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COMPLETE RPA BOOTCAMP

DEVELOPER'S CHEATSHEET

THE MUST-HAVE UIPATH RPA DEVELOPER CHEATSHEET.
A LIST OF THE MOST COMMONLY USED UIPATH ACTIVITIES,
DESCRIPTIONS AND 50+ DOWNLOADABLE EXAMPLE BOTS!

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UI AUTOMATION ACTIVITIES

STANDARD

Click Download Example
Clicks a specified UI element.

Double Click Download Example
Double-clicks a specified UI element.

Hover Download Example
Hovers pointer over a specified UI element.

Type Secure Text
Sends a secure string to a UI element.

Send Hotkey Download Example
Sends keyboard shortcuts to a UI element.

Type Into Download Example
Sends keystrokes to a UI element. Special keys are supported and can be selected from the drop-down list.

Check
Selects or clears radio buttons and check boxes.

Select Item
Selects an item from a combo box or list box. After you indicate the element on screen, the list with all the available options is displayed in the activity.

Select Multiple Items Download Example
Selects multiple items from a combo box or list box. After you indicate the elements on screen, the list with all the available options is displayed in the activity.

Get Text Download Example
Extracts a text value from a specified UI element.

Set Text
Enables you to write a string to the Text attribute of a specified UI element.

Activate Download Example
Enables you to activate a specified UI element. For example, it can be used to bring a window to the foreground.

Highlight Download Example
Visually highlights a specified UI element.

Anchor Base Download Example
A container that searches for a UI element by using other UI elements as anchors. This should be used when a reliable selector is not available.

Element Exists Download Example
Enables you to verify if a UI element exists, even if it is not visible.

Find Element Download Example
Waits for the specified UI element to appear on the screen (to be in the foreground) and returns it as a UiElement variable. If you want to find out if an element is enabled or not, please use activities such as Get Attribute or Wait Attribute, coupled with the aastate attribute, for example.

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USER INTERFACE

Wait Element Vanish Download Example
Waits for the specified UI element to disappear from the screen.

Get Attribute Download Example
Retrieves the value of a specified attribute of a UI element. If you want to find out if an element is enabled or not, please use this activity or the Wait Attribute one, coupled with the aastate attribute, for example.

Extract Structured Data Download Example
Extracts data from an indicated web page. You can specify what information to extract by providing an XML string in the ExtractMetadata field, in the Properties panel. This can easily be generated with all the properties set by using the Data Scraping wizard.

Get OCR Text Download Example
Extracts a string and its information from an indicated UI element or image using the OCR screen scraping method. This activity can also be automatically generated when performing screen scraping, along with a container. By default, the Google OCR engine is used.

Microsoft OCR
Extracts a string and its information from the provided image. Microsoft OCR activity uses the Windows 10 built-in OCR, if available, otherwise it resumes to the default MODI OCR Engine. It can be used with other OCR activities (Click OCR Text, Hover OCR Text, Double Click OCR Text, Get OCR Text, Find OCR Text Position).

Tesseract OCR
Extracts a string and its information from an indicated UI element or image using Tesseract OCR Engine. It can be used with other OCR activities, such as Click OCR Text, Hover OCR Text, Double Click OCR Text, Get OCR Text, and Find OCR Text Position.

Click Image Download Example
The example below displays the automated interaction of a robot with a simple windows application by manipulating multiple images until creating a pattern. It presents activities such as Click Image, Double Click Image, or Wait Image Vanish. You can find these activities in the UiPath.UIAutomation.Activities package.

Image Exists
Checks if an image is found within the specified UI element.

Wait Image Vanish Download Example
Waits for an image to disappear from a UI element.

Attach Browser
A container that enables you to attach to an already opened browser and perform multiple actions within it. This activity is also automatically generated when using the Web recorder.

Close Tab
Closes a browser page.

Go Back
Goes back in the history list of an indicated browser.

Go Forward
Goes forward in the history list of an indicated browser.

Navigate To
Navigates the browser to a given URL.

Open Browser Download Example
A container that enables you to open a browser at a specified URL and execute multiple activities within it.

Refresh Browser
Reloads the web page that is currently displayed in the specified browser.

Attach Window
A container that enables you to attach to an already opened window and perform multiple actions within it. This activity is also automatically generated when using the Desktop recorder.

Close Window
Closes the selected Window

Maximize Window Download Example
Maximizes the indicated window.

USER EVENTS

Click Trigger
Monitors click events on a specified UI element. Can only be used inside a Monitor Events activity.

Key Press Trigger
Monitors keyboard events on a specified UI element. Can only be used inside a Monitor Events activity.

Click Image Trigger
Monitors the Image defined by the target UI element for mouse input. Can only be used inside a Monitor Events activity.

Hotkey Trigger Download Example
Monitors a specified system-wide key event. Can only be used inside a Monitor Events activity.

Mouse Trigger
Monitors a specified mouse-key combination system-wide event. Can only be used inside a Monitor Events activity.

Monitor Events Download Example
Listens to multiple activities (also known as triggers) and, when triggered, executes the activities specified in the Event Handler container.

SYSTEM

Get From Clipboard
Retrieves data from the clipboard.

Set To Clipboard
Places a specified text on the clipboard.

Close Application
Closes the application corresponding to a specified UI element.

Open Application
A container that launches a specified application and performs multiple actions within it. Optionally, it can pass a list of arguments to the application.

Start Process Download Example
Launches a specified application and can optionally pass a list of arguments to it.

Get Password
Encrypts a password by associating it with the current user. Only workflows running under the current user context can decrypt the password.

WORKFLOW FOUNDATION ACTIVITIES

WORKFLOW

Assign
Allocates any value to a variable or argument. It can be used to increment the value of a variable in a loop (see the example in the The Do While Activity chapter), sum up the value of two or more variables and assign the result to a different variable (see the example in the Generic Value Variables chapter), assign values to an array (see the Array Variables chapter) and so on. By default, this activity is also included in the Favorites group.

Delay
Waits for a specified amount of time before continuing the workflow.

Do While
Creates a loop that executes a specific sequence while a condition is met. The sequence is executed at least once, and then, until the custom condition is no longer met. Note: Conditions must have a boolean value (True or False).

If
Enables your project to take one of two different courses of action, depending on whether a specified condition is met. This activity contains three sections: Condition, Then, and

Sequence
Enables you to create linear processes comprised of many child activities, which are executed in sequential order. It can either serve as a stand-alone automation project or can be included as part of a flowchart or a state machine, to help you group specific activities.

Switch
Enables you to execute a single course of action out of multiple options, based on a preset condition. The activity consists of a conditional expression and a collection of cases, each containing a corresponding activity or set of activities. The Switch activity executes a single case in the collection, based on its match with the conditional expression. If the condition does not match any of the cases, the Default one is executed. The Switch activity can be used instead of an If activity if the condition has to be tested against three or more cases.

Flow Decision
An activity which executes one of two branches, depending on whether a specified condition is met. The branches are entitled True and False by default, but their names can be changed in the Properties panel. This activity can only be used in a Flowchart and is equivalent to the If activity.

Flow Switch
A Flowchart specific activity that splits the control flow into three or more branches, out of which a single one is executed based on a specified condition.

Flowchart
A type of project that consists of various activities which can be connected to one another in multiple ways, enabling you to automate simple actions and create complex business

Try Catch Download Example
Catches a specified exception type in a sequence or activity, and either displays an error notification or dismisses it and continues the execution.

State Machine
A container for using State Machine specific activities. Contains a Start Node that can be linked to the initial state of the State Machine. You can find out more about state machines on our documentation platform or in the official Workflow Foundation documentation.

State
A State Machine specific activity that can also serve as an Initial state, when linked directly to the Start node. It contains three editable areas, as follows:
The Entry area contains the activities that are to be performed when the state is entered.
The Exit area contains the activities that are to be performed upon exiting the state.
The Transitions area describes the current transitions this state has in relation to other states.

Transition
The Transition activity cannot be dragged from the Activities Panel, like a conventional activity. It is generated when you link a State to another State or to a Final State, within a State Machine container. This activity helps you input conditions under which the automation project can pass from one State to another. You can find out more about state machines on our documentation platform or in the official Workflow Foundation documentation.

Final State
A State Machine specific activity that ends a State Machine cycle. This activity contains an Entry area which holds the activities that are to be performed when the state is

SYSTEM ACTIVITIES

PROGRAMMING

Write Line
Prints a string or the value of a string variable to the Output panel. By default, this activity is also included in the Favorites group.

Is Match Download Example
Indicates whether the specified regular expression finds a match in the specified input string, using the specified matching options. This activity has a RegEx Builder wizard

Replace Download Example
Within a specified input string, replaces strings that match a regular expression pattern with a specified replacement string. This activity has a RegEx Builder wizard that can be

Add Data Row Download Example
Adds a DataRow to a specified DataTable.

Build Data Table Download Example
Creates a DataTable according to a specified schema.

Clear Data Table Download Example
Clears all the data in the specified DataTable.

Get Row Item Download Example
Gets a value from a DataRow variable according to a specified column.

Merge Data Table Download Example
Merges the specified DataTable with the current DataTable, indicating whether to preserve changes and how to handle missing schema in the current DataTable.

Output Data Table Download Example
Writes a DataTable to a string using the CSV format.

Remove Data Row Download Example
Removes a DataRow from a specified DataTable.

For Each Row Download Example
Executes an action once for each row in a specified DataTable variable.

Comment Out
A container where you can add activities that won't be executed at runtime.

Log Message
Writes the specified diagnostic message at the specified level. These messages are also sent to Orchestrator and displayed in the Logs page.

Lookup Data Table Download Example
This activity enables you to search for a provided value in a specified DataTable and returns the RowIndex at which it was found. This activity can also help you return the value found in the cell that has the row coordinates specified in the RowIndex property and the column coordinates specified in the Target Column property category.

Filter Data Table Download Example
Enables you to filter a DataTable variable by specifying conditions in the Filter Wizard window. The activity can keep or delete rows or columns according to the logical conditions that are specified in the wizard. The body of the activity contains a Filter Wizard button so that you can access the wizard and customize your settings at any time.

Sort Data Table Download Example
Sorts an entire DataTable by ascending or descending order, based on the values of a specified column.

Join Data Tables
Combines rows from two tables by using values common to each other, according to a Join rule, which is specified in the JoinType property.

SYSTEM

Append Line
Appends the specified string to a file, creating the file if it does not already exist.

Copy File
Copies a file from a specified location to another.

Create Directory
Creates a directory in the specified location.

Create File
Creates a file in the specified location.

Delete
Deletes the file or folder in the specified location.

Move File
Moves a file from a specified location to another.

Path Exists
Checks if the specified path exists. The path can represent a file path or a directory path.

Read Text File
Reads all characters from a specified file and stores it in a String variable.

Write Text File
Writes the specified text into a file. The pre-existing text is overwritten.

Input Dialog
Displays a dialog box that prompts the user with a label message and an input field.

Message Box
Displays a message box with a given text with the button options.

Select File
Opens a dialog box to select a file.

Select Folder
Opens a dialog box to select a folder.

WORKFLOW

For Each
Performs an activity or a series of activities on each element of a collection.

Break
Exits the For Each activity and continues the workflow with the activity that follows it.

Invoke Workflow File
Synchronously invokes a specified workflow, optionally passing it a list of input arguments. Arguments can be imported from a specified workflow with this activity by using the Import Arguments button in the body of the activity.

Invoke Code Download Example
Synchronously invokes VB.NET or C# code, optionally passing it a list of input arguments. This activity can also return out arguments to the caller workflow.

Multiple Assign
Performs multiple assign actions simultaneously, enabling you to assign values to multiple variables at a time.

Run Parallel Process
Runs a specified process in Orchestrator with an optional list of input arguments.

ORCHESTRATOR

Get Asset
Gets a specified asset by using a provided AssetName. If the asset is not global, it must be assigned to the local robot in order to be retrieved.

Get Credential
Gets a specified credential by using a provided AssetName, and returns a username and a secure password.

Set Asset
Enables you to update the value of an indicated asset, that is already available in Orchestrator, be it a global or a Per Robot asset. Please note that to execute this activity,

Set Credential
Enables you to update the value of an indicated credential asset, that is already available in Orchestrator, be it a global or a Per Robot asset. Please note that to execute this activity, the Robot role needs to have Edit permissions on assets. The activity runs under the Robot which executes it.

Add Queue Item
Adds a new item in the queue. The status of the item will be New. An example of how to use this activity is available here.

Add Transaction Item
Adds a new item in the queue and starts a transaction. The status of the item is set to InProgress. Returns the item as a QueueItem variable.

Delete Queue Items
Enables you to delete items with the New state from a specified queue. Please note that in order to execute this activity in Studio, the Robot has to be connected to Orchestrator and the Robot role needs Edit, Create, and Delete permissions on queues and Delete permissions on transactions. The activity runs under the Robot which executes it.

Get Queue Items
Enables you to retrieve a list of up to 100 transactions from an indicated queue, according to multiple filters, such as creation date, priority, state and reference.
An example of how to use this activity is available here.

Get Transaction Item
Gets an item from the queue so that you can process it (start the transaction) and sets its status to In Progress. Please note that to execute this activity, the Robot role needs to have Edit permissions on queues. The activity runs under the Robot which executes it. If the queue is empty, the following error is thrown upon accessing the retrieved TransactionItem: System.Exception:

Set Transaction Progress
Helps you create custom progress statuses for your In Progress transactions. An example of how to use this activity is available here.

Set Transaction Status
Sets the status of a transaction item to Failed or Successful. An example of how you can use this activity is available here.

Should Stop
Checks if somebody stopped a running job using the Stop option in UiPath Orchestrator. This activity assures a smooth termination of a job since it prevents the sudden interruption of an ongoing process. It also allows the user to configure the workflow such that it performs various routines after the stop is triggered. You can, for example, perform a "clean up" routine to close windows and applications which have been targeted within the workflow.

Wait Queue Item
Retrieves a queue item from a specified queue and stores it in a QueueItem variable. This activity is different from the Get Transaction Item activity as, at runtime, in case the specified queue is empty, it sends a message to Orchestrator stating it is ready to receive a queue item and then waits for a new queue item to be added to the specified queue. Once retrieved, the status of the queue item is set to In Progress.

Bulk Add Queue Items
Adds a collection of items from a specified DataTable to a specified queue in Orchestrator. Once added to the queue, the items' statuses are changed to New.

EXCEL ACTIVITIES

APP INTEGRATION

Append To CSV Download Example
Appends the specified DataTable to a CSV file, creating the file if it does not already exist.

Read CSV Download Example
Reads all entries from a specified CSV file.

Write CSV Download Example
Overwrites a specified DataTable to a CSV file.

Filter Table Download Example
Filters a table from a spreadsheet based on existing values from a column. Can only be used in the Excel Application Scope activity.

Sort Table Download Example
Sorts a table from a spreadsheet based on the values of a column. The table can only be sorted ascending or descending. Can only be used in the Excel Application Scope activity.

Append Range Download Example
Adds the information stored in a DataTable variable to the end of a specified Excel spreadsheet. If the sheet does not exist, a new one is created with the name indicated in the SheetName field.

Close Workbook Download Example
Closes an opened Excel workbook.

Excel Application Scope Download Example
Opens an Excel workbook and provides a scope for Excel Activities. When the execution of this activity ends, the specified workbook and the Excel application are closed. If a WorkbookApplication variable is provided in the Output > Workbook property field, the spreadsheet is not closed after the activity ends. If the specified file does not exist, a new Excel file is created. This activity can only be used if the Microsoft Excel application is installed on your machine.

Read Cell Download Example
Reads the value of an Excel cell and stores it in a variable. Can only be used inside the Excel Application Scope activity.

Read Range Download Example
Reads the value of an Excel range and stores it in a DataTable variable. If the range isn't specified, the whole spreadsheet is read. If the range is specified as a cell, the whole spreadsheet starting from that cell is read. Can only be used in the Excel Application Scope activity.

Write Cell Download Example
Writes a value or formula into a specified spreadsheet cell or a range. If the sheet does not exist, a new one is created with the name specified in the SheetName property. If a value exists, it is overwritten. Changes are immediately saved. Can only be used in the Excel Application Scope activity.

Write Range Download Example
Writes the data from a DataTable variable in a spreadsheet starting with the cell indicated in the StartingCell field. If the starting cell isn't specified, the data is written starting from the A1 cell. If the sheet does not exist, a new one is created with the value specified in the SheetName property. All cells within the specified range are overwritten. Changes are immediately saved. Can only be used in the Excel Application Scope8 activity.

SYSTEM

Append Range
Adds the information stored in a DataTable variable to the end of a specified Excel spreadsheet. If the sheet does not exist, a new one is created with the name indicated in the SheetName field.

Read Range
Reads the value of an Excel range and stores it in a DataTable variable. If the range isn't specified, the whole spreadsheet is read. If the range is specified as a cell, the whole spreadsheet starting from that cell is read.

Write Cell
Writes a value into a specified spreadsheet cell or a range. If the sheet does not exist, a new one is created with the SheetName value. If a value exists, it is overwritten. Changes are immediately saved.

Write Range
Writes the data from a DataTable variable in a spreadsheet starting with the cell indicated in the StartingCell field. If the starting cell isn't specified, the data is written starting from the A1 cell. If the sheet does not exist, a new one is created with the SheetName value. All cells within the specified range are overwritten. Changes are immediately saved.

MAIL ACTIVITIES

Save Mail Message
Saves the email message to the specified folder. If the folder doesn't exists, it is created. If no folder is specified, the downloads are saved in the project folder. Files in the specified folder with the same name as the messages are overwritten.

Save Attachments
Saves the mail message attachments to the specified folder. If the folder doesn't exists, it is created. If no folder is specified, the downloads are saved in the project folder. Files in the specified folder with the same name as the attachments are overwritten.

Send SMTP Mail Message
Sends an email message by using the SMTP protocol.

Get IMAP Mail Messages
Retrieves an IMAP email message from a specified server.

Move IMAP Mail Message
Moves an IMAP email message to a specified folder.

Get Outlook Mail Messages
Retrieves email messages from Outlook.

Move Outlook Mail Message
Moves an Outlook email message to a specified folder.

Send Outlook Mail Message
Sends an email message from Outlook.

Reply To Outlook Mail Message
Replies to an email message using Outlook.

PDF ACTIVITIES

Read PDF Text Download Example
Reads all characters from a specified PDF file and stores them in a string variable.

Read PDF With OCR Download Example
Reads all characters from a specified PDF file and stores it in a string variable by using OCR technology.

Extract Images From PDF
Extracts images from a specified PDF file.

Join PDF Files
Joins multiple PDF files stored in an array of strings into a single PDF file.

PYTHON ACTIVITIES

Python Scope
A container which provides a scope for Python activities and initializes the specified Python environment. When the Python Scope activity ends, all Python objects loaded up to that point are deleted.

Get Python Object
Converts a Python.Object variable returned by other Python activities such as Load Python Script into a .NET datatype of your choice. Can only be used inside the Python Scope activity.

Invoke Python Method
Helps you run a specified method from a Python script directly in a workflow. The script that contains the method needs to be loaded into the environment first by using the Load Python Script activity. Can only be used inside the Python Scope activity.

Load Python Script
Enables you to store the handlers of a Python script in a PythonObject variable. You can use the resulting variable to invoke the methods within the code. If there is inline code besides the methods present in the script, the code is also executed at runtime. Can only be used inside the Python Scope activity.
Due to a software limitation, this activity uses, by default, the installation location of the Python activities pack as the run directory for the script. To change this, and to be able to use relative paths inside the script, you can add the following code to the loaded script as a workaround:

Run Python Script
Enables you to execute Python code. You can input the code directly in the activity or provide a file path for it. Can only be used inside the Python Scope activity.
Due to a software limitation, this activity uses, by default, the installation location of the Python activities pack as the run directory for the script. To change this, and to be able to use relative paths inside the script, you can add the following code to the loaded script as a workaround:

GOOGLE VISION ACTIVITIES

Google Vision Scope
Handles the connection client and authentication for Google Vision activities. The Google Vision activities work with the account specified inside the Application Scope. Multiple authentication types are available.

Logo Detection
Searches for logos inside a specified image.

Label Detection
Generates description labels for the specified image.

Text Detection
Identifies and retrieves text inside the image.

Face Detection
Identifies and retrieves faces inside the image.

Handwriting Detection
Identifies and reads the handwritten text in an image.

MICROSOFT VISION ACTIVITIES

Microsoft Vision Scope
A container that handles the connection to the Microsoft Vision API and provides a scope for all Microsoft Vision Activities.

Read Handwritten Text
Identifies and reads handwritten text within the image.

Detect Faces
Identifies and retrieves faces inside the image and gives information on the gender and age of the identified persons.

Generate Tags
Generates a list of tags for individual objects found within the specified image.

Read Text
Reads the text from the specified image and gives information on the positioning of the text inside the image.

Microsoft Vision generate description
Describes, in human-readable language, what is seen in an image.

Analyze Image
Generic Microsoft Vision call.

Get Color
Returns the dominant foreground and background colors, a list of dominant colors and specifies whether the image is black & white.

REFERENCE

That is all for the most common UiPath activities used in enterprise projects. There are hundreds more activities. Here is where you can find documentation of the remaining activities:
docs.uipath.com/activities

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