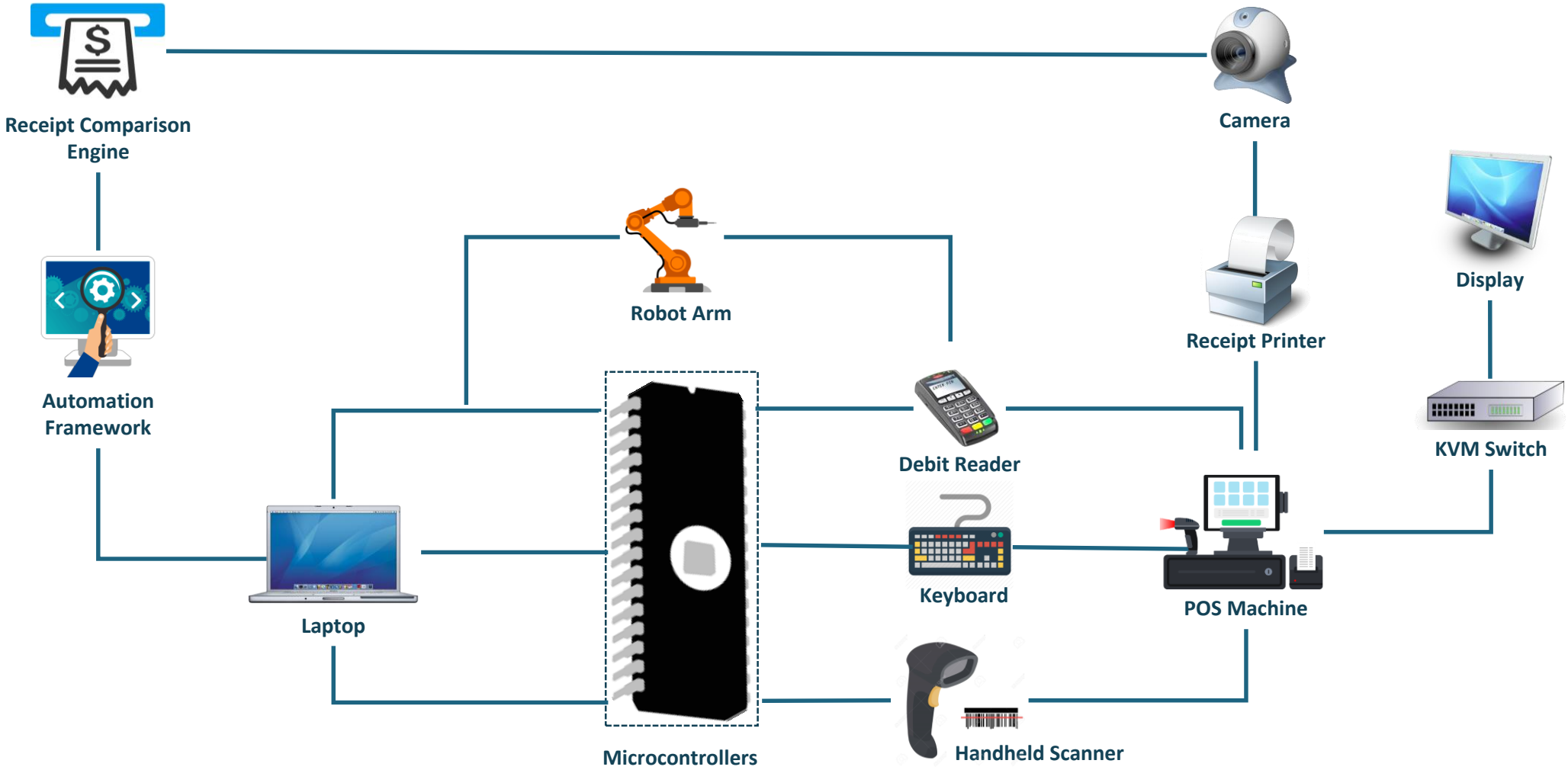
# Building blocks of POS Test Automation Solution

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# OCR based Test Automation Tools are best suited for POS Automation

OPTICAL CHARACTER RECOGNITION

rhiscom

TestPlant

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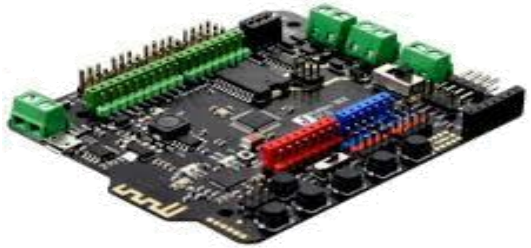
# Microcontrollers for triggering events & KVM switches for event transmission

KVM Switch to transmit events and replay screen updates to/from POS registers



Commands are sent to the Arduino microcontroller to

- Mimic Keyboard Strokes
- Trigger Barcode scanner

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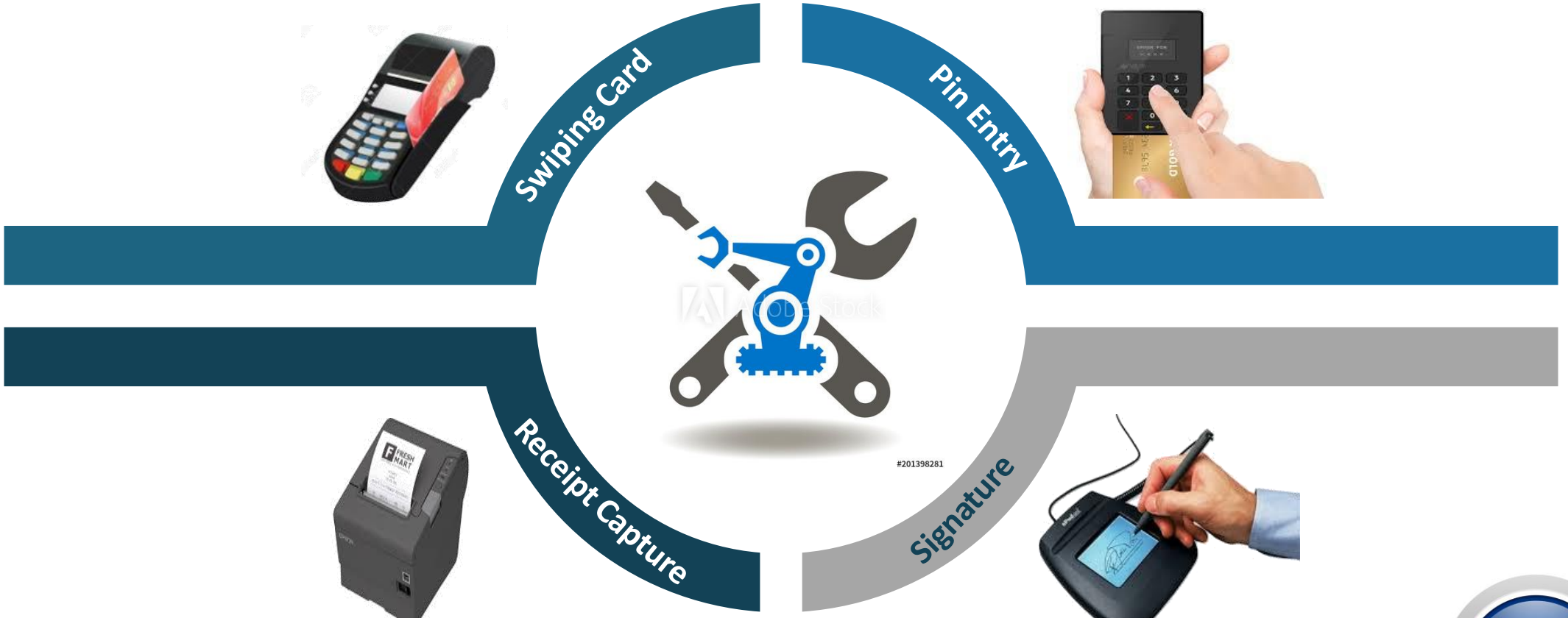
# Robotic Arms for Capturing Receipts & performing actions on Debit Reader



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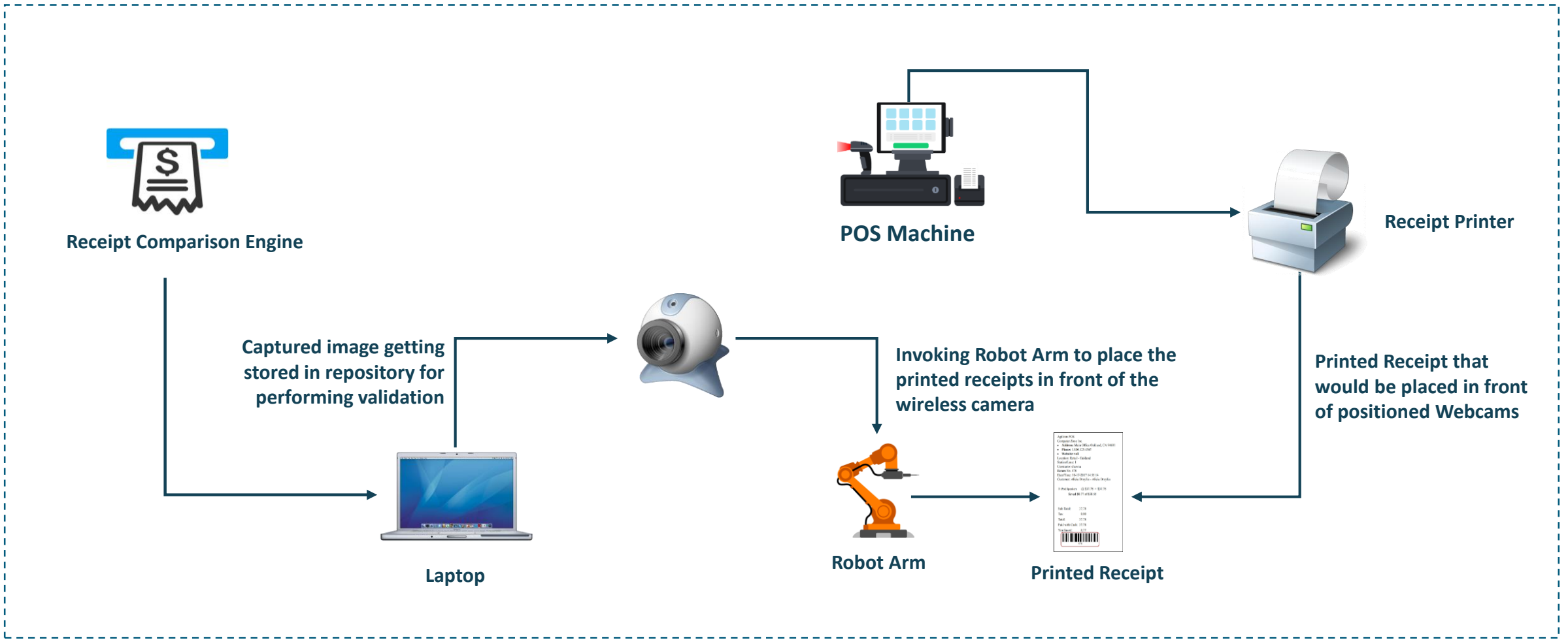
# Automated validation of receipt using computer vision API's

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# Test Reporting Platform with predictive analytics for Real Time Status Reporting

Automation Framework

Extractors

Interfaces

Test Management Tool

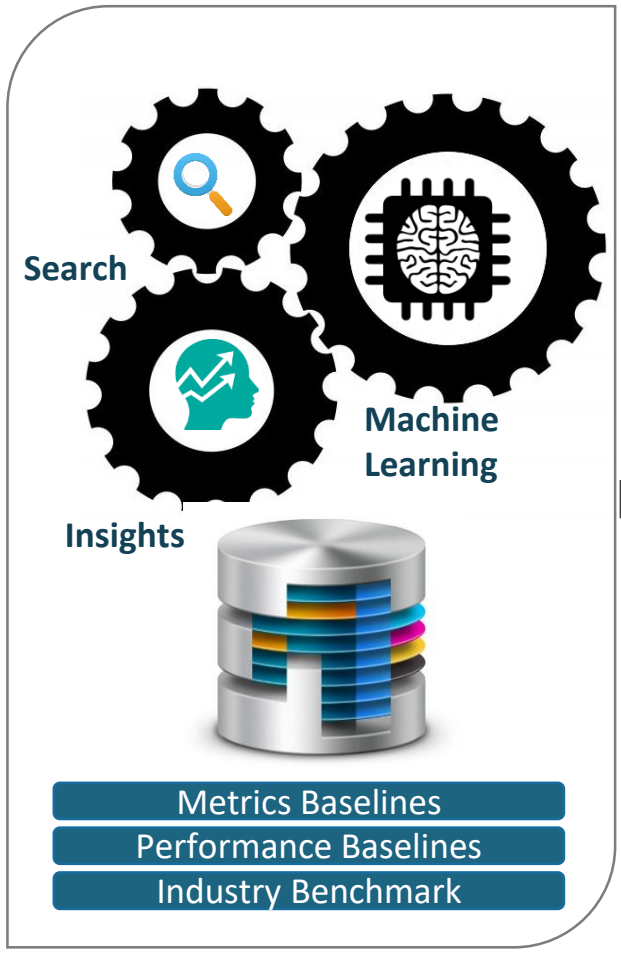
Extractors

Interfaces

Defect Management

Extractors

Interfaces




Power BI

Chatbot

Dashboard in Web

Mobile with Dashboard

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# Automation helps to improve Consumer Experience & Speed to Market

**70%**

Reduction in Regression Cycle Time

**0 Sev 1 & 2**

Zero Critical & Serious Defects in Production

**40%**

Reduction in Regression Testing Cost

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# Q n A

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# THANK YOU