

CHAPTER 5

Mail Automation

Email is essential for organizing, communicating, and calendaring in our day-to-day. UiPath StudioX Mail automation enables business users to be able to automate those tasks to focus on the more creative high-value tasks. Often, a mailbox is the initial input of automation, and moving emails across mailbox folders can be a way to indicate the progress of a process, or the mailbox folder can serve as an exception folder for human review. It is also vital in providing a way for the robot to notify a user there may be a pending task or a way to automate communication by sending emails based on given business rules.

Learning Objectives

At the end of this chapter, you will learn how to

- Define a Desktop Outlook, Outlook 365, and Gmail account scope to automate
- Move emails to another folder
- Mark email as read or unread
- Forward emails
- Save attachments and emails
- Archive emails

- Send emails and calendar invites
- Reply to an email
- Delete emails

Sample Overview

Throughout this chapter, we will be using a simplified version of the initial recruitment screening process to showcase the usage of all Mail automation activities. Concepts discussed in this chapter can be applied across various areas of business, for example, vendor management, procurement, sales, and other processes within human resources.

This section will familiarize you with the prerequisites for all exercises in this chapter.

Desktop Outlook Setup

First, create a new **Initial Screen** folder inside the **Inbox** of the email account that you are going to use for automation. Figure 5-1 shows the Outlook folder structure.

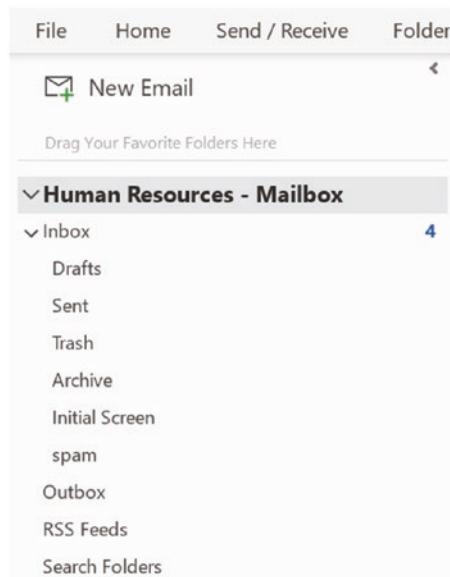


Figure 5-1. Human Resources department Outlook folder structure

File System Structure

Next, download the source code from the book's site, and make sure you move the entire BookSamples folder to your C:\ drive. All exercises in this chapter assume the folder paths will be **C:\BookSamples\Chapter_05**. Figure 5-2 shows the physical folder structure required for this sample. This folder structure comes with the source code.

This PC > OS (C:) > BookSamples > Chapter_05			
Name	Date modified	Type	Size
Downloads	9/13/2020 9:29 AM	File folder	
EmailTemplates	9/13/2020 10:14 PM	File folder	
PreparationGuide	9/13/2020 9:58 AM	File folder	
SampleEmails	9/13/2020 10:14 PM	File folder	
Job_Posting_Details	9/13/2020 9:59 PM	Microsoft Excel Worksheet	11 KB

Figure 5-2. Folder structure used for the Initial Recruitment Screening exercise

Downloads: This folder is where email files and resumes will be saved for review and record purposes.

EmailTemplates: This folder contains a Word document that will be used to incorporate HTML-rich email bodies.

PreparationGuide: This folder will be sent as preparation material for interview candidates.

SampleEmails: This folder contains sample emails used in this chapter. You can drag and drop them to the email inbox that you are using for automation.

Job_Posting_Details.xlsx: This is an Excel file, shown in Figure 5-3, with details related to the hiring positions that will be referenced in Outlook email details.

A	B	C	D	E	F	G	H	I	J	K	L
Job Title		Job Posting ID	Hiring Manager	Hiring Manager Email	Personal Meeting Room						
1. Senior Customer Service Representative	88975 Jane Doe	Jane.Doe@company.com	https://company.meeting.com/712738								
2. Software Engineer II	234759 John Smith	John.Smith@company.com	https://company.meeting.com/783121								
3. Enterprise Account Executive	957179 Bryan Johnson	Bryan.Johnson@company.com	https://company.meeting.com/585093								
4.											
5.											
6.											

Figure 5-3. Job_Posting_Details Excel file with posting details

Activities Reference

As shown in Figure 5-4, all Mail automation activities can be found under the Mail category. The following sections will provide instructions on how to configure and use each activity.

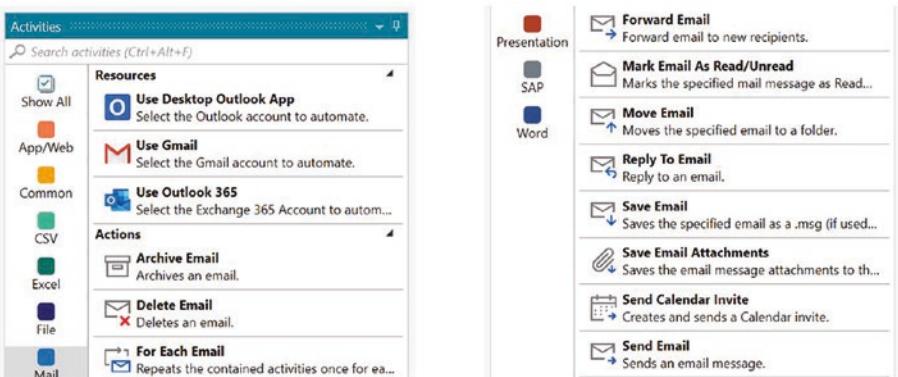


Figure 5-4. Activities for Mail automation

Use Desktop Outlook App

The **Use Desktop Outlook App** activity allows you to select the Outlook account to automate that is already configured in the Outlook desktop application.

This activity will contain all the actions that you want to take on the Outlook account. For example, suppose you want to send an email. In that case, the **Send Email** activity will be nested in the body of **Use Desktop Outlook App** activity.

Configuration

This section provides instructions on how to configure a **Use Desktop Outlook App** activity, shown in Figure 5-5.

Note To configure this activity, make sure your Microsoft Outlook desktop application is configured and signed in.

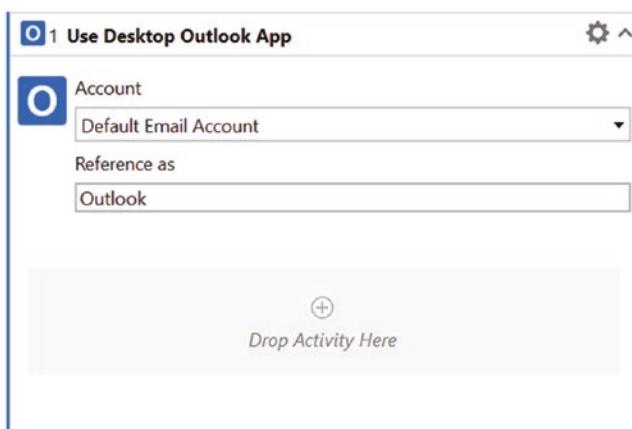


Figure 5-5. Activity card for Use Desktop Outlook App

Account: This is a required configuration available on the activity card. This configuration allows you to specify the Outlook account email address you plan to automate. By default, your Default Email Account is selected. If you have multiple Outlook accounts, then you can use the dropdown to select the appropriate account.

Tip Leaving the account as the Default Email Account option makes it easy to share the automation with other users. This way, automation is designed to run on the Outlook account of the workstation the process is executing from.

Reference as: This is a required configuration available on the activity card. This configuration allows you to provide a name for your Outlook account. All the activities that need to use the selected Outlook account will reference it by this name.

Use Outlook 365

The **Use Outlook 365** activity allows you to select the Exchange account to automate.

This activity will contain all the actions that you want to take on the Exchange account. For example, suppose you want to send an email. In that case, the **Send Email** activity will be nested in the body of **Use Outlook 365** activity.

Configuration

This section provides instructions on how to configure a **Use Outlook 365** activity, shown in Figure 5-6.

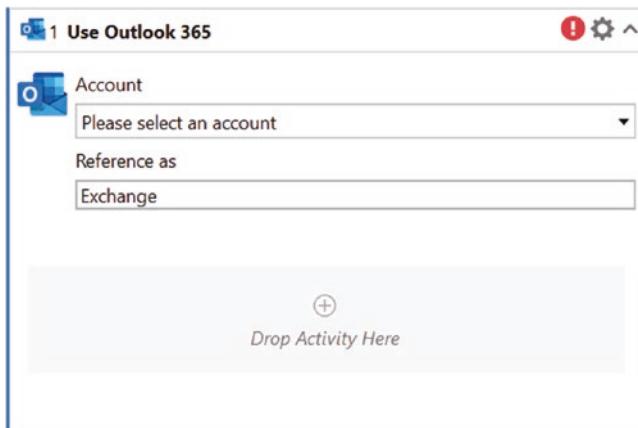


Figure 5-6. Activity card for Use Outlook 365

Account: This is a required configuration available on the activity card. This configuration allows you to specify or add the Outlook 365 account email address you plan to automate. Figure 5-7 shows the screen to add a new Exchange account. The organization's IT department will most likely provide this information.

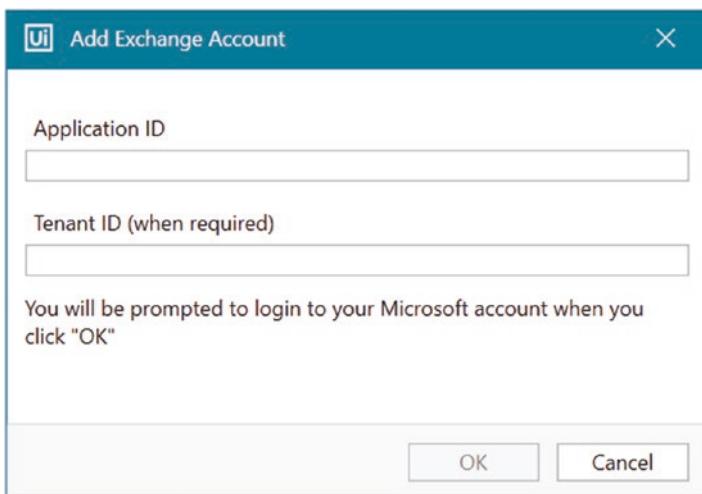


Figure 5-7. Add Exchange Account screen

Reference as: This is a required configuration available on the activity card. This configuration allows you to provide a name for your email account. All the activities that need to use the selected Exchange account will reference it by this name.

Use Gmail

The **Use Gmail** activity allows you to integrate with Gmail and Google Calendar to automate email activities for the Gmail account.

This activity will contain all the actions that you want to take on the Gmail account. For example, suppose you want to send an email. In that case, the **Send Email** activity will be nested in the body of **Use Gmail** activity.

Configuration

This section provides instructions on how to configure a **Use Gmail**, shown in Figure 5-8.

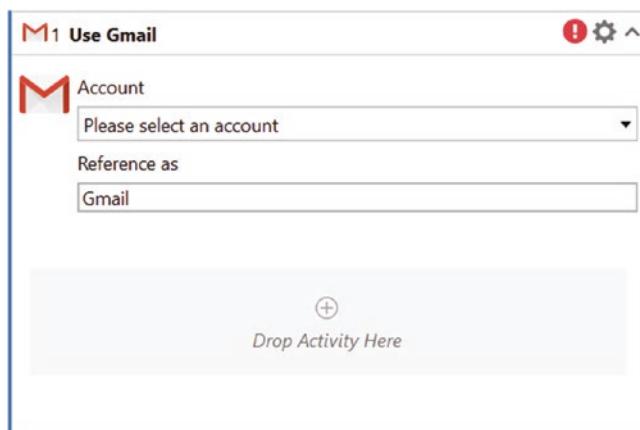


Figure 5-8. Activity card for Use Gmail

Account: This is a required configuration available on the activity card. This configuration allows you to specify the Gmail account email address you plan to automate. Figure 5-9 shows the screen to add a new Exchange account. The organization's IT department will most likely provide this information.

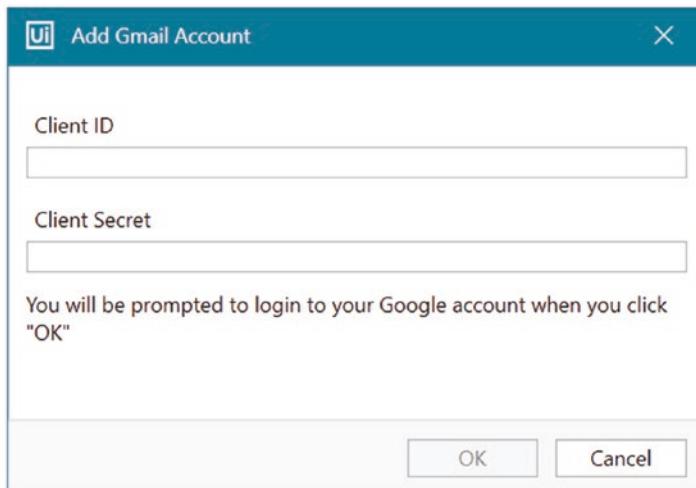


Figure 5-9. Add Gmail Account screen

Reference as: This is a required configuration available on the activity card. This configuration allows you to provide a name for your Gmail account. All the activities that need to use the selected Gmail account will reference it by this name.

For Each Email

The **For Each Email** activity allows you to repeat a sequence of activities for each email in a specific folder. This activity can be configured to filter for a specific number of emails, unread mail messages, emails with attachments only, and additional advanced custom filters.

Configuration

This section provides instructions on how to configure a **For Each Email** activity, shown in Figure 5-10.

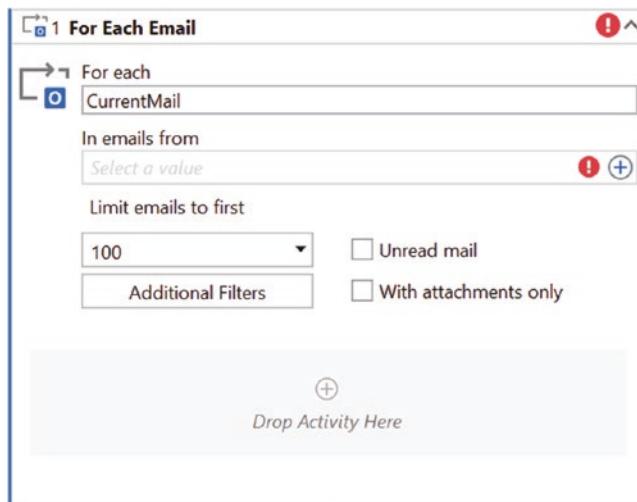


Figure 5-10. Activity card for For Each Email

For each: This is a required configuration available on the activity card. This configuration allows you to specify a name to reference each email within the activity card. By default, the value is set to CurrentMail.

In emails from: This is a required configuration available on the activity card. When placed within one of the Use Desktop Outlook App, Use Outlook 365, or Use Gmail activities, the folders within the specified account are auto-populated as options. You can select the mail folder from which you want this activity to read emails.

Limit emails to first: This is a required configuration available on the activity card. This configuration allows you to specify the number of emails to read from the specified folder. By default, this is set to 100.

Unread mail: This is an optional configuration available on the activity card. When checked, only unread messages will be iterated. By default, this option is unchecked.

With attachments only: This is an optional configuration available on the activity card. When checked, only emails with attachments will be iterated. By default, this option is unchecked.

Additional Filters: This is an optional configuration available on the activity card. This configuration allows you to create additional mail filters. As shown in Figure 5-11, you can build conditional statements to filter emails by specific attributes.



Figure 5-11. Additional Filters of the For Each Email activity

EXERCISE

Goal: Utilize the Use Desktop Outlook App and For Each Email activities to read all unread emails from the Human Resources email inbox and print the subjects in the Output panel. Figure 5-12 shows the current state of the inbox.

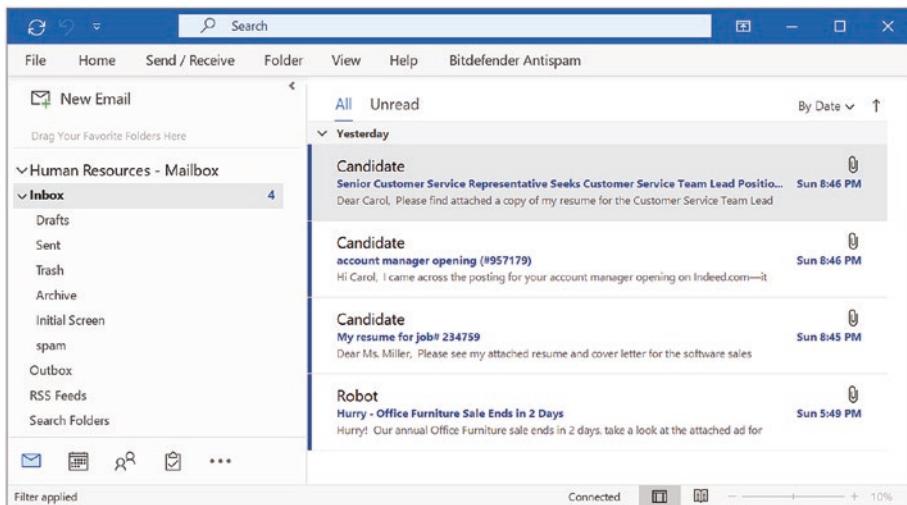


Figure 5-12. The initial state of the Human Resources email inbox

Source Code: Chapter_5-MailAutomationExercise

Setup: Here are step-by-step implementation instructions:

1. In StudioX, click the Notebook menu, and select Configure Notebook.
2. In the Notebook file field of the Configure Notebook screen, select the C:\BookSamples\Chapter_05\Job_Posting_Details.xlsx file. Click OK.
3. In the Designer panel, add the Use Desktop Outlook App activity to a blank process.
4. Select the appropriate email from the Account dropdown. For this exercise, we will specify the Default Email Account.

5. Next, add the **For Each Email** activity inside the body of Use Desktop Outlook App activity.
6. Leave the **For each** field with the default value of **CurrentMail**.
7. In the **In emails from** field, click the Plus icon and hover to select the **Outlook ➤ Inbox** folder.
8. Select **No Limit** from the **List emails to first** dropdown to include all emails from the inbox folder.
9. Select the **Unread mail** option.
10. Next, add a **Write Line** activity in the body of **For Each Email** activity.
11. In the **Text** field, click the Plus icon, and select **CurrentMail ➤ Subject** option.

Once you have completed the exercise, the final configuration of the **For Each Email** activity should resemble Figure 5-13. Figure 5-14 shows the list of received emails in the Output panel.

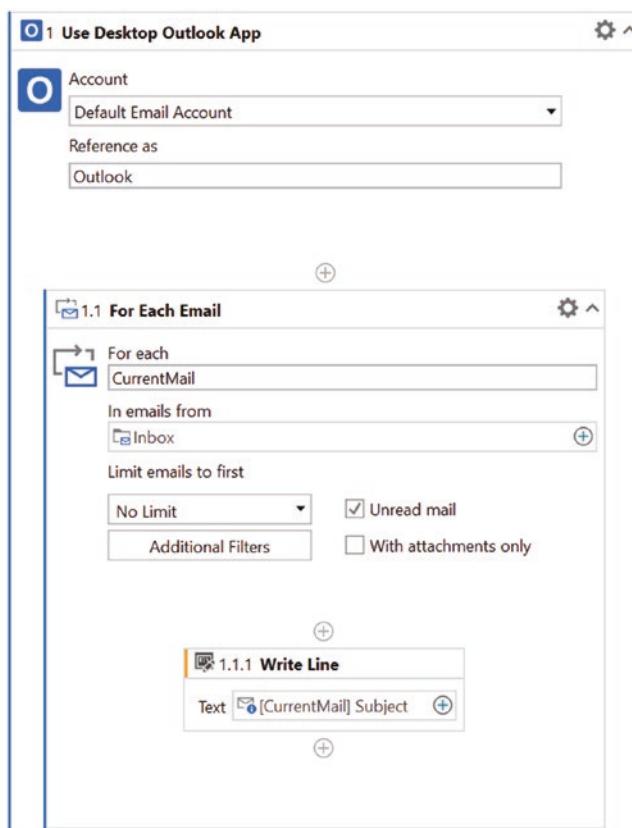


Figure 5-13. Final configuration of the For Each Email activity exercise



Figure 5-14. The output of the For Each Email activity exercise

Mark Email As Read/Unread

The **Mark Email As Read/Unread** activity allows you to mark a specified email message as read or unread.

Configuration

This section provides instructions on how to configure a **Mark Email As Read/Unread** activity, shown in Figure 5-15.



Figure 5-15. Activity card for *Mark Email As Read/Unread*

Email: This is a required configuration available on the activity card. This configuration specifies the email whose state needs to be updated.

In the case of the Desktop Outlook app, you can also specify the email that is currently selected by choosing the **Outlook > Selected Email** option. This will act on the selected email at execution time.

If used in a **For Each Email** activity, you can specify the **CurrentMail** message in the loop.

Mark as: This is a required configuration available on the activity card. This configuration allows you to set the email state as Read or Unread. By default, the value is Read.

EXERCISE

Goal: Building on our previous exercise, use the **Mark Email As Read/Unread** activity to mark all emails in the inbox as read. Figure 5-12 shows the current state of the inbox.

Source Code: Chapter_5-MailAutomationExercise

Setup: Here are step-by-step implementation instructions:

1. In StudioX, add a **Mark Email As Read/Unread** activity within the **For Each Email** activity after the **Write Line** activity. No additional configuration is needed. By default, the **CurrentMail** is selected, and the email state is set as **Read**.

Once you have completed the exercise, the final configuration of the **Mark Email As Read/Unread** activity should resemble Figure 5-16. Once the automation runs, all emails in the inbox are marked as read, as shown in Figure 5-17.



Figure 5-16. Final configuration for *Mark Email As Read/Unread* exercise

CHAPTER 5 MAIL AUTOMATION

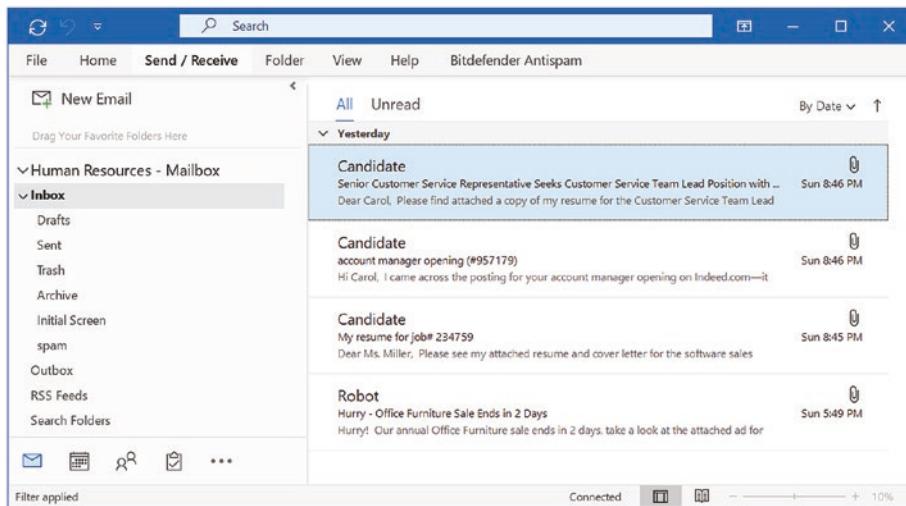


Figure 5-17. The state of the Human Resources email inbox after the Mark Email As Read/Unread exercise

Forward Email

The **Forward Email** activity allows you to forward an email to a specific recipient.

Configuration

This section provides instructions on how to configure a **Forward Email** activity, shown in Figure 5-18.

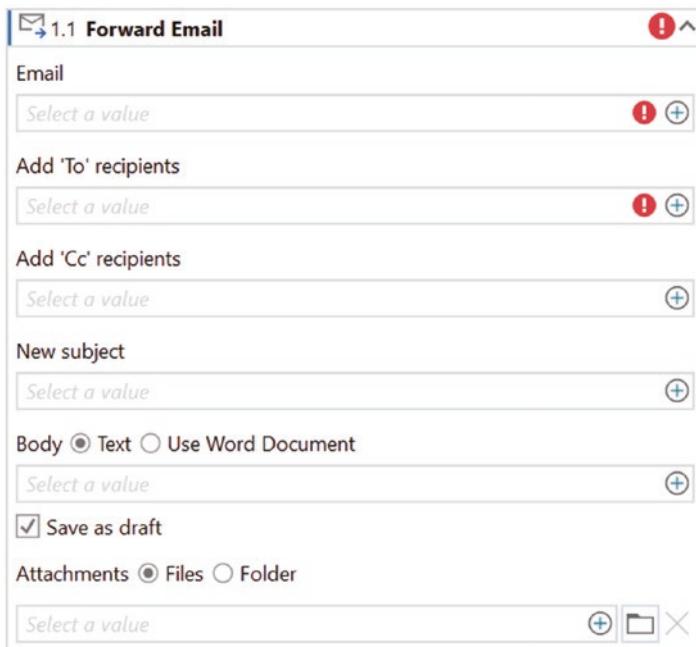


Figure 5-18. Activity card for Forward Email

Email: This is a required configuration available on the activity card. This configuration allows you to specify the email that will be forwarded.

In the case of the Desktop Outlook app, you can also specify the email that is currently selected by choosing the **Outlook > Selected Email** option. This will act on the selected email at execution time.

If used in a **For Each Email** activity, you can specify the **CurrentMail** message in the loop.

Add 'To' recipients: This is a required configuration available on the activity card. This configuration specifies the email recipient(s) of the forwarded email.

Add 'Cc' recipients: This is an optional configuration available on the activity card. This configuration specifies the secondary email recipient(s) of the forwarded message.

Add ‘Bcc’ recipients: This is an optional configuration available on the Properties panel. This configuration specifies the hidden email recipient(s) of the forwarded message.

New subject: This is an optional configuration available on the activity card. If specified, the subject of the forwarded email will be changed. Otherwise, the original subject will be used.

Body: This is an optional configuration available on the activity card. You can select the Text option to type in the body text or select the Use Word Document option to specify the file path of a Word document that will be used as an email body.

Save as draft: This is an optional configuration available on the activity card. This configuration is check-marked by default, indicating email will be saved as a draft. This is encouraged to be set during development time.

Attachments: This is an optional configuration available on the activity card. You can type or browse for a file or folder to attach to the forwarded email.

Max body document size: This is an optional configuration available on the Properties panel. You can specify the maximum size of the Word document that is being used in body text. By default, the size is set to 2 MB.

Sent on behalf of: This is an optional configuration available on the Properties panel. You can specify an email address that will show up as on behalf of in the From field of the forwarded email.

EXERCISE

Goal: Building on our previous exercise, use the Forward Email activity to forward the email message to the hiring manager if it is related to Job Req 888701. Hiring manager information will be read from cell D2 of the Job_Posting_Details notebook. Figure 5-17 shows the current state of the inbox.

Source Code: Chapter_5-MailAutomationExercise

Setup: Here are step-by-step implementation instructions:

1. In StudioX, add an If activity within the For Each Email activity after the Mark Email As Read/Unread activity. This will be used to filter for emails where the subject contains the Job Req id 888701.
2. In the Condition field of the If activity, click the Plus icon, and open the Condition Builder.
3. On the left side of the condition, click the Plus icon, and hover over CurrentMail to select Subject.
4. In the condition dropdown, select contains.
5. On the right side of the condition, click the Plus icon, hover over Notebook, and select Indicate in Excel. Select cell B2 and click Confirm. Figure 5-19 shows the complete condition. This condition is checking if the subject of the current email contains the job req id mentioned in cell B2 of Job Postings sheet of the Job_Posting_Details.xlsx worksheet.

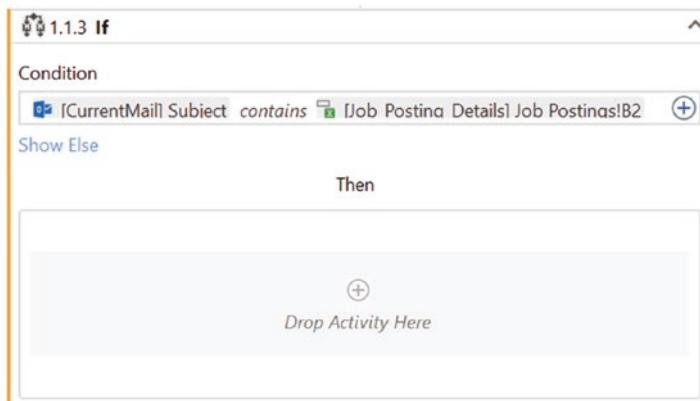


Figure 5-19. Condition to check if the email subject contains a specific job req id

CHAPTER 5 MAIL AUTOMATION

6. Next, add the Forward Email activity in the Then block of If activity.
7. Leave the Email field with the default value, that is, CurrentMail.
8. In the Add 'To' recipients field, click the Plus icon and hover over Notebook to select Indicate in Excel option.
9. Within the Excel file, select cell D2 to specify the relevant hiring manager's email and click Confirm, as shown in Figure 5-20.

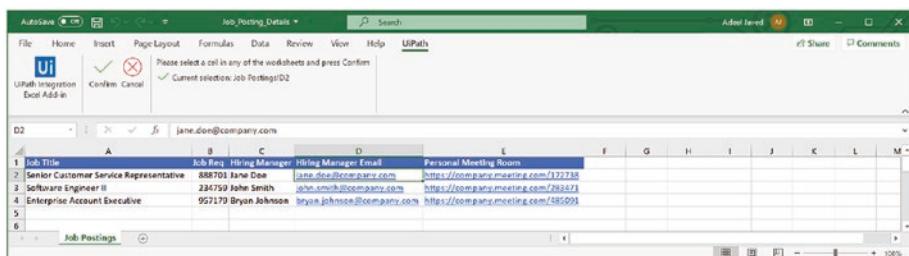


Figure 5-20. Selecting the hiring manager to forward the email to

10. Select the Plus icon of the New subject field and select the Text option. Within the Text Builder, type Please review candidate.
11. Within the Text Builder, click the Plus icon and hover over CurrentMail and choose From.
12. Within the Text Builder, type for position.
13. Within the Text Builder, click the Plus icon again to hover over Notebook to select Indicate in Excel. Select cell A2 within the Excel file and click Confirm. This will add the job title to the forwarded email's new subject line. At this point, Text Builder should resemble Figure 5-21. Click Save.

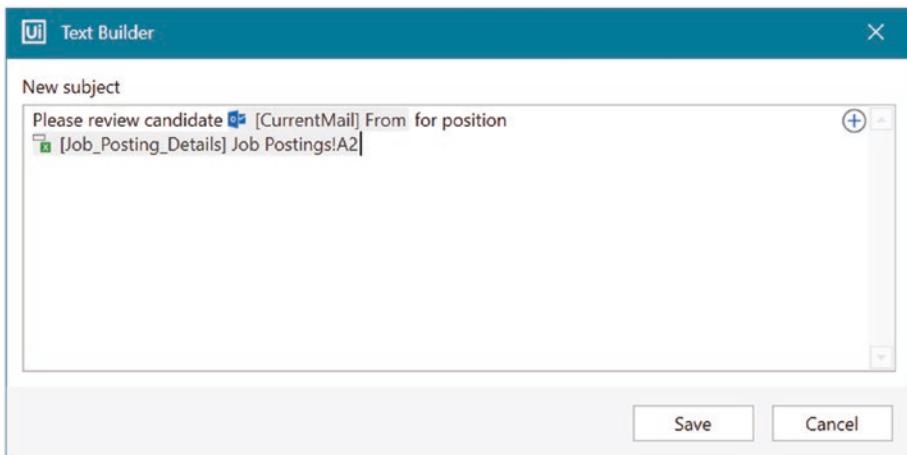


Figure 5-21. Configuration of new subject of forwarded email

14. Next, in the Body field, click the Plus icon, select the Text option, and type Here are the forwarded details of the candidate. Click Save.
15. Leave the Save as draft option as checked.

Once you have completed the exercise, the final configuration of the **Forward Email** activity should resemble Figure 5-22. Figure 5-23 shows the email in the Drafts folder that was created by this activity.

CHAPTER 5 MAIL AUTOMATION

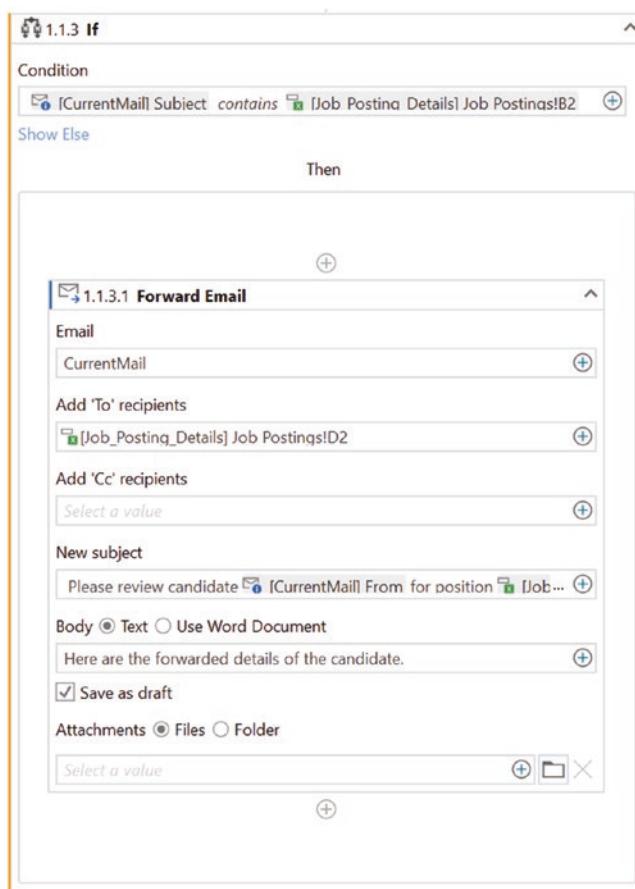


Figure 5-22. Final configuration for Forward Email activity exercise

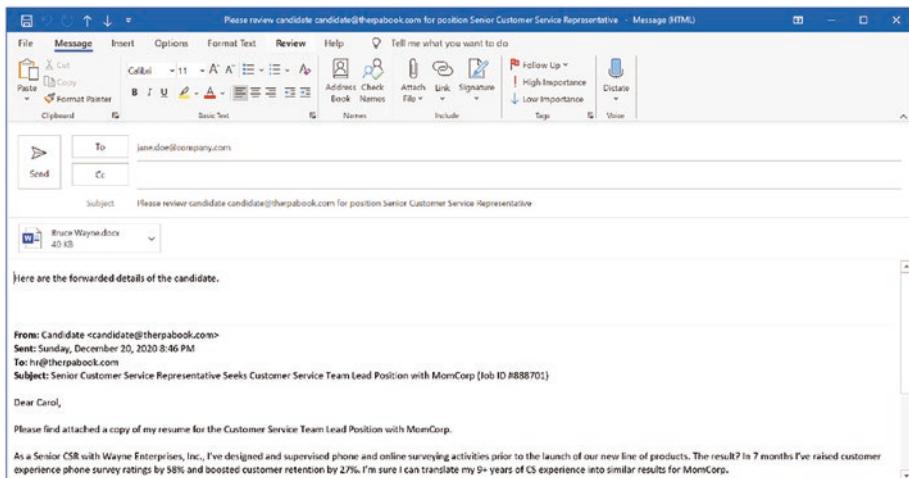


Figure 5-23. Forwarded email in the Drafts folder

Save Email Attachments

The **Save Email Attachments** activity allows you to save email attachments to a specific folder.

Configuration

This section provides instructions on how to configure a **Save Email Attachments** activity, shown in Figure 5-24.



Figure 5-24. Activity card for Save Email Attachments

Email: This is a required configuration available on the activity card. This configuration allows you to specify the email whose attachments need to be saved.

In the case of the Desktop Outlook app, you can also specify the email that is currently selected by choosing the Outlook ► Selected Email option. This will act on the selected email at execution time.

If used in a For Each Email activity, you can specify the CurrentMail message in the loop.

Filter by file name (e.g. *.xls*): This is an optional configuration available on the activity card. You can provide a specific file name, extension or include a wildcard to fit a file name pattern. For example, if you only want to save PDF attachments, then you will enter *.pdf in this field.

Save to folder: This is an optional configuration available on the activity card. This configuration allows you to specify a folder where attachments will be saved. If left blank, it will save to the project folder. If the folder does not exist, it will create one.

Tip In common business processes, this folder is typically a shared network folder, but local for exercise purposes.

Attachments: This is an optional configuration available on the Properties panel. This configuration allows you to save a reference to the downloaded attachments for later use.

EXERCISE

Goal: Building on our previous exercise, use the Save Email Attachments activity to save resumes included in emails related to Job Req 888701.

Attachments will be saved in C:\BookSamples\Chapter_05\Downloads\Resumes folder. Figure 5-17 shows the current state of the inbox.

Source Code: Chapter_5-MailAutomationExercise

Setup: Here are step-by-step implementation instructions:

1. In StudioX, add the Save Email Attachments activity in the Then block of If activity after the Forward Email activity from the previous exercise.
2. Leave the Email field value as CurrentMail.
3. Leave the Filter by file name field blank as we want all file names and extensions saved.
4. In the Save to folder field, click the Folder icon, and select the C:\BookSamples\Chapter_05\Downloads\Resumes folder.

Once you have completed the exercise, the final configuration of the **Save Email Attachments** activity should resemble Figure 5-25. Figure 5-26 shows the target folder that contains attachments saved after this activity was run.



Figure 5-25. Final configuration of Save Email Attachments activity exercise

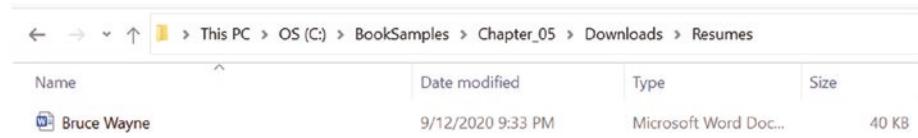


Figure 5-26. Download folder containing saved attachments

Save Email

The **Save Email** activity allows you to save an email message as a .msg or a .eml file in a specified folder.

Configuration

This section provides instructions on how to configure a **Save Email** activity, shown in Figure 5-27.



Figure 5-27. Activity card for Save Email

Email: This is a required configuration available on the activity card. This configuration allows you to specify the email message that will be saved as a .msg file (in case of Outlook) or as a .eml file (in case of Gmail) in the specified folder.

In the case of the Desktop Outlook app, you can also specify the email that is currently selected by choosing the **Outlook > Selected Email** option. This will act on the selected email at execution time.

If used in a **For Each Email** activity, you can specify the **CurrentMail** message in the loop.

Save to folder: This is an optional configuration available on the activity card. This configuration allows you to specify a folder where the email message will be saved. If left blank, it will save to the project folder. If the folder does not exist, it will create one.

Tip In common business processes, this folder is typically a shared network folder but local for exercise purposes.

File name (optional): This is an optional configuration available on the activity card. This configuration allows you to specify the name of the saved file. If left blank, the subject of the email is used as the file name.

EXERCISE

Goal: Building on our previous exercise, use Save Email activity to save the email message in C:\BookSamples\Chapter_05\Downloads\Emails folder if it is related to Job Req 888701. Set the file name as the sender, followed by email received date. Figure 5-17 shows the current state of the inbox.

Source Code: Chapter_5-MailAutomationExercise

Setup: Here are step-by-step implementation instructions:

1. In StudioX, add the Save Email activity in the Then block of If activity after the Save Email Attachments activity from the previous exercise.
2. Leave the Email field value as CurrentMail.
3. In the Save to folder field, select the Folder icon, and browse to specify the C:\BookSamples\Chapter_05\Downloads\Emails folder.
4. From the File name field, click the Plus icon and select the Text option. In the Text Builder, click the Plus icon, hover over CurrentMail, and select From.
5. Next, within the Text Builder, click the Plus icon again, hover over CurrentMail, and select Date (as text). Click Save. This will set the sender, and email received date as the saved message file name.

Once you have completed the exercise, the final configuration of the **Save Email** activity should resemble Figure 5-28. Figure 5-29 shows the target folder that contains attachments saved after this activity was run.

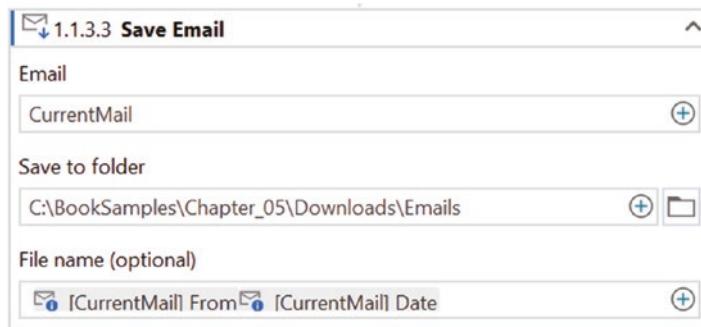


Figure 5-28. Final configuration of Save Email exercise

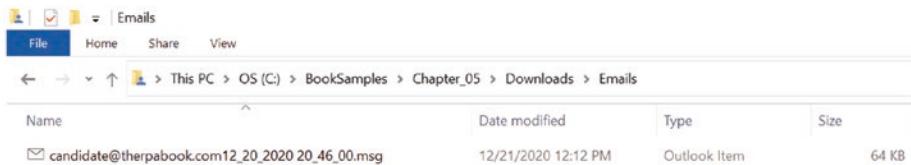


Figure 5-29. Download folder containing saved email messages

Send Email

The **Send Email** activity allows you to send an email message.

Configuration

This section provides instructions on how to configure a **Send Email** activity, shown in Figure 5-30.

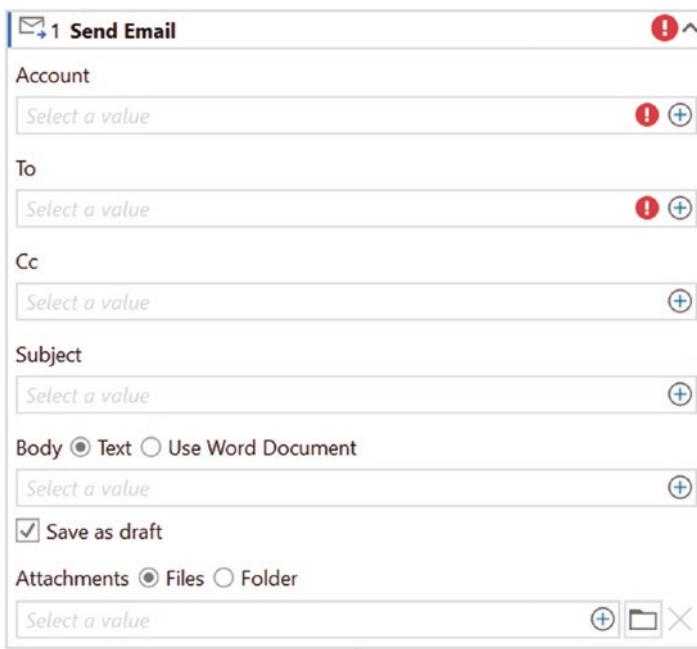


Figure 5-30. Activity card for Send Email

Account: This is a required configuration available on the activity card. This configuration allows you to specify the account email address to send the email from.

To: This is a required configuration available on the activity card. This configuration specifies the recipient(s) of the email.

Cc: This is an optional configuration available on the activity card. This configuration specifies the secondary recipient(s) of the email.

Bcc: This is an optional configuration available on the Properties panel. This configuration specifies the hidden recipient(s) of the email.

Subject: This is an optional configuration available on the activity card. This configuration specifies the subject of the email.

Body: This is an optional configuration available on the activity card. You can select the Text option to type in the body text or select the Use Word Document option to specify the file path of a Word document that will be used as an email body.

Max body document size: This is an optional configuration available on the Properties panel. You can specify the maximum size of the Word document that is being used in the body text. By default, the size is set to 2 MB.

Save as draft: This is an optional configuration available on the activity card. This configuration is check-marked by default, indicating email will be saved as a draft. This is encouraged to be set during development time.

Attachments: This is an optional configuration available on the activity card. You can type or browse for a file or folder to attach to the email.

EXERCISE

Goal: Building on our previous exercise, use the Send Email activity to send the interviewee preparation material if the application is related to Job Req 888701. Figure 5-17 shows the current state of the inbox.

Source Code: Chapter_5-MailAutomationExercise

Setup: Here are step-by-step implementation instructions:

1. In StudioX, add the Send Email activity in the Then block of If activity after the Save Email activity from the previous exercise.
2. Leave the Account field as is with the default value of Outlook.
3. In the To field, click the Plus icon, and hover over CurrentMail to select From. This will set the interviewee as the email recipient.
4. Next, in the Subject field, click the Plus icon, select Text option, and type Interview Prep Material. Click Save.

5. Next, in the Body field, click the Plus icon, select Text option, and type Please review the attached MomCorp Interview Preparation Guide containing helpful links, videos, practice problems. Click Save.
6. Leave the Save draft checked.
7. In the Attachments field, select the Files option, click the Folder icon, and select C:\BookSamples\Chapter_05\PreparationGuide\MomCorp.docx file.

Once you have completed the exercise, the final configuration of the **Send Email** activity should resemble Figure 5-31. Figure 5-32 shows the email in the Drafts folder that was created by this activity.

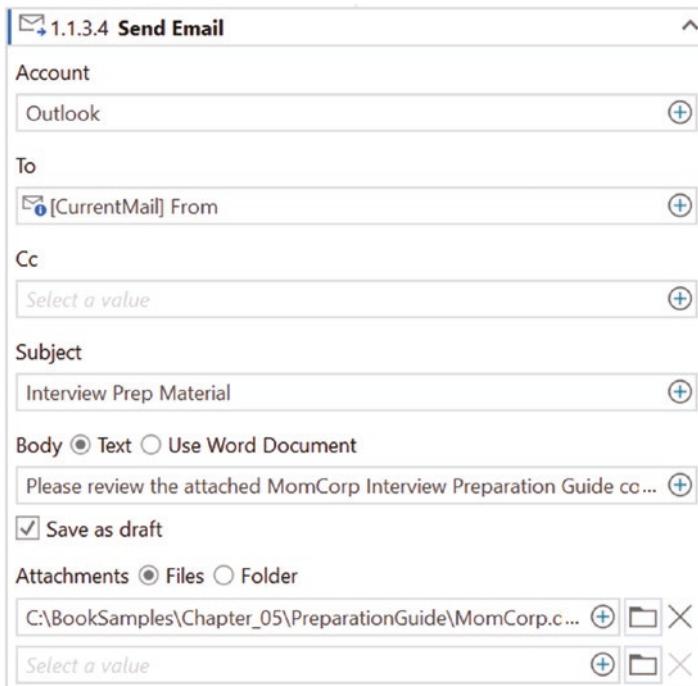


Figure 5-31. Final configuration of Send Email exercise

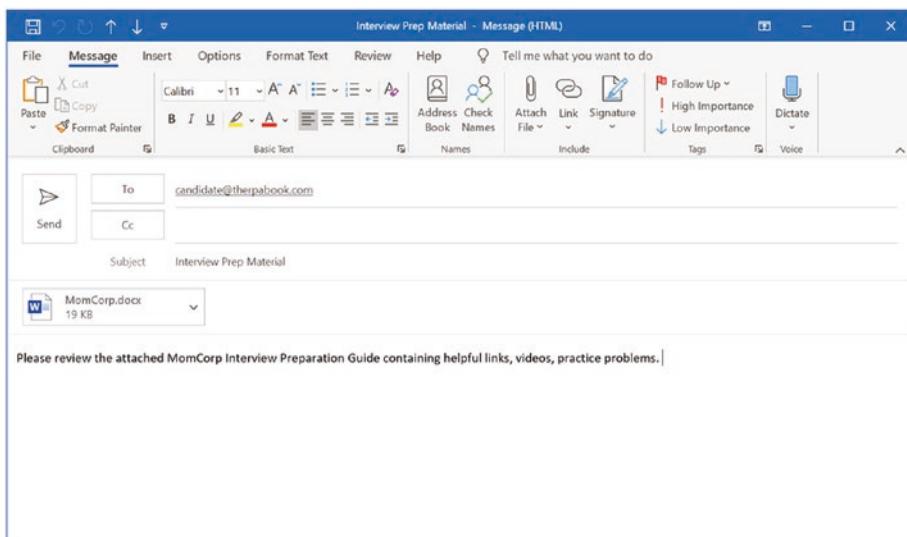


Figure 5-32. New email in the Drafts folder

Send Calendar Invite

The **Send Calendar Invite** activity allows you to create and send a calendar invite.

Configuration

This section provides instructions on how to configure a **Send Calendar Invite** activity, shown in Figure 5-33.

1 Send Calendar Invite

Account
Outlook

Title/Subject
Select a value

Required attendees
Select a value

Optional attendees
Select a value

Start date Start time Duration
Select a value Select a value 30 minute(s)

All day event

Location
Select a value

Description
Select a value

Reminder Show as
15 minute(s) Busy

Recurrence
Configure recurrence

Save without sending

Figure 5-33. Activity card for Send Calendar Invite

Account: This is a required configuration available on the activity card. This configuration allows you to specify the email address account to send the calendar invite from.

Title/Subject: This is an optional configuration available on the activity card. This configuration specifies the title/subject of the calendar invite.

Required attendees: This is an optional configuration available on the activity card. This configuration specifies the participants required to attend the meeting.

Optional attendees: This is an optional configuration available on the activity card. This configuration specifies the participants not required to attend the meeting.

Start date: This is a required configuration available on the activity card. This configuration allows you to specify the start date of the meeting invite.

Start time: This is a required configuration available on the activity card. This configuration allows you to specify the start time of the meeting invite.

Duration: This is a required configuration available on the activity card. This configuration allows you to specify the duration of the meeting. You must provide duration either in hours/minutes/seconds or check the All day event option. If the All day event is checked, it sets the meeting to the full day.

Location: This is an optional configuration available on the activity card. This configuration allows you to specify the location of the meeting.

Description: This is an optional configuration available on the activity card. This configuration allows you to specify the description or body of the meeting invite in Text format.

Reminder: This is a required configuration available on the activity card. This configuration allows you to specify when to show the meeting reminder. By default, the value is set to 15 minute(s).

Show as: This is a required configuration available on the activity card. This configuration allows you to specify how the meeting is marked on participants' calendars. You can select one of these options Free, Tentative, Busy, or Out of Office. By default, this is set to Busy.

Recurrence: This is an optional configuration available on the activity card. This configuration allows you to set the meeting to repeat on a defined frequency. Figure 5-34 shows the configuration to define recurrence.

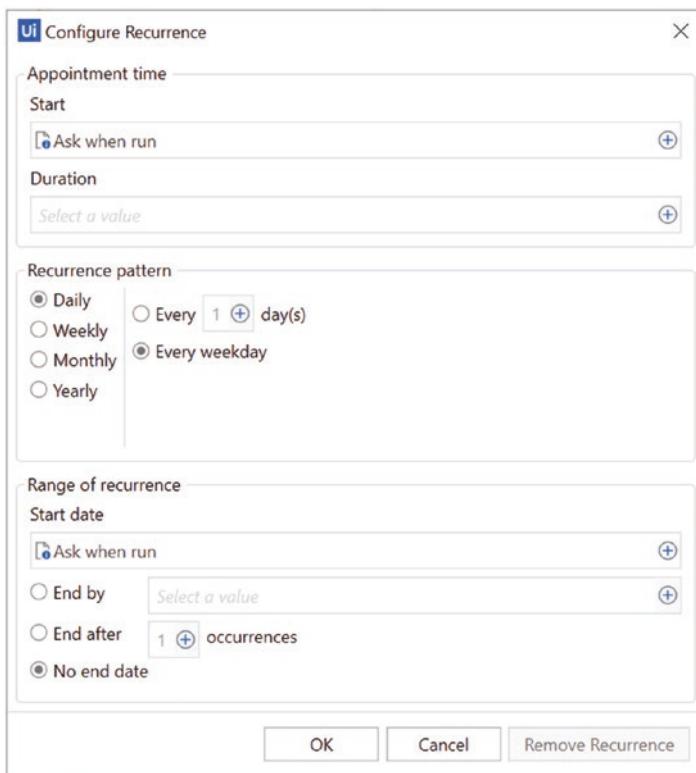


Figure 5-34. Recurrence configurations

Save without sending: This is an optional configuration available on the activity card. This configuration is check-marked by default, indicating calendar invites will be saved and not sent. This is recommended to be set during development time.

EXERCISE

Goal: Building on our previous exercise, use Send Calendar Invite activity to send the hiring manager and the candidate an initial interview meeting invite if the application is related to Job Req 888701. Here are some additional configurations for the invite:

- Send an invite to the hiring manager and interviewee.
- Prompt for the meeting invite date and time.
- Set meeting reminder to an hour before the event.
- Specify the hiring manager's personal meeting room link as the location of the invite. This is found in JobPostingDetails.xlsx Excel file under the Personal Meeting Room column.

Figure 5-17 shows the current state of the inbox.

Source Code: Chapter_5-MailAutomationExercise

Setup: Here are step-by-step implementation instructions:

1. In StudioX, add the Send Calendar Invite activity in the Then block of If activity after the Send Email activity from the previous exercise.
2. In the Title/Subject field, click the Plus icon, select Text option, and type Initial interview with.
3. Next, from within the Text Builder, click the Plus icon and hover over CurrentMail, and choose From. Click Save. This specifies the interviewee in the title of the calendar invite.
4. In the Required attendees field, click the Plus icon, and select the Text option. Next, in the Text Builder, click the Plus icon and hover over CurrentMail and choose From.

5. Next, with the Text Builder still open, type a semicolon (;).
The semicolon is used by Outlook to separate multiple recipients.
6. Next, from within the Text Builder, click the Plus icon and hover over Notebook to select Indicate in Excel. Select cell D2 and click the Confirm button. Click Save.
7. In both the Start date and Start time fields, click the Plus icon, and select Ask when run.
8. Extend the default duration of the meeting by clicking the Plus icon in the Duration field and specifying 1 in the Hours field.
9. Then, in the Location field, click the Plus icon and hover over Notebook to select Indicate in Excel. Select cell E2 to specify the hiring manager's personal meeting room link as the meeting location. Click Confirm.
10. After clicking the Plus icon in the Description field, select the Text option, and type the description shown in Figure 5-35. Indicate cells A2 and C2 for the Job Title and Hiring Manager Name.
11. Change the Reminder field to 1 hour(s).

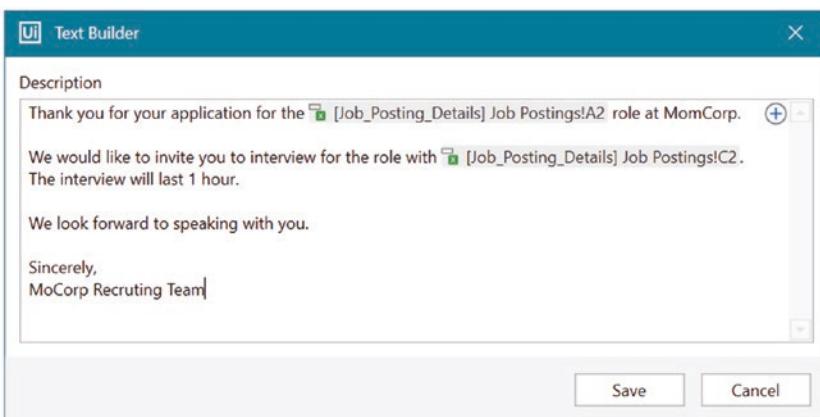


Figure 5-35. Detailed description of the Calendar Invite

Once you have completed the exercise, the final configuration of the **Send Calendar Invite** activity should resemble Figure 5-36. Figure 5-37 shows the calendar invite that was created by this activity.

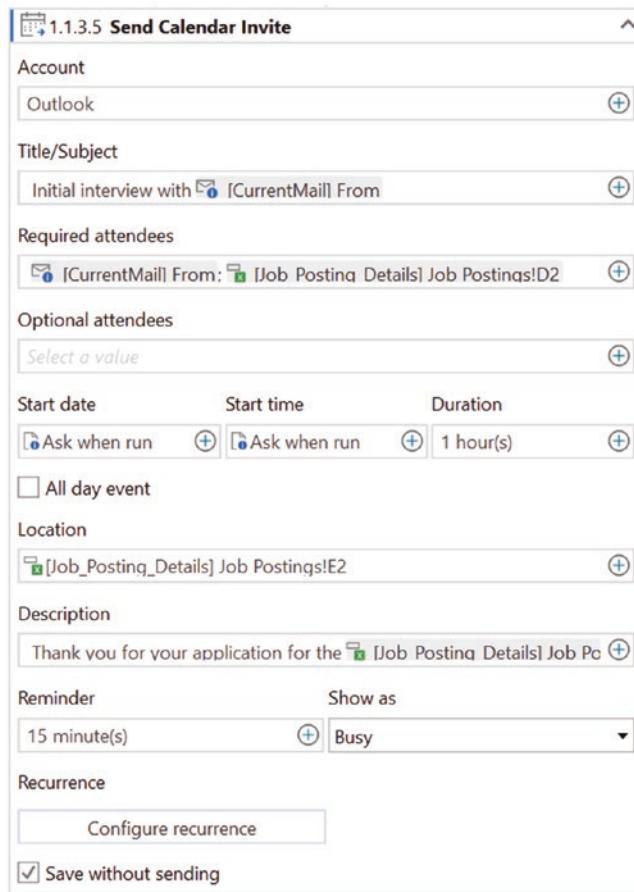


Figure 5-36. Final configuration of Send Calendar Invite exercise

CHAPTER 5 MAIL AUTOMATION

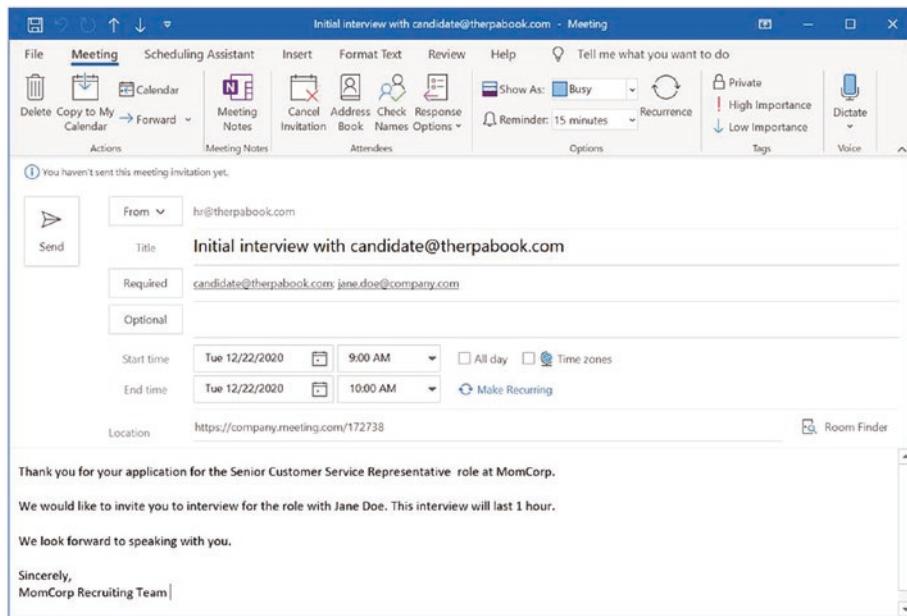


Figure 5-37. Saved calendar invite

Move Email

The **Move Email** activity allows you to move a specified email to a folder.

Configuration

This section provides instructions on how to configure a **Move Email** activity, shown in Figure 5-38.



Figure 5-38. Activity card for Move Email

Email: This is a required configuration available on the activity card. This configuration specifies the email that will be moved.

In the case of the Desktop Outlook app, you can also specify the email that is currently selected by choosing the **Outlook ▶ Selected Email** option. This will act on the selected email at execution time.

If used in a **For Each Email** activity, you can specify the **CurrentMail** message in the loop.

Move to: This is a required configuration available on the activity card. This configuration specifies the folder where the email will be moved.

EXERCISE

Goal: Building on our previous exercise, use **Move Email** activity to move the candidate email to **Inbox ▶ Initial Screen** folder if it is related to Job Req 888701. Figure 5-17 shows the current state of the inbox.

Source Code: Chapter_5-MailAutomationExercise

Setup: Here are step-by-step implementation instructions:

1. In StudioX, add the **Move Email** activity in the **Then** block of **If** activity after the **Send Calendar Invite** activity from the previous exercise.
2. Select the **Plus** icon in **Move to** field to select the **Inbox\Initial Screen Outlook** folder.

Once you have completed the exercise, the final configuration of the **Move Email** activity should resemble Figure 5-39. Figure 5-40 shows the state of the **Inbox** after this activity has run, while Figure 5-41 shows the state of the **Initial Screen** folder where the email has been moved.

CHAPTER 5 MAIL AUTOMATION



Figure 5-39. Final configuration for Move Email exercise

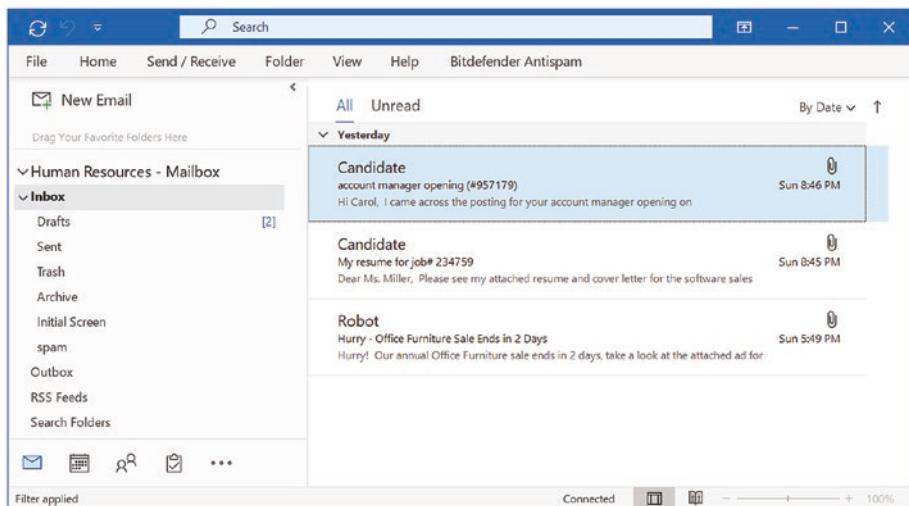


Figure 5-40. The state of the Human Resources email inbox after the Move Email exercise

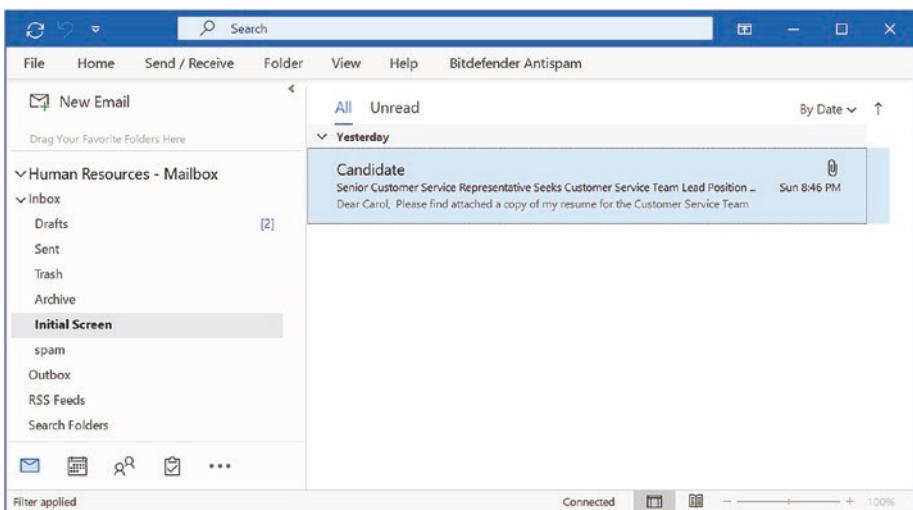


Figure 5-41. The state of the Initial Screen folder after the Move Email exercise

Reply to Email

The **Reply to Email** activity allows you to reply to a specified email message.

Configuration

This section provides instructions on how to configure a **Reply To Email** activity, shown in Figure 5-42.

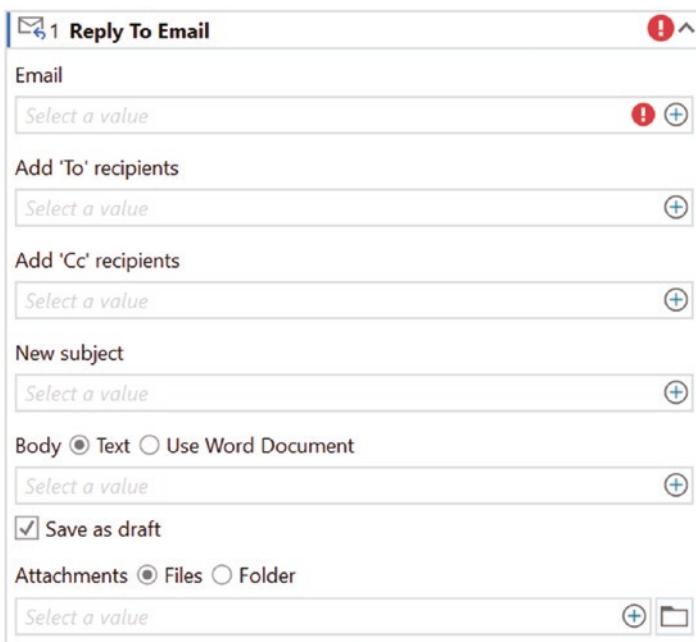


Figure 5-42. Activity card for Reply To Email

Email: This is a required configuration available on the activity card. This configuration allows you to specify the email for which the reply will be sent.

In the case of the Desktop Outlook app, you can also specify the email that is currently selected by choosing the **Outlook ▶ Selected Email** option. This will act on the selected email at execution time.

If used in a **For Each Email** activity, you can specify the **CurrentMail** message in the loop.

Reply to all: This is an optional configuration available on the Properties panel. This configuration allows you to specify if the reply should go out to all original recipients of the email. By default, the option is unchecked.

Add ‘To’ recipients: This is a required configuration available on the activity card. This configuration specifies the recipient(s) of the reply email.

Add ‘Cc’ recipients: This is an optional configuration available on the activity card. This configuration specifies the secondary recipient(s) of the reply message.

Add ‘Bcc’ recipients: This is an optional configuration available on the activity card. This configuration specifies the hidden email recipient(s) of the reply message.

New subject: This is an optional configuration available on the activity card. If specified, the subject of the reply email will be changed. Otherwise, the original subject will be used.

Body: This is an optional configuration available on the activity card. You can select the Text option to type in the body text or select the Use Word Document option to specify the file path of a Word document that will be used as an email body.

Max body document size: This is an optional configuration available on the Properties panel. You can specify the maximum size of the Word document that is being used in the body text. By default, the size is set to 2 MB.

Save as draft: This is an optional configuration available on the activity card. This configuration is check-marked by default, indicating email will be saved as a draft. This is encouraged to be set during development time.

Attachments: This is an optional configuration available on the activity card. You can type or browse for a file or folder to attach to the reply email.

EXERCISE

Goal: Building on our previous exercise, use Reply to Email activity to reply to the candidate emails related to Job Req ids 234759 or 957179.

Figure 5-40 shows the current state of the inbox.

Source Code: Chapter_5-MailAutomationExercise

Setup: Here are step-by-step implementation instructions:

1. In StudioX, add an If activity in the Else block of If activity from the previous exercise. This is to filter for emails with subject lines that contain the specific Job Req ids referenced from the Notebook.
2. Click the Plus icon in the Condition field to open the Condition Builder.
3. On the left side of the condition, click the Plus icon and hover over the CurrentMail to select Subject.
4. In the condition dropdown, select contains.
5. On the right side of the condition, click the Plus icon and hover over the Notebook to select Indicate in Excel. Select cell B3 and click Confirm.
6. Click the + Add button within the Condition Builder to add a condition.
7. Select Any (OR) from the dropdown on the top left.
8. Repeat steps 3 and 4.
9. On the right side of the condition, click the Plus icon and hover over the Notebook to select Indicate in Excel. Select cell B4 and click Confirm.

10. Add a Reply to Email activity in the Then block of the newly created If activity.
11. Leave the Email field as is with the default value of CurrentMail.
12. In the To field, click the Plus icon and hover over CurrentMail, and select From. This will send the email response to the original sender.
13. Next, in the New subject field, click the Plus icon, and select the Text option to open the Text Builder. Type Thank you for your interest as the email subject line. Click Save.
14. In the Body field, select the Use Word Document option. Click the Folder icon to browse for the file and select C:\BookSamples\Chapter_05\EmailTemplates\HiringPausedResponse.docx file. Figure 5-43 shows the contents of the Word document used as an email response body.

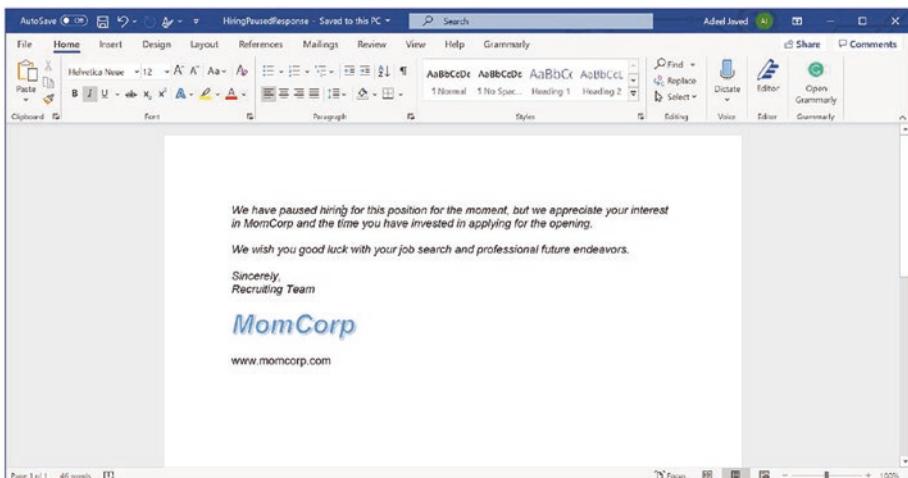


Figure 5-43. Word document template for an email response

Once you have completed the exercise, the final configuration of the **Reply to Email** activity should resemble Figure 5-44. Figure 5-45 shows the email in the Drafts folder generated by this activity.

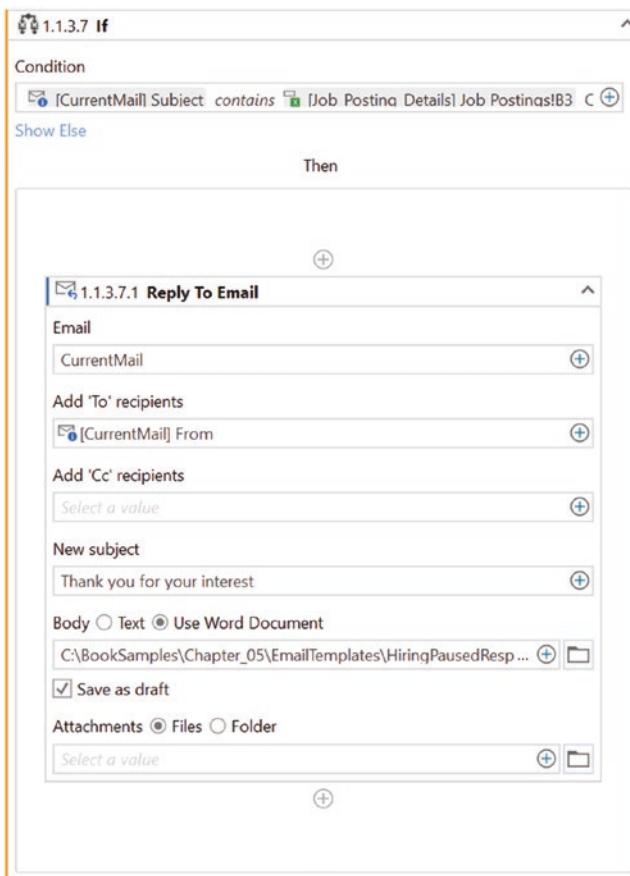


Figure 5-44. Final configuration for Reply to Email exercise

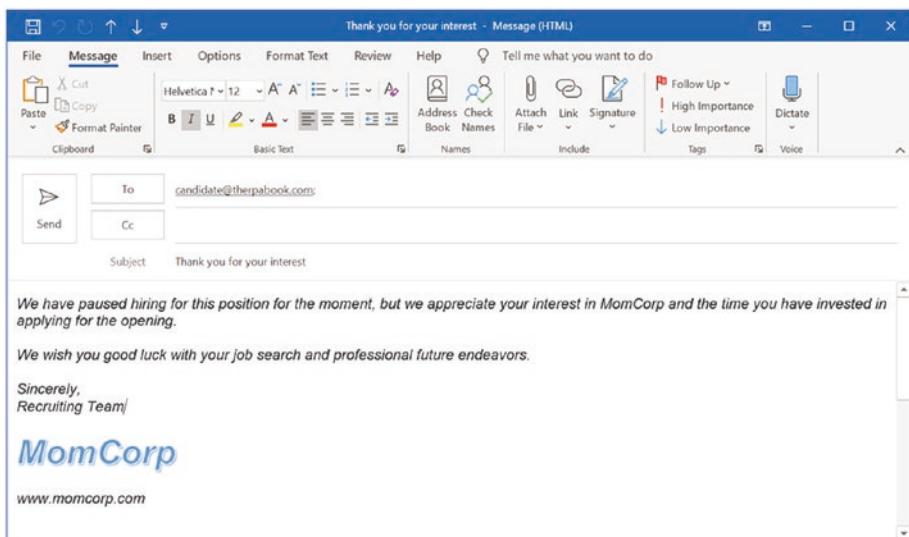


Figure 5-45. Draft reply message generated by Reply to Email activity

Archive Email

The **Archive Email** activity allows you to archive an email message.

Configuration

This section provides instructions on how to configure an **Archive Email** activity, shown in Figure 5-46.



Figure 5-46. Activity card for Archive Email

Email: This is a required configuration available on the activity card. This configuration specifies an email to archive.

In case of the Desktop Outlook app, you can also specify the email that is currently selected by choosing the **Outlook ▶ Selected Email** option. This will act on the selected email at execution time.

If used in a **For Each Email** activity, you can specify the **CurrentMail** message in the loop.

EXERCISE

Goal: Building on our previous exercise, use **Archive Email** activity to archive emails related to Job Req ids 234759 or 957179. Figure 5-40 shows the current state of the inbox.

Source Code: Chapter_5-MailAutomationExercise

Setup: Here are step-by-step implementation instructions:

1. In StudioX, add an **Archive Email** activity in the **Then** block of **If** activity after the **Reply Email** activity.
2. Leave the **Email** field as is with the default value of **CurrentMail**.

Once you have completed the exercise, the final configuration of the **Archive Email** activity should resemble Figure 5-47. Figure 5-48 shows the Archive folder where the emails have been archived.



Figure 5-47. Final configuration of *Archive Email* exercise

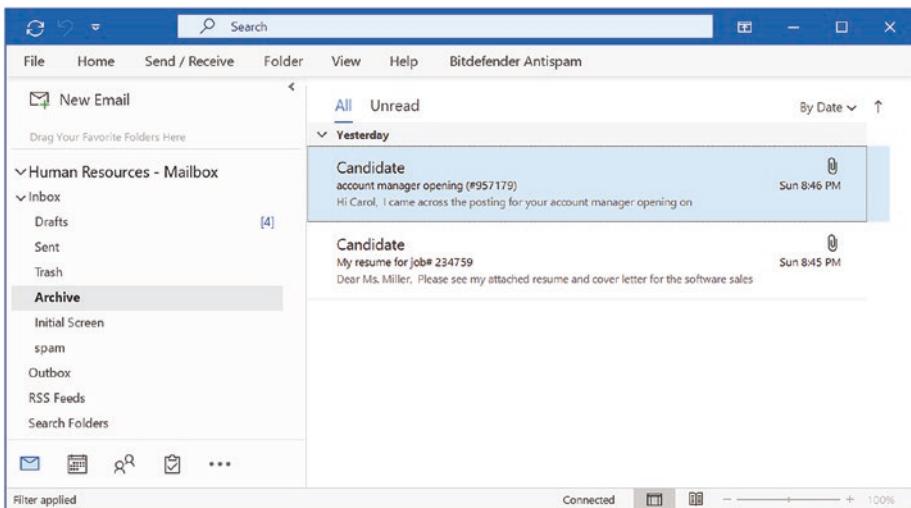


Figure 5-48. Archive folder of the Human Resources mailbox

Delete Email

The **Delete Email** activity allows you to delete a specified email message.

Configuration

This section provides instructions on how to configure a **Delete Email** activity, shown in Figure 5-49.



Figure 5-49. Activity card for Delete Email

Email: This is a required configuration available on the activity card. This configuration specifies an email to delete.

In case of the Desktop Outlook app, you can also specify the email that is currently selected by choosing the **Outlook ▶ Selected Email** option. This will act on the selected email at execution time.

If used in a **For Each Email** activity, you can specify the **CurrentMail** message in the loop.

EXERCISE

Goal: Building on our previous exercise, use **Delete Email** activity to delete emails if they are not related to any of the Job Req ids.

Source Code: Chapter_5-MailAutomationExercise

Setup: Here are step-by-step implementation instructions:

1. Click the **Show Else** option within the **If** activity. This step is in continuation of the previous exercise.
2. Add a **Delete Email** activity in the **Else** block of the **If** activity. This will delete emails where the subject does not contain the Job Req ids within the Notebook.

Once you have completed the exercise, the final configuration of the **Delete Email** activity should resemble Figure 5-50. Figure 5-51 shows the Trash folder with deleted emails.

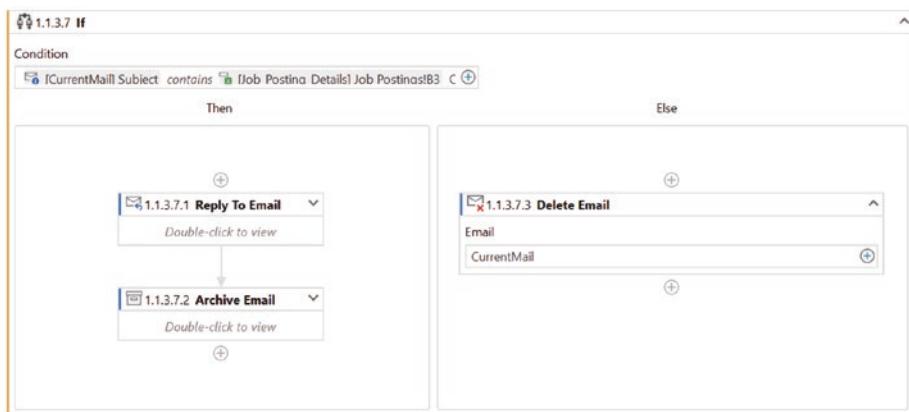


Figure 5-50. Final configuration of Delete Email exercise

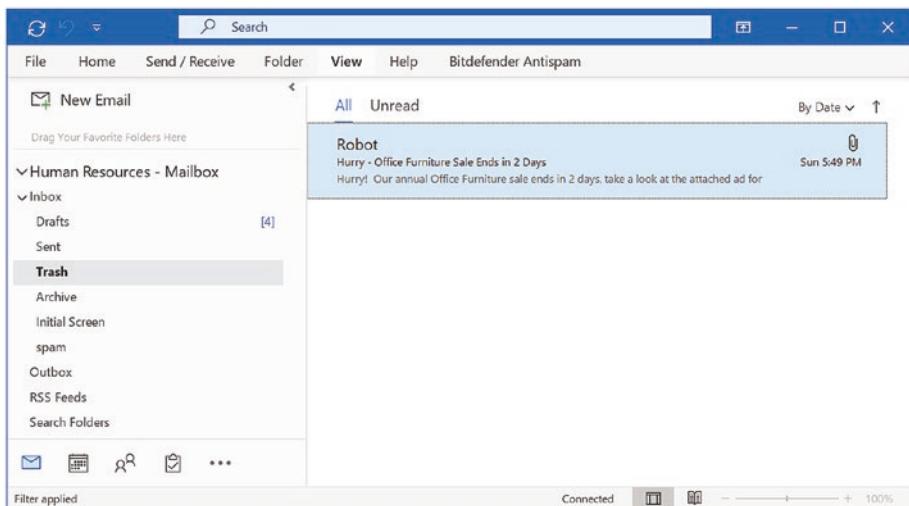


Figure 5-51. Trash folder of the Human Resources mailbox

CHAPTER 6

Word Automation

Microsoft Word is the most popular and universal word processing program used in organizations across the world. Word is often utilized for creating legal documents, financial files, and procurement documents and customizing templates and requirements documents. UiPath StudioX Word automation provides citizen developers with automation capabilities for critical tasks like reading content, writing text, adding images, inserting tables, exporting as PDF, and creating HTML-rich email bodies, for example, for ones that include tables, signatures, or logos.

Learning Objectives

At the end of this chapter, you will learn how to

- Define a Word scope to automate
- Save document as a different file
- Read text from a document
- Replace all occurrences of text within a document
- Set the text of a document bookmark
- Replace a picture based on Alt Text
- Insert a data table relative to text or a bookmark

CHAPTER 6

Word Automation

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Learning Objectives

At the end of this chapter, you will learn how to

- Define a Word scope to automate
- Save document as a different file
- Read text from a document
- Replace all occurrences of text within a document
- Set the text of a document bookmark
- Replace a picture based on Alt Text
- Insert a data table relative to text or a bookmark

- Add a picture at the end of a Word document
- Append text within a Word document
- Export a Word document as a PDF

Sample Overview

Throughout this chapter, we will be using a simplified version of invoice generation process to showcase the usage of all Word automation activities. Concepts discussed in this chapter can be applied to filling information from different data sources to complete a templated Word document such as master service agreements, statements of work, request for proposals, prescriptions, and service desk tickets.

This section will familiarize you with the prerequisites for all exercises in this chapter.

Word Setup

This section provides information on how to enable bookmarks and add alternate text to images in Word.

Bookmarks

First, ensure bookmarks are shown by navigating to the Advanced Options from File ▶ Options ▶ Advanced. Within the Show document content section, confirm Show bookmarks is checked. Figure 6-1 shows the setting configured.

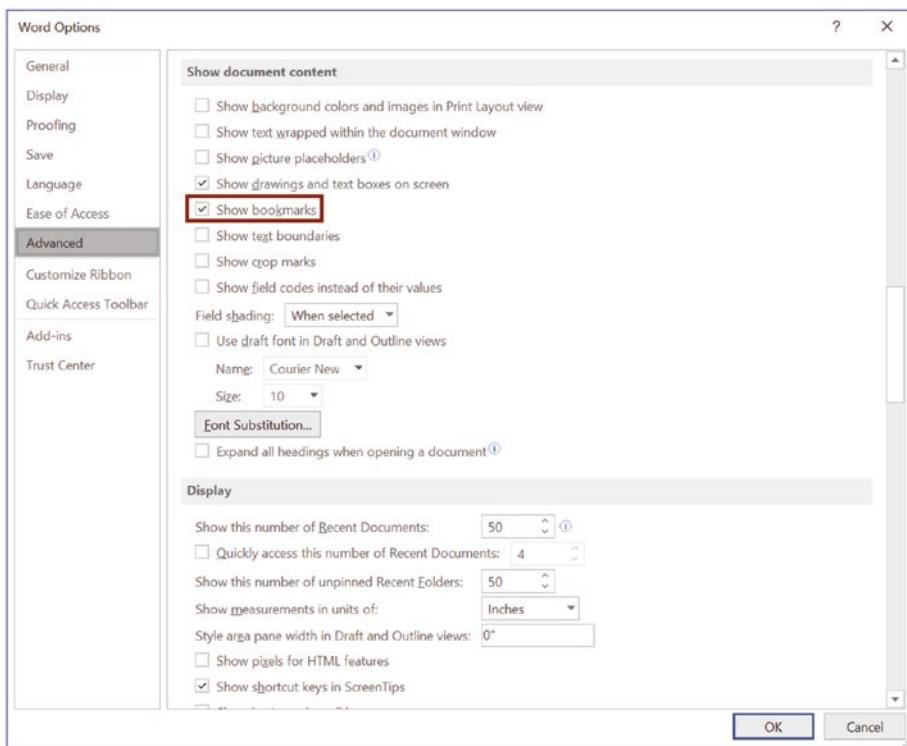


Figure 6-1. Show bookmarks from Advanced Word Options

Alt Text

StudioX uses alternate text (Alt Text) of images in Word to find and replace pictures. To view Alt Text of a picture, select the image within the Word document, then right-click, and choose Edit Alt Text. Figure 6-2 shows the Alt Text for a placeholder picture within the invoice template.

CHAPTER 6 WORD AUTOMATION

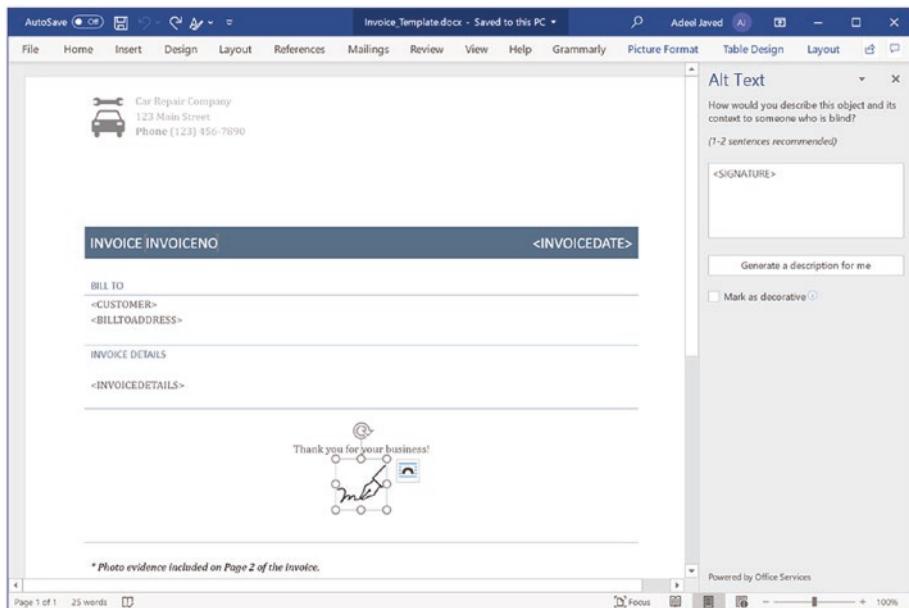


Figure 6-2. Alt Text of invoice template placeholder image

File System Structure

Next, download the source code from the book's site, and make sure you move the entire BookSamples folder to your C:\ drive. All exercises in this chapter assume the folder paths will be **C:\BookSamples\Chapter_06**. Figure 6-3 shows the physical folder structure required for this sample. This folder structure comes with the source code.

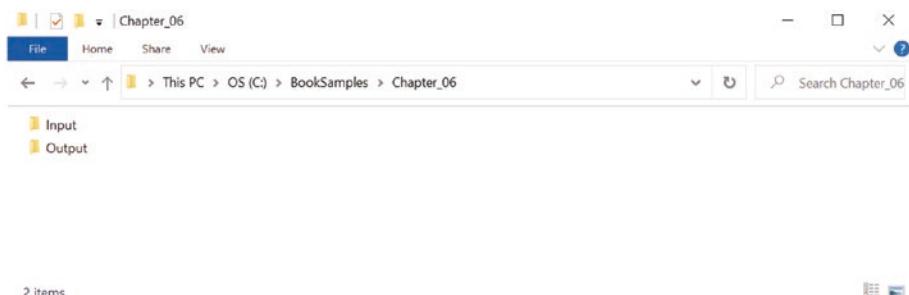


Figure 6-3. Folder structure used for the Invoice Generation exercise

Input: This folder contains the invoice template along with images and an Excel file as input data. Figure 6-4 shows the contents of the Input folder.



Figure 6-4. Contents of the Input folder

Output: This empty folder is to store the completed invoice template and will be where the final PDF is created and saved. Figure 6-5 shows the contents of the Output folder.

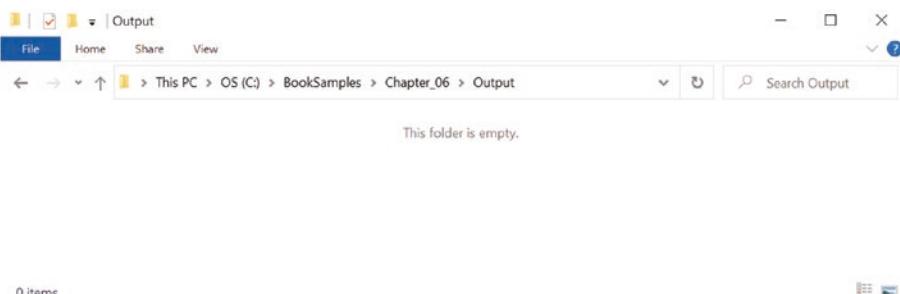


Figure 6-5. Contents of the Output folder

Activities Reference

As shown in Figure 6-6, all Word automation activities can be found under the Word category. The following sections will provide instructions on how to configure and use each activity.

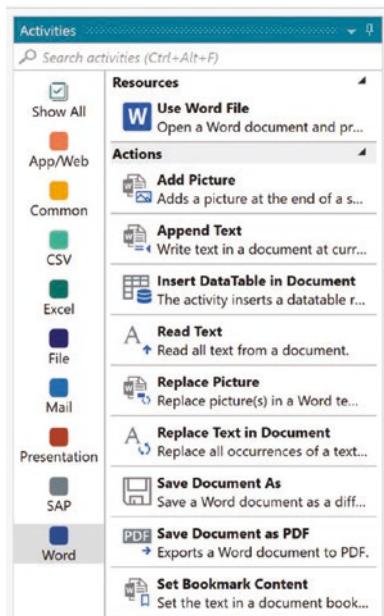


Figure 6-6. Activities for Word automation

Use Word File

The **Use Word File** activity allows you to define a Word scope for your automation. When the process is executed, the Word document is opened and then closed on completion.

This activity will contain all the actions that you want to take on the Word document. For example, if you want to export a document as a PDF, the **Save Document as PDF** activity will be nested in the body of **Use Word File** activity.

Configuration

This section provides instructions on how to configure a **Use Word File** activity, shown in Figure 6-7.

Note To configure this activity, make sure your Microsoft Word desktop application is signed in.

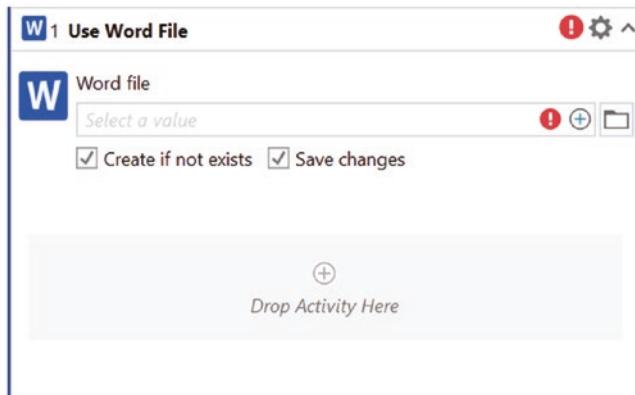


Figure 6-7. Activity card for Use Word File

Word File: This is a required configuration available on the activity card. This configuration allows you to specify the Word document you plan to automate.

Create if not exists: This is an optional configuration available on the activity card. When checked, if the document does not exist, one will be created. By default, this option is checked.

Auto save: This is an optional configuration available on the activity card. When checked, changes will be saved when the process is run. By default, this option is checked.

Save Document As

The **Save Document As** activity allows you to save the document as a new file or replaces an existing. Any activities after the **Save Document As** activity will affect the Word document that has been saved. This activity is recommended to use at the very beginning of an automation to prevent accidental changes to the original file.

Configuration

This section provides instructions on how to configure a **Save Document As** activity, shown in Figure 6-8.

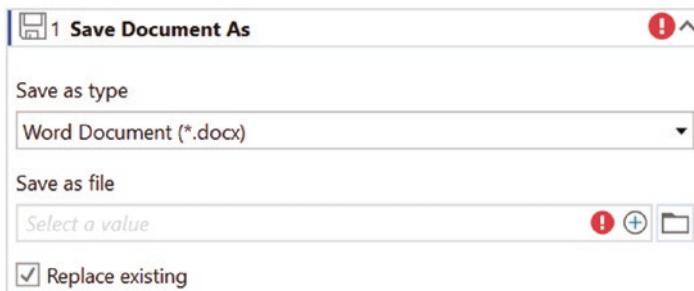


Figure 6-8. Activity card for Save Document As

Save as type: This is a required configuration available on the activity card. This configuration allows you to specify the file extension to save the file as. As shown in Figure 6-9, you can see the list of extensions available.

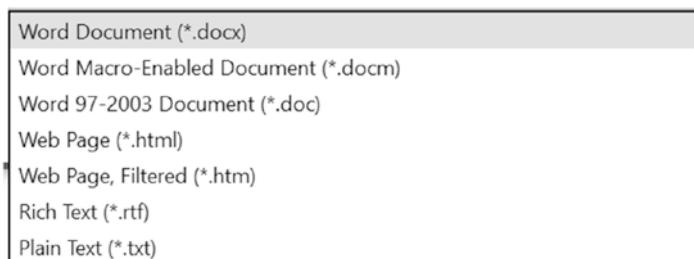


Figure 6-9. Extensions of the Save Document As activity

Save as file: This is a required configuration available on the activity card. You can type or browse for a file to save the document as.

Replace existing: This is an optional configuration available on the activity card. When checked, the file will be replaced if it already exists. If left unchecked and if the file already exists, an error will notify the file already exists. By default, this option is checked.

EXERCISE

Goal: Use the Use Word File and Save Document As activities to create a copy of the C:\BookSamples\Chapter_06\Input\Invoice_Template.docx file. The new file will be created in the C:\BookSamples\Chapter_06\Output folder with INV_CustomerName.docx name. This will be used so the original invoice template is not altered when the automation is executed. Figure 6-5 shows the current state of the Output folder.

Source Code: Chapter_6-WordAutomationExercise

Setup: Here are step-by-step implementation instructions:

1. In StudioX, add the Use Word File activity to a blank process.
2. In the Word file field, click the Folder icon to select C:\BookSamples\Chapter_06\Input\Invoice_Template.docx file.
3. Next, add the Save Document As activity inside the body of Use Word File activity.
4. Leave the Save as type field with the default value of Word Document (*.docx).
5. Click the Plus icon of the Save as file field and select the Text option. Within the Text Builder, type C:\BookSamples\Chapter_06\Output\INV.

CHAPTER 6 WORD AUTOMATION

6. Within the Text Builder, click the Plus icon, and hover over Notebook to select Indicate in Excel. Select cell D2 and click Confirm.
7. Next, within Text Builder, type .docx. Click Save.
8. Leave the Replace existing field checked.

Once you have completed the exercise, the final configuration of the **Save Document As** activity should resemble Figure 6-10. Figure 6-11 shows the copy of invoice template saved in the Output folder.

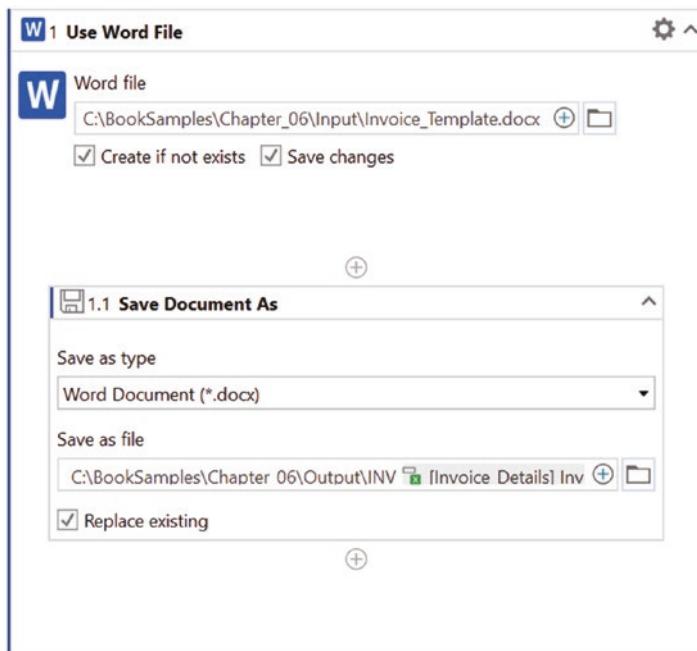


Figure 6-10. Final configuration of the Save Document As activity exercise



Figure 6-11. The output of the Save Document As activity exercise

Read Text

The **Read Text** activity allows you to read all text from a document to save to the Project Notebook or clipboard to reference within an automation.

Configuration

This section provides instructions on how to configure a **Read Text** activity, shown in Figure 6-12.



Figure 6-12. Activity card for Read Text

Save to: This is a required configuration available on the activity card. This configuration specifies where the document text will be saved.

EXERCISE

Goal: Building on our previous exercise, use the Read Text activity to read all the text from the invoice template and print it in the Output panel.

Source Code: Chapter_6-WordAutomationExercise

Setup: Here are step-by-step implementation instructions:

1. In StudioX, add the Read Text activity within the Use Word File activity after the Save Document As activity.
2. Then, in the Save to field, click the Plus icon and select Copy to clipboard.
3. Next, add the Write Line activity to the body of Use Word File activity after the Read Text activity.
4. In the Text field, click the Plus icon, and select Paste from clipboard.

Once you have completed the exercise, the final configuration of the **Read Text** activity should resemble Figure 6-13. Once the automation runs, all text from the invoice template document is printed in the Output panel, as shown in Figure 6-14.

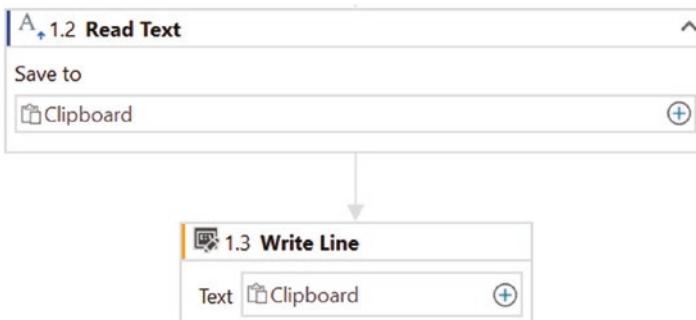


Figure 6-13. Final configuration for Read Text exercise

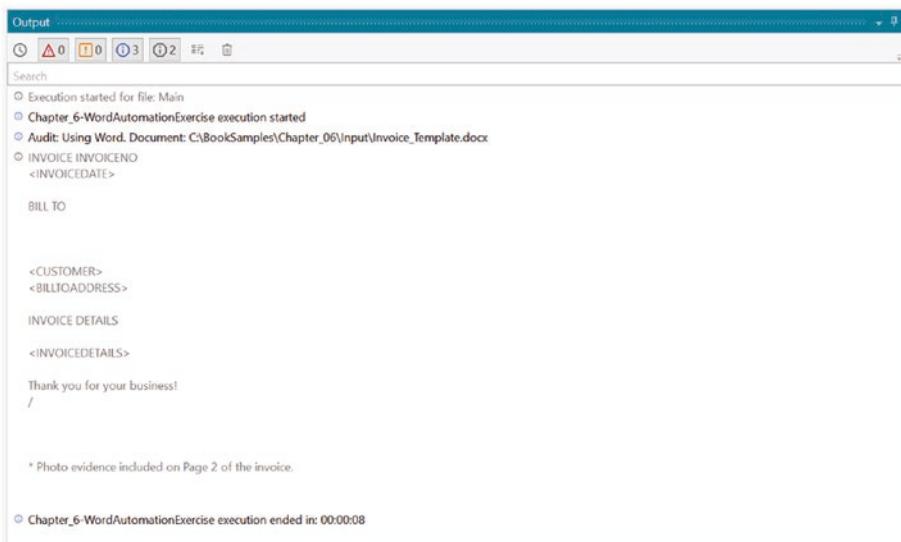


Figure 6-14. The output from the Read Text exercise

Set Bookmark Content

The **Set Bookmark Content** activity allows you to set the text of a document bookmark. This is especially useful when editing documents based on a template as it allows you to remove whole sections of a document, for example, the payment section of a contract for an unpaid internship.

Configuration

This section provides instructions on how to configure a **Set Bookmark Content** activity, shown in Figure 6-15.



Figure 6-15. Activity card for Set Bookmark Content

Bookmark name: This is a required configuration available on the activity card. This configuration allows you to specify the name of the document bookmark.

Bookmark text: This is a required configuration available on the activity card. You can specify text to set in place of the bookmark.

Tip The “Word Setup” section demonstrates how to show document bookmarks.

EXERCISE

Goal: Building on our previous exercise, use the Set Bookmark Content activity to replace the document bookmark, INVOICENO, with the invoice number value from the Notebook. Figure 6-2 shows the current state of the invoice template.

Source Code: Chapter_6-WordAutomationExercise

Setup: Here are step-by-step implementation instructions:

1. In StudioX, add the Set Bookmark Content activity within the Use Word File activity after the Write Line activity. This will be used to replace the bookmark text with the invoice number.

2. Click the Plus icon of the Bookmark name field and select the Text option. Within the Text Builder, type INVOICENO. Click Save.
3. In the Bookmark text field, click the Plus icon and hover over Notebook to select Indicate in Excel option.
4. Within the Excel file, select cell A2 of the Invoice Details sheet to specify the invoice number and click Confirm.

Once you have completed the exercise, the final configuration of the **Set Bookmark Content** activity should resemble Figure 6-16. Figure 6-17 shows the generated invoice after this activity was run.



Figure 6-16. Final configuration of Set Bookmark Content activity exercise

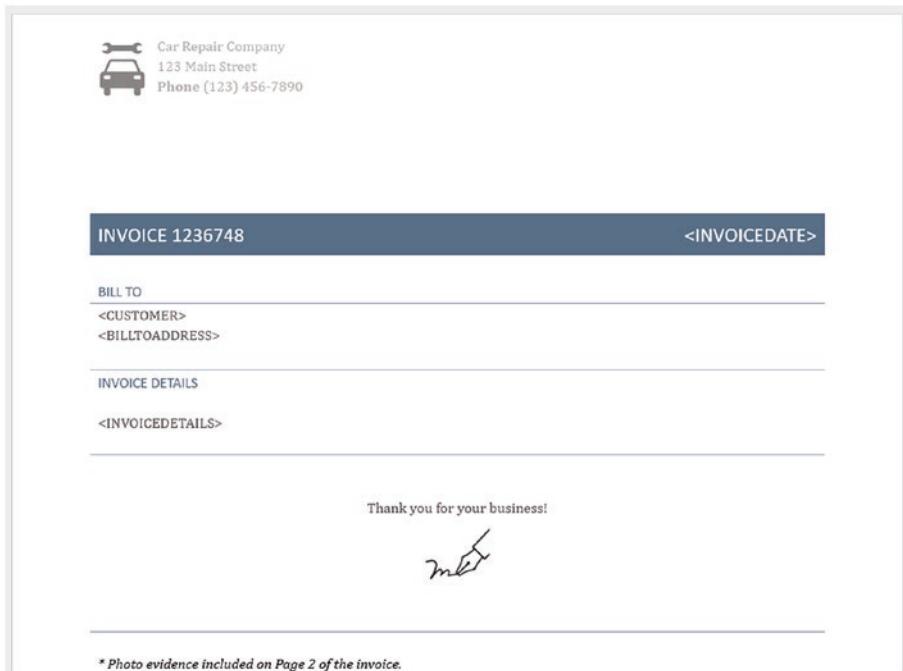


Figure 6-17. The state of the generated invoice after the Set Bookmark Content exercise

Replace Text in Document

The **Replace Text in Document** activity allows you to replace all occurrences of text within a document with other text. This can be used when editing documents based on a template, for example, the Name, Surname, and Address on an insurance form.

Tip To ensure only text intended is replaced, it is common to have parentheses or brackets around the text to have it uniquely identified, for example, specifying <Company Name> or {Invoice_No}.

Configuration

This section provides instructions on how to configure a **Replace Text in Document** activity, shown in Figure 6-18.

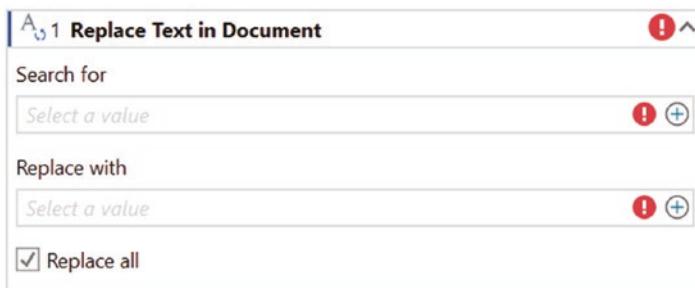


Figure 6-18. Activity card for Replace Text in Document

Search for: This is a required configuration available on the activity card. This configuration allows you to specify the text that will be searched for to replace the text. As a note, the search is not case-sensitive.

Replace with: This is a required configuration available on the activity card. This configuration specifies the text that will be put in place of the searched text.

Replace all: This is an optional configuration available on the activity card. When checked, all occurrences of the text searched for will be replaced. If left unchecked, only the first occurrence of the text searched will be replaced. By default, this option is checked.

Found: This is an optional configuration available on the Properties panel. This configuration returns true or false depending on if the Search for text was found.

EXERCISE

Goal: Building on our previous exercise, use the Replace Text in Document activity to replace the <INVOICEDATE>, <CUSTOMER>, and <BILLTOADDRESS> placeholders with the actual customer details from Invoice Summary worksheet of Notebook.

The invoice date will be read from cell B2, the customer name from cell D2, and bill to address from cell E2 of the Notebook. Figure 6-17 shows the current state of the invoice template.

Source Code: Chapter_6-WordAutomationExercise

Setup: Here are step-by-step implementation instructions:

1. In StudioX, add a Replace Text in Document activity within the Use Word File activity after the Set Bookmark Content activity. This will be used to replace the invoice date value.
2. Click the Plus icon in the Search for field and select the Text option. Within the Text Builder, type <INVOICEDATE>. Click Save.
3. In the Replace with field, click the Plus icon and hover over Notebook to select the Indicate in Excel option. Within the Excel file, select cell B2 to specify the invoice date and click Confirm.
4. Add the Replace Text in Document activity within the Use Word File activity after the Replace Text in Document activity. This will be used to replace the customer name.
5. Click the Plus icon in the Search for field and select the Text option. Within the Text Builder, type <CUSTOMER>. Click Save.

6. In the Replace with field, click the Plus icon and hover over Notebook to select the Indicate in Excel option. Within the Excel file, select cell D2 to specify the customer name and click Confirm.
7. Add the Replace Text in Document activity within the Use Word File activity after the Replace Text in Document activity. This will be used to replace the bill to address.
8. Click the Plus icon in the Search for field and select the Text option. Within the Text Builder, type <BILLTOADDRESS>. Click Save.
9. In the Replace with field, click the Plus icon and hover over Notebook to select the Indicate in Excel option. Within the Excel file, select cell E2 to specify the bill to address and click Confirm.

Once you have completed the exercise, the final configuration of the **Replace Text in Document** activity should resemble Figure 6-19. Figure 6-20 shows the generated invoice with the placeholder texts replaced by this activity.

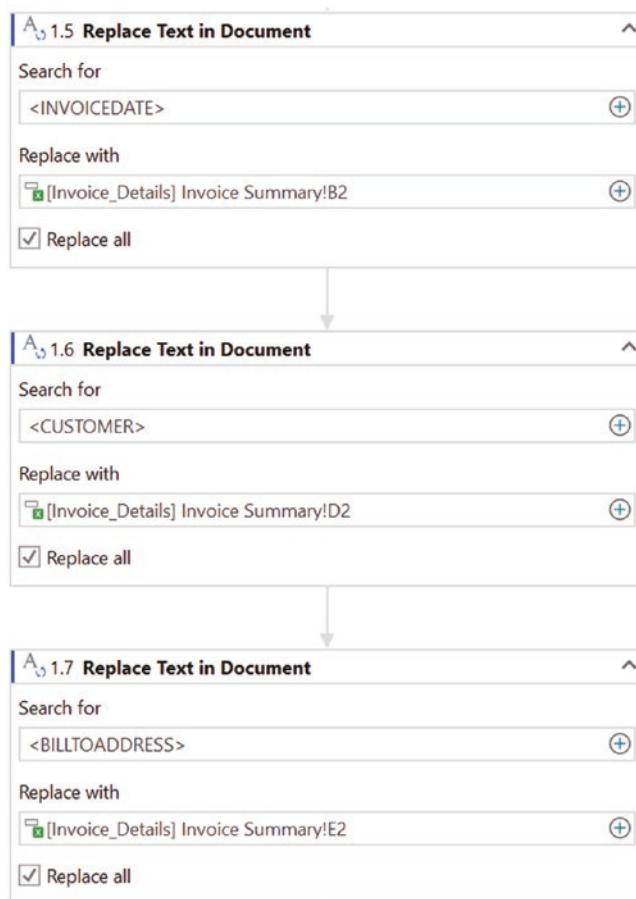


Figure 6-19. Final configuration for Replace Text in Document activity exercise



Figure 6-20. The state of the generated invoice after the Replace Text in Document exercise

Append Text

The **Append Text** activity allows you to write text in a document at the current caret position. This can be used to append text to the end of a document.

Configuration

This section provides instructions on how to configure an **Append Text** activity, shown in Figure 6-21.



Figure 6-21. Activity card for Append Text

Text: This is a required configuration available on the activity card. This configuration is to specify the text to append at the current caret position within the Word document.

Add new line before text: This is a required configuration available on the activity card. This configuration is to specify whether to add a new line before the appended text. By default, the option is checked.

EXERCISE

Goal: Building on our previous exercise, use the Append Text activity to append text related to payment terms. The payment date will be pulled from cell C2 from Invoice Summary worksheet of the Notebook. Figure 6-20 shows the current state of the generated invoice.

Source Code: Chapter_6-WordAutomationExercise

Setup: Here are step-by-step implementation instructions:

1. In StudioX, add the Append Text activity in the Use Word File activity after the Replace Text in Document activity from the previous exercise.
2. Select the Plus icon of the Text field and select the Text option. Within the Text Builder, type Terms: Please pay invoice by.
3. Next, select the Plus icon in the Text Builder and hover over and select Notebook ➤ Indicate in Excel.

- Within the Excel file, select cell C2 of the Invoice Details sheet to specify the payment due date and click Confirm. Click Save.

Once you have completed the exercise, the final configuration of the **Append Text** activity should resemble Figure 6-22. Figure 6-23 shows the state of the generated invoice after this activity has run.

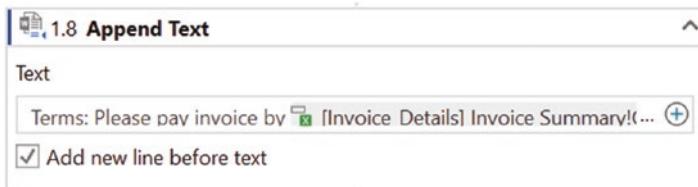


Figure 6-22. Final configuration for Append Text exercise

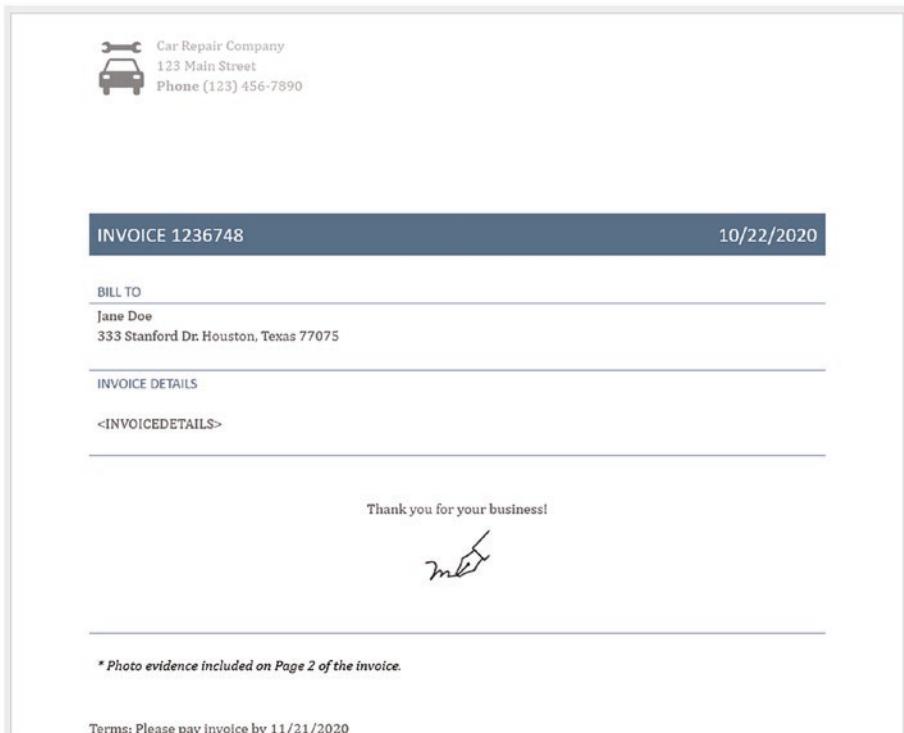


Figure 6-23. The state of the generated invoice after the Append Text exercise

Insert DataTable in Document

The **Insert DataTable in Document** activity allows you to add a table at specific points within a document, for example, a table from Excel or a web page.

Configuration

This section provides instructions on how to configure an **Insert DataTable in Document** activity, shown in Figure 6-24.

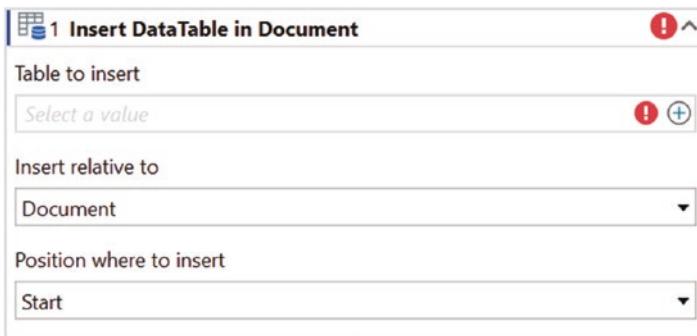


Figure 6-24. Activity card for *Insert DataTable in Document*

Table to insert: This is a required configuration available on the activity card. This configuration allows you to specify the data table to insert in the document.

Insert relative to: This is a required configuration available on the activity card and is set to Document by default. This configuration specifies the relative location of where the table will be inserted. You can choose to insert a datatable relative to the start or end of the document, a bookmark, or text. Depending on this selection, the configuration fields will change.

Position where to insert: This is a required configuration available on the activity card and is set to Start by default. This configuration specifies where to insert the table based on the “insert using position of”

setting within Word. You have the option to specify where to insert a data table in place of text or a bookmark or at the start or end of a document. Depending on the selection of the `insert relative to`, the configuration fields will change.

EXERCISE

Goal: Building on our previous exercise, use `Insert DataTable in Document` activity to replace all occurrences of the placeholder text `<INVOICEDETAILS>` with the data table from `Invoice Details` worksheet of Notebook. Figure 6-23 shows the current state of the invoice template.

Source Code: Chapter_6-WordAutomationExercise

Setup: Here are step-by-step implementation instructions:

1. In StudioX, add the `Insert DataTable in Document` activity in the `Use Word File` activity after the `Append Text` activity from the previous exercise.
2. Select the Plus icon of the `Table to insert` field and hover over and select `Notebook > Invoice Table [Sheet] > Table1 [Table]`.
3. In the `Insert relative to` field, select `Text` from the dropdown.
4. Select the Plus icon of the `Text to search for` field and select the `Text` option. Within the `Text Builder`, type `<table>`. Click `Save`.
5. Leave the `Text occurrence` field as is with the default value of `All`.
6. In the `Position where to insert` field, select `Replace` from the dropdown.

Once you have completed the exercise, the final configuration of the **Insert DataTable in Document** activity should resemble Figure 6-25. Figure 6-26 shows the state of the invoice template after this activity has run and the invoice details data table has been added.

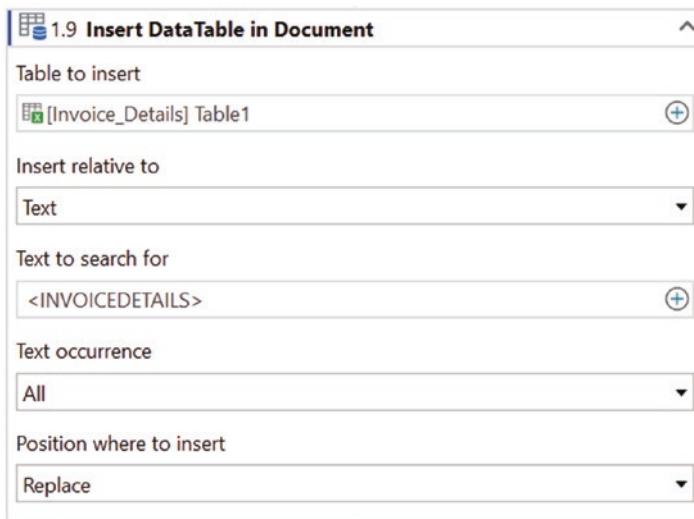


Figure 6-25. Final configuration of *Insert DataTable in Document* exercise

 Car Repair Company
123 Main Street
Phone (123) 456-7890

INVOICE 1236748 10/22/2020

BILL TO
Jane Doe
333 Stanford Dr. Houston, Texas 77075

INVOICE DETAILS

DESCRIPTION	UNIT COST	QTY	AMOUNT	
Service Fee	\$100.00	1	\$100.00	
Labor	\$75.00	4	\$300.00	
Tires	\$305.69	2	\$611.38	
Oil Change	\$90.34	1	\$90.34	
			Subtotal	\$1,101.72
			Discount	\$500.00
			Tax Rate	9%
			Tax	\$54.15
			Total	\$1,155.87

Thank you for your business!


** Photo evidence included on Page 2 of the invoice.*

Terms: Please pay invoice by 11/21/2020

Figure 6-26. The state of the generated invoice after the Insert DataTable in Document exercise

Replace Picture

The **Replace Picture** activity allows you to replace pictures within a Word document with Alt Text. This activity can be used to update a document based on a template, for example, replacing a logo on a contract or a photo of an employee on an onboarding form.

Configuration

This section provides instructions on how to configure a **Replace Picture** activity, shown in Figure 6-27.



Figure 6-27. Activity card for Replace Picture

Find pictures with ‘Alt Text’: This is a required configuration available on the activity card. This configuration allows you to specify the Alt Text of the picture to replace.

Replace with picture: This is a required configuration available on the activity card. This configuration allows you to specify the file path of the picture that will replace the picture with Alt Text.

Tip The “Word Setup” section shows how to view the Alt Text of the placeholder picture.

EXERCISE

Goal: Building on our previous exercise, use the Replace Picture activity to replace the placeholder image with the Alt Text, <SIGNATURE>, with the actual signature image located at C:\BookSamples\Chapter_06\Input\Signature.png. Figure 6-26 shows the current state of the invoice template before this exercise.

Source Code: Chapter_6-WordAutomationExercise

Setup: Here are step-by-step implementation instructions:

1. In StudioX, add the Replace Picture activity within the Use Word File activity after the Insert DataTable in Document activity from the previous exercise.
2. Select the Plus icon of the Find pictures with 'Alt Text' field and select the Text option. Within the Text Builder, type <SIGNATURE>. Click Save.
3. Select the Plus icon of the Replace with picture field and select the Folder icon to browse for the file and select C:\BookSamples\Chapter_06\Input\Signature.png file.

Once you have completed the exercise, the final configuration of the **Replace Picture** activity should resemble Figure 6-28. Figure 6-29 shows the placeholder image with 'Alt Text' replaced with the actual signature after this activity was run.

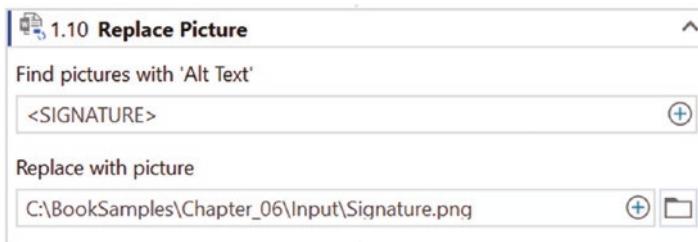


Figure 6-28. Final configuration of Replace Picture exercise

CHAPTER 6 WORD AUTOMATION

 Car Repair Company
123 Main Street
Phone (123) 456-7890

INVOICE 1236748 10/22/2020

BILL TO
Jane Doe
333 Stanford Dr. Houston, Texas 77075

INVOICE DETAILS

DESCRIPTION	UNIT COST	QTY	AMOUNT
Service Fee	\$100.00	1	\$100.00
Labor	\$75.00	4	\$300.00
Tires	\$305.69	2	\$611.38
Oil Change	\$90.34	1	\$90.34
	Subtotal		\$1,101.72
	Discount		\$500.00
	Tax Rate		9%
	Tax		\$54.15
	Total		\$1,155.87

Thank you for your business!



* Photo evidence included on Page 2 of the invoice.

Terms: Please pay invoice by 11/21/2020

Figure 6-29. The state of the generated invoice after the Replace Picture exercise

Add Picture

The **Add Picture** activity allows you to add a picture at the end of your Word document.

Tip This activity can be used to append an email signature to the body of an email using the **Send Outlook Email** activity.

Configuration

This section provides instructions on how to configure an **Add Picture** activity, shown in Figure 6-30.



Figure 6-30. Activity card for Add Picture

Picture to insert: This is a required configuration available on the activity card. This configuration allows you to specify the picture to insert at the end of a Word document.

EXERCISE

Goal: Building on our previous exercise, use Add Picture activity to insert photo evidence of damage located at C:\BookSamples\Chapter_06\Input\Damage_Evidence.jpg. Figure 6-29 shows the current state of the invoice template.

Source Code: Chapter_6-WordAutomationExercise

Setup: Here are step-by-step implementation instructions:

1. In StudioX, add the Add Picture activity in the Use Word File activity after the Replace Picture activity from the previous exercise.
2. Select the Plus icon of the Picture to insert field and select the Folder icon to browse for the file and select C:\BookSamples\Chapter_06\Input\Damage_Evidence.jpg file. Figure 6-33 shows the signature to insert at the end of the invoice template.

Once you have completed the exercise, the final configuration of the **Add Picture** activity should resemble Figure 6-31. Figure 6-32 shows the generated invoice with a new picture added after this activity was run.

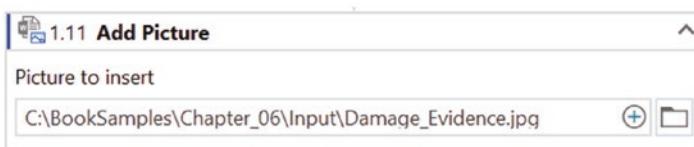


Figure 6-31. Final configuration of Add Picture exercise

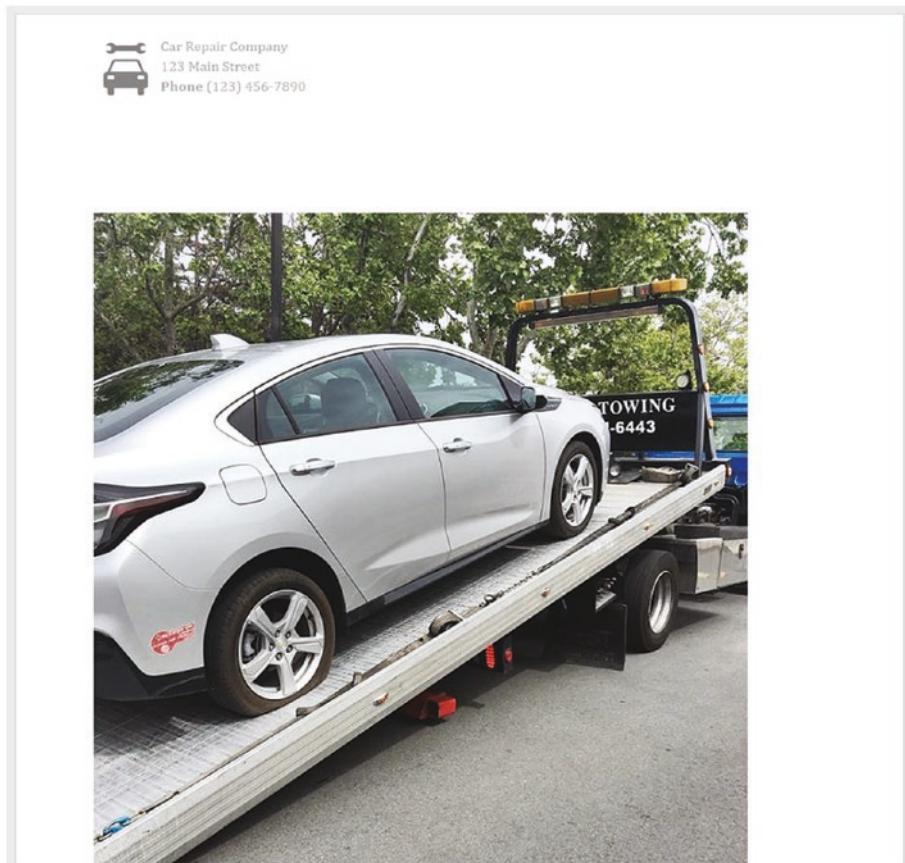


Figure 6-32. The state of the generated invoice after the Add Picture exercise

Save Document as PDF

The **Save Document as PDF** activity allows you to export the Word document as a PDF file. This is commonly used when needing to email a document as a PDF to prevent further editing.

Configuration

This section provides instructions on how to configure a **Save Document as PDF** activity, shown in Figure 6-33.



Figure 6-33. Activity card for Save Document as PDF

File path to save as: This is a required configuration available on the activity card. This configuration allows you to specify the file path of where the exported PDF file is saved.

Replace existing: This is an optional configuration available on the activity card. When checked, the file will be replaced if it already exists. If left unchecked and if the file already exists, an error will notify the file already exists. By default, this option is checked.

EXERCISE

Goal: Building on our previous exercise, use Save Document as PDF activity to export the generated invoice to a PDF version.

Source Code: Chapter_6-WordAutomationExercise

Setup: Here are step-by-step implementation instructions:

1. In StudioX, add the Save Document as PDF activity in the Use Word File activity after the Add Picture activity from the previous exercise.

2. Click the Plus icon of the File path to save as field and select the Text option. Within the Text Builder, type C:\BookSamples\Chapter_06\Output\INV.
3. Within the Text Builder, click the Plus icon, and hover over Notebook to select Indicate in Excel. Select cell D2 and click Confirm.
4. Next, within Text Builder, type .pdf. Click Save.

Once you have completed the exercise, the final configuration of the **Save Document as PDF** activity should resemble Figure 6-34. Figure 6-35 shows the final state of the Output folder.



Figure 6-34. Final configuration of the Save Document as PDF activity

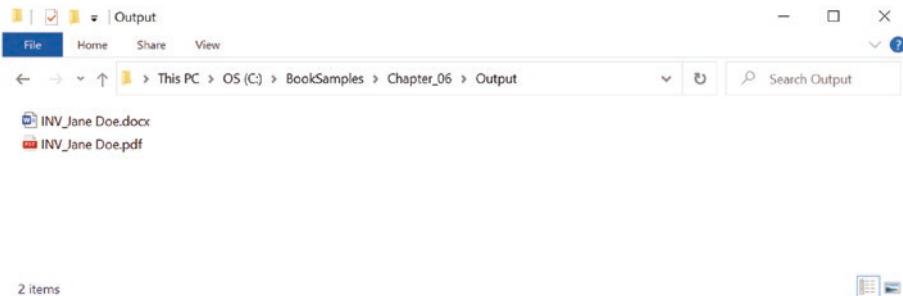


Figure 6-35. Contents of the Output folder