

CHAPTER 9

File Automation

Managing data, whether physical or digital, is a critical part of our daily jobs. An effective system to manage files and folders is becoming more important than ever with the growing amount of data that is available in today's working environment. We use folders to help us organize information so that it can be easily searched and retrieved later. Folders can also be used as a to-do list, that is, storing files in folders based on their status. The use of files is also quite common in our day-to-day jobs, for example, exporting data from systems in Excel/CSV, moving data between systems, and Word or Excel file templates to generate orders and invoices. As a result, UiPath StudioX File automation capabilities that organize, manage, and edit files and folders become a useful and essential tool. Folders help us organize information so that it can be easily searched and retrieved later. Folders can also be used as a to-do list, that is, storing files in folders based on their status.

Learning Objectives

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

- Get properties of a folder
- Check if a folder already exists
- Create, delete, copy, and move folders

- Fetch all files in a folder
- Get properties of a file
- Check if a file already exists
- Create, delete, copy, and move files
- Extract contents of a compressed file
- Create a compressed file
- Read contents of a text file
- Write and append content to a text file

Sample Overview

Throughout this chapter, we will be using a simplified version of a recruitment process to showcase all File automation activities.

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

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_09**. Figure 9-1 shows the folder structure required for this sample. This folder structure comes with the source code.

Note To run the exercises multiple times, make sure that the required files are available; otherwise, UiPath StudioX will throw an error.

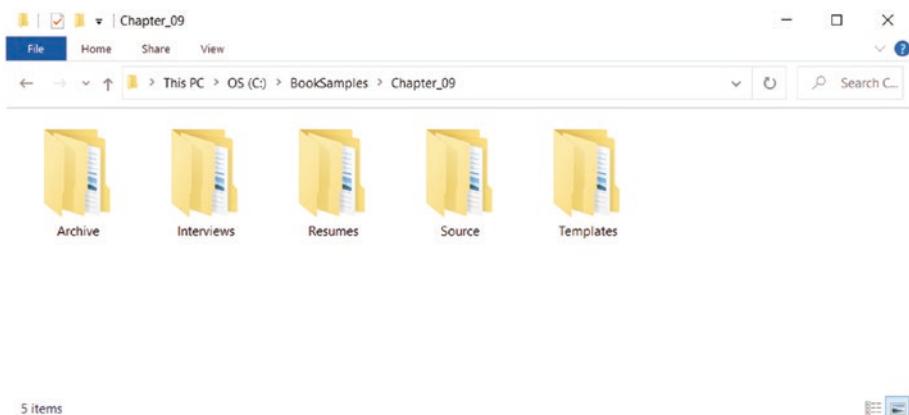


Figure 9-1. Folder structure of sample recruitment management process

Archive: This folder is used for archiving old folders and files. One sample subfolder already exists for a past date that is used in an exercise.

Interviews: This folder is used for keeping track of interviews. This folder contains two subfolders, Pending and Scheduled. At the end of each day, resumes from the MoveForward folder are moved to the Interviews\Pending folder. Once interviews are scheduled, resumes are moved to the Interviews\Scheduled folder.

Resumes: This folder is used for keeping track of resumes received every day. As shown in Figure 9-2, a new folder is created for each day. Three sample subfolders already exist for past dates that are used in a few exercises.

CHAPTER 9 FILE AUTOMATION

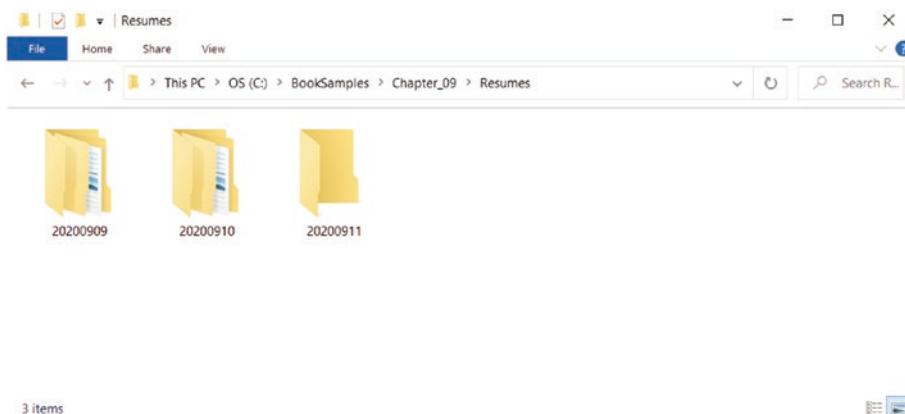


Figure 9-2. *Contents of Resumes folder*

Each daily folder contains three subfolders, New, MoveForward, and Reject. Whenever a new daily folder is created, these subfolders are copied from the Templates folder. All resumes are added to the New subfolder and, after review, a resume is either moved to MoveForward or Reject subfolder.

Source: This folder, as shown in Figure 9-3, is used for receiving compressed files from external staffing agencies. These compressed files contain candidate resumes. By default, this folder contains three sample extract files used in a few exercises.

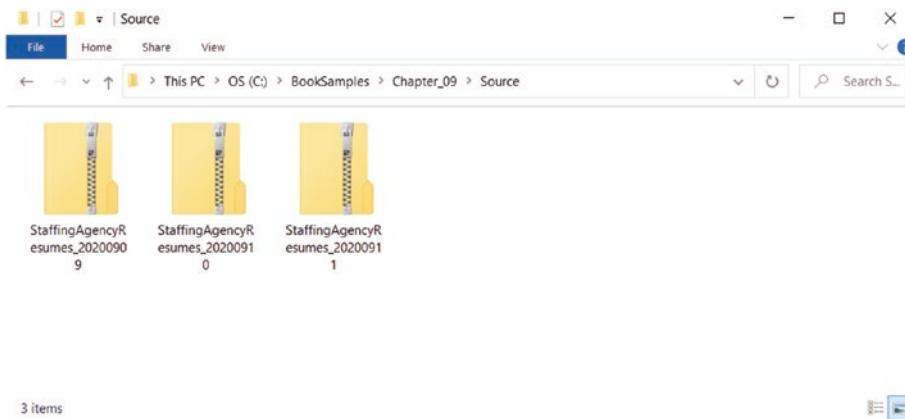


Figure 9-3. *Contents of Source folder*

Templates: This is a static folder. As shown in Figure 9-4, it contains templates of folders and files that are copied to other folders during the process. This helps avoid creating the same folder structures repeatedly.

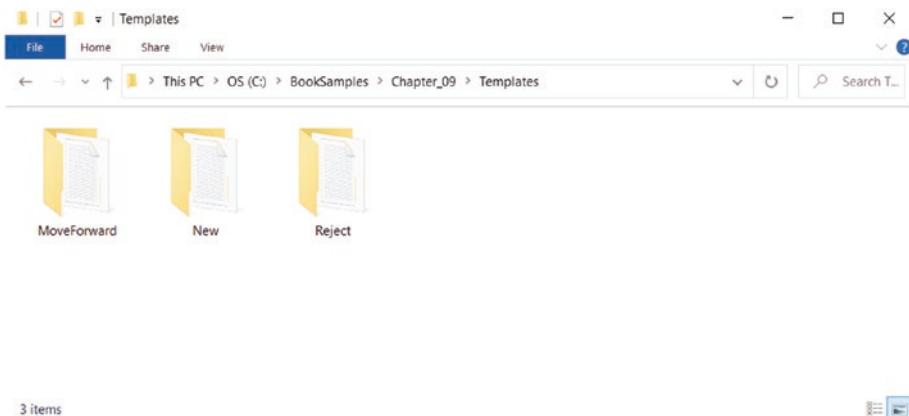


Figure 9-4. Contents of Templates folder

Activities Reference

As shown in Figure 9-5, all folder automation activities can be found under the File category. The following sections will provide instructions on how to configure and use each activity.

CHAPTER 9 FILE AUTOMATION

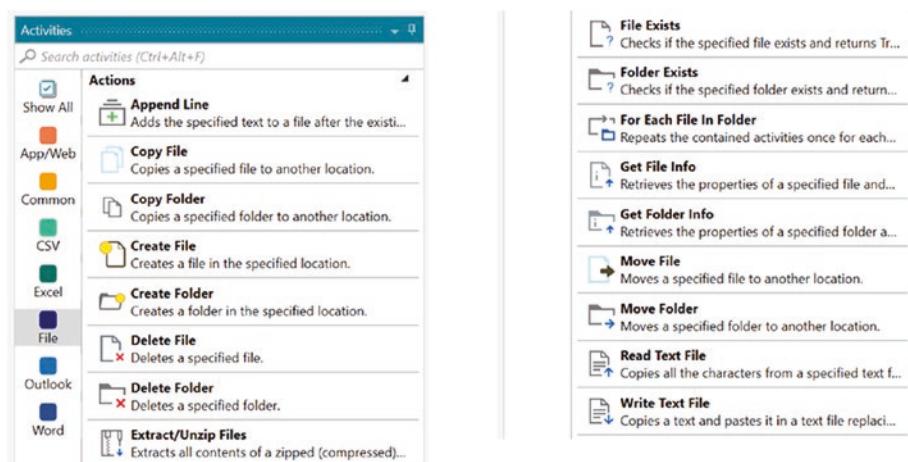


Figure 9-5. Activities for File automation

Get Folder Info

The **Get Folder Info** activity allows you to retrieve and save properties of a specified folder.

Configuration

This section provides instructions on how to configure a **Get Folder Info** activity, shown in Figure 9-6.



Figure 9-6. Activity card for Get Folder Info

Folder path: This is a required configuration available on the activity card. This configuration allows you to specify the full path of the folder for which you want to retrieve information.

Output to: This is an optional configuration available on the activity card. This configuration allows you to save folder information for later use, shown in Figure 9-7.

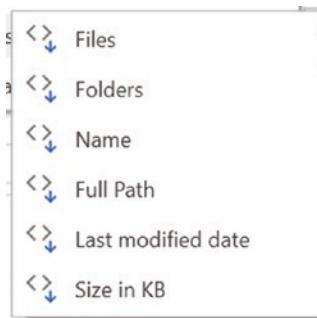


Figure 9-7. Properties returned by Get Folder Info activity

Table 9-1 provides a brief description of all properties returned by this activity.

Table 9-1. Properties returned by the Get Folder Info activity

Property	Description
Files	Number of files in all subfolders
Folders	Number of subfolders
Name	Name of the specified folder
Full path	The full path of the specified folder
Last modified date	Data and time when the specified folder was last modified
Size in KB	Size of the specified folder in kilobytes (KB)

EXERCISE

Goal: Use the Get Folder Info activity to get properties of C:\BookSamples\Chapter_09\Resumes\20200910 folder, and print the last modified date.

Source Code: Chapter_9_FolderActivitiesExercise

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

1. In StudioX, add the Get Folder Info activity to a blank process.
2. In the Folder path field, click the Folder icon and select C:\BookSamples\Chapter_09\Resumes\20200910 folder.
3. Click the Plus icon in the Output to field, name the value as FolderInfo, and click Ok.
4. Next, add a Write Line activity in the Designer panel after the Get Folder Info activity.
5. In the Text field, click the Plus icon, and select the Text option.
6. In the Text Builder, type Folder.
7. While the Text Builder is still open, click the Plus icon, select Use Saved Value option, and hover over FolderInfo to select Name.
8. Next, in the Text Builder, type was last modified on:.
9. Next, in the Text Builder, click the Plus icon, select Use Saved Value option, and hover over FolderInfo to select LastModifiedDate. The complete text should read as Folder FolderInfo ► Name was last modified on: FolderInfo ä LastModifiedDate.
10. Click Save.

Once you have completed the exercise, the final configuration of the **Get Folder Info** activity should resemble Figure 9-8. Figure 9-9 shows the output of this exercise.

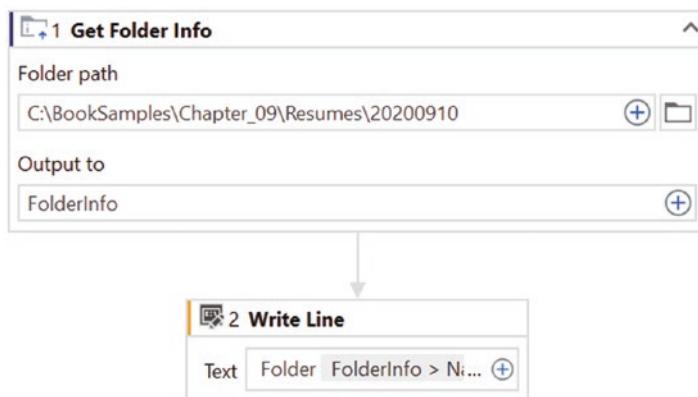


Figure 9-8. Final configuration of Get Folder Info activity

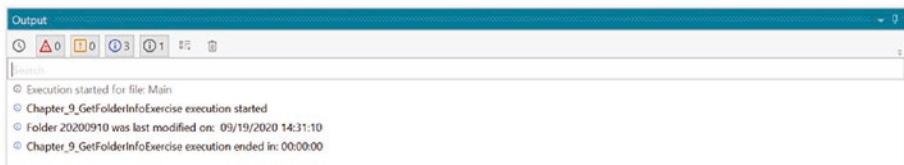


Figure 9-9. Output of Get Folder Info activity

Folder Exists

The **Folder Exists** activity allows you to check if a folder already exists in the target location.

Configuration

This section provides instructions on how to configure a **Folder Exists** activity, shown in Figure 9-10.



Figure 9-10. Activity card for *Folder Exists*

Folder path: This is a mandatory configuration available from the activity card. This configuration allows you to specify the full path of the folder that you want to check exists or not.

Save result: This is an optional configuration available from the activity card. This configuration allows you to specify where to save the result for later use. This activity returns a value of True if the folder exists and False if the folder does not exist.

EXERCISE

Goal: Use the *Folder Exists* activity to check if the current date folder (YYYYMMDD) already exists in C:\BookSamples\Chapter_09\Resumes location, and print the result.

Source Code: Chapter_9_FolderActivitiesExercise

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

1. In StudioX, add the *Folder Exists* activity to a blank process.
2. We are going to dynamically generate the path of the folder we want to check exists or not. In the *Folder path* field, click the Plus icon, select *Text* option, and type C:\BookSamples\Chapter_09\Resumes\.

3. Then click the Plus icon in Text Builder and hover over Project Notebook (Notes) to select [Notes] Date!YYYYMMDD. Figure 9-11 (on the next page) shows how the text should look. Click Save.
4. Click the Plus icon in the Save result field, name the value as FolderExists, and click Ok.
5. Add the Write Line activity to the Designer panel after the Folder Exists activity.
6. In the Text field, click the Plus icon and select the Text option. In the Text Builder, type Folder exists:.
7. While the Text Builder is still open, click the Plus icon and hover over Use Saved Value to select FolderExists. Click Save.

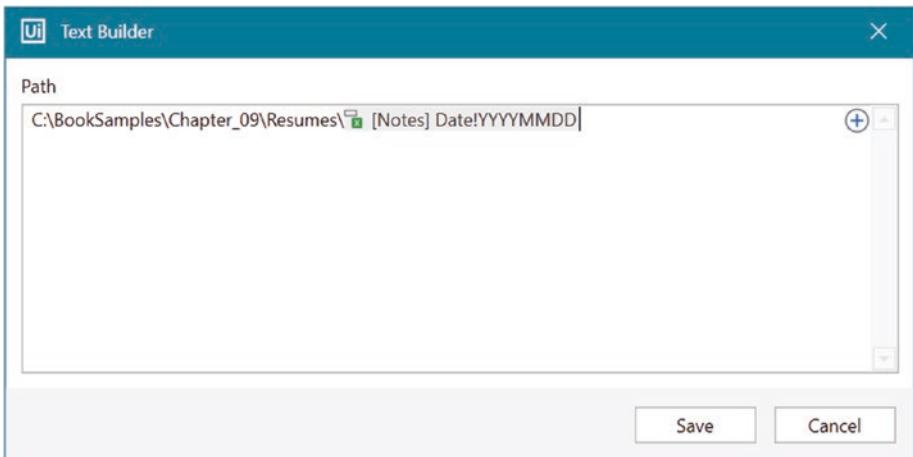


Figure 9-11. Dynamic path of folder for Folder Exists activity

Once you have completed the exercise, the final configuration of the **Folder Exists** activity should resemble Figure 9-12. Figure 9-13 shows the output of this exercise.

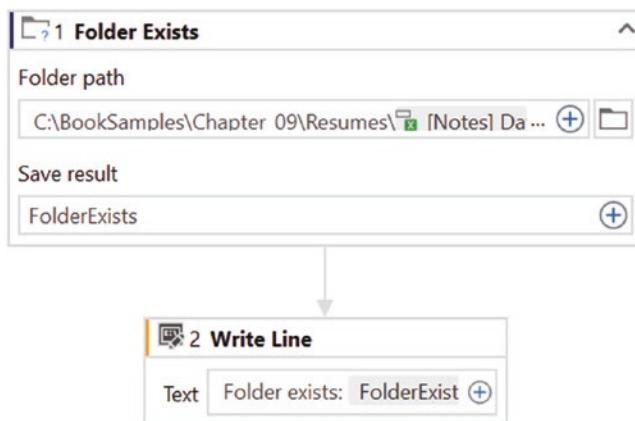


Figure 9-12. Final configuration of *Folder Exists* exercise

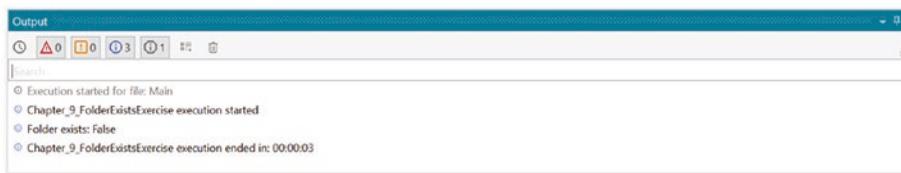


Figure 9-13. Output of *Folder Exists* exercise

Create Folder

The **Create Folder** activity allows you to create a new folder in the specified location.

Configuration

This section provides instructions on how to configure a **Create Folder** activity, shown in Figure 9-14.



Figure 9-14. Activity card for Create Folder

Folder name: This is a required configuration available on the activity card. This configuration allows you to specify the full path of the folder that you want to create.

EXERCISE

Goal: Use the Create Folder activity to create a new folder for the current date (YYYYMMDD) in C:\BookSamples\Chapter_09\Resumes location.

Source Code: Chapter_9_FolderActivitiesExercise

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

1. In StudioX, add the Create Folder activity to a blank process.
2. We are going to generate the path of the folder dynamically. In the Folder path field, click the Plus icon, select Text option, and type C:\BookSamples\Chapter_09\Resumes\.
3. Next, click the Plus icon in the Text Builder and hover over Project Notebook (Notes) to select [Notes] Date!YYYYMMDD. Figure 9-15 shows the final text entered in the Text Builder. Click Save.

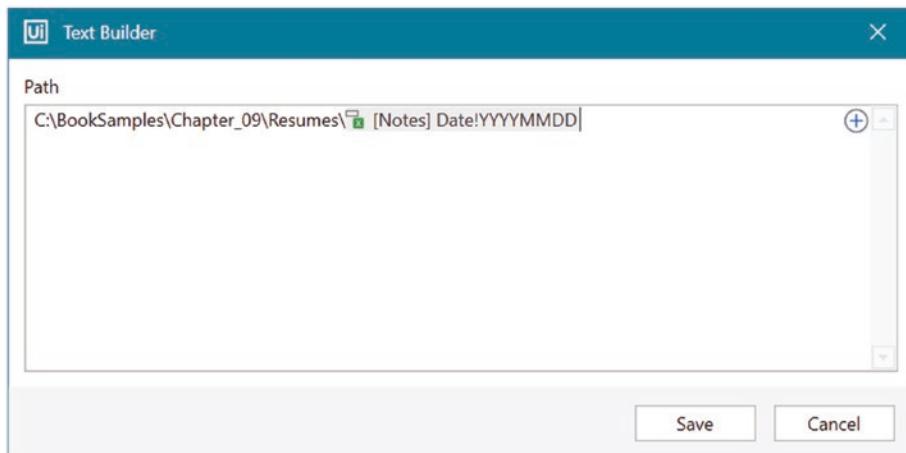


Figure 9-15. Dynamic path of folder for Create Folder activity

Once you have completed the exercise, the final configuration of the **Create Folder** activity should resemble Figure 9-16. Figure 9-17 shows the folder structure of the target location before and after this exercise.



Figure 9-16. Final configuration of Create Folder activity exercise

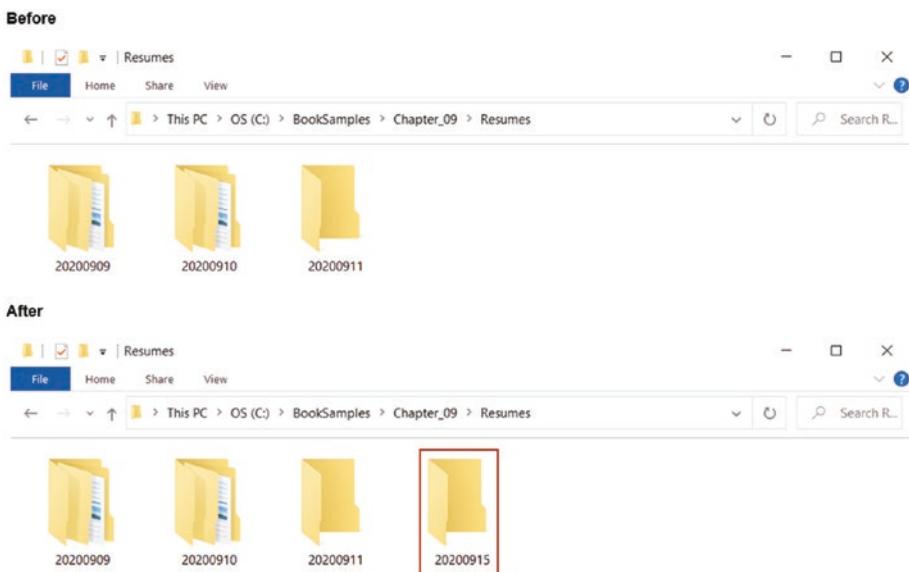


Figure 9-17. Result of Create Folder activity exercise

Delete Folder

The **Delete Folder** activity allows you to delete a specified folder.

Configuration

This section provides instructions on how to configure a **Delete Folder** activity, shown in Figure 9-18.



Figure 9-18. Activity card for Delete Folder

Folder name: This is a required configuration available on the activity card. This configuration allows you to specify the full path of the folder that you want to delete.

Recursive: This is an optional configuration available on the Properties panel. This configuration allows you to specify if the folder should be deleted with all content and subfolders or to only delete the folder if it is empty. By default, the value is checked, that is, the folder will be deleted with all of the contents inside.

Tip If you receive an error like the one shown in Figure 9-19, then you need to set the Recursive flag to True.

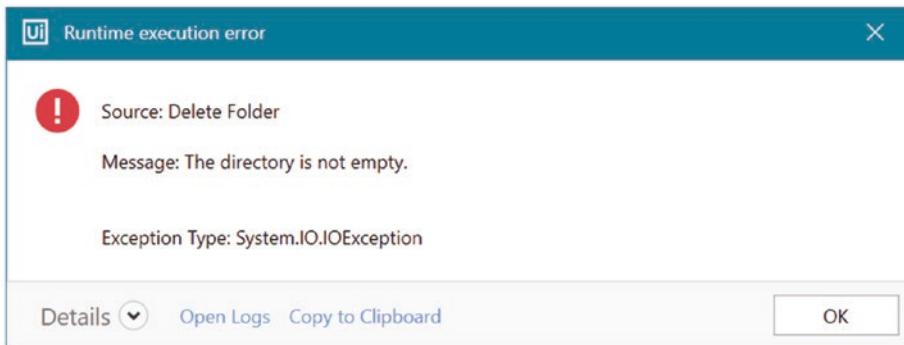


Figure 9-19. Error message while deleting a folder that has contents

EXERCISE

Goal: Use the Delete Folder activity to delete C:\BookSamples\Chapter_09\Archive\20200908 folder and all its contents.

Source Code: Chapter_9_FolderActivitiesExercise

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

1. In StudioX, add the Delete Folder activity to a blank process.
2. Click the Folder icon and select C:\BookSamples\Chapter_09\Archive\20200908 folder.
3. Leave the Recursive property set to the default value of True. This will ensure all subfolders and files are also deleted.

Once you have completed the exercise, the final configuration of the **Delete Folder** activity should resemble Figure 9-20. Figure 9-21 shows the folder structure of the target location before and after this exercise.



Figure 9-20. Final configuration of Delete Folder activity exercise

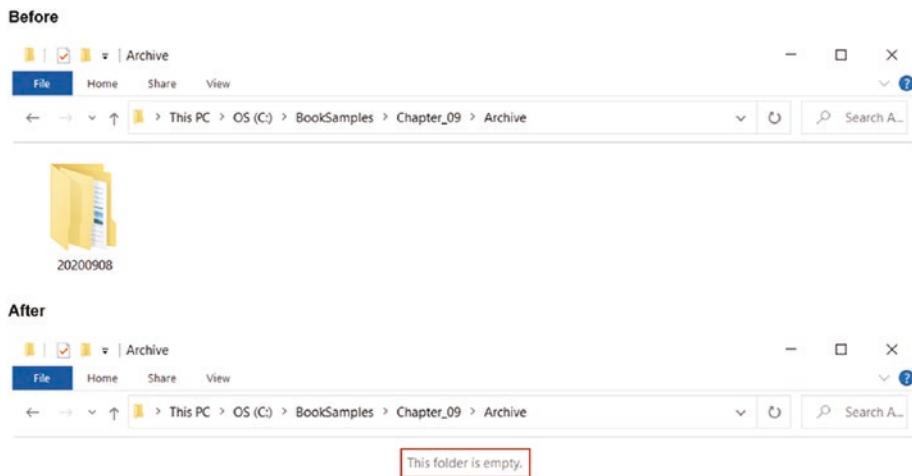


Figure 9-21. Result of Delete Folder activity exercise

Copy Folder

The **Copy Folder** activity allows you to copy a specified folder to another location.

Note This activity leaves the original folder(s) in place.

Configuration

This section provides instructions on how to configure a **Copy Folder** activity, shown in Figure 9-22.



Figure 9-22. Activity card for Copy Folder

From: This is a required configuration available on the activity card. This configuration allows you to specify the full path of the folder that you want to copy.

To: This is a required configuration available on the activity card. This configuration allows you to specify the target location where the From folder needs to be copied.

Overwrite: This is an optional configuration available on the activity card. This configuration allows you to specify that in case a folder with the same name exists in the target location, should the automation overwrite the contents.

Include subfolders: This is an optional configuration available on the activity card. This configuration allows you to specify if all subfolders of the source folder need to be copied to the target location as well.

EXERCISE

Goal: Use the Copy Folder activity to copy all contents of C:\BookSamples\Chapter_09\Templates folder to C:\BookSamples\Chapter_09\Resumes\20200911. The target folder is empty before this exercise.

Source Code: Chapter_9_FolderActivitiesExercise

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

1. In StudioX, add the Copy Folder activity to a blank process.
2. In the From field, click the Folder icon and select C:\BookSamples\Chapter_09\Templates\ folder.
3. In the To field, click the Folder icon and select C:\BookSamples\Chapter_09\Resumes\20200911 folder.
4. The From folder in this exercise does not have any subfolders, so you can leave the Overwrite and Include subfolders checked as is.

Once you have completed the exercise, the final configuration of the **Copy Folder** activity should resemble Figure 9-23. Figure 9-24 shows the folder structure of the target location before and after this exercise.

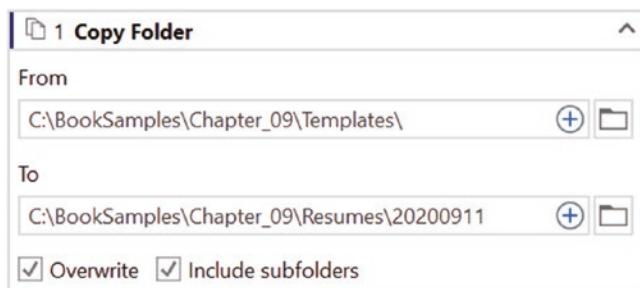


Figure 9-23. Final configuration of Copy Folder activity exercise

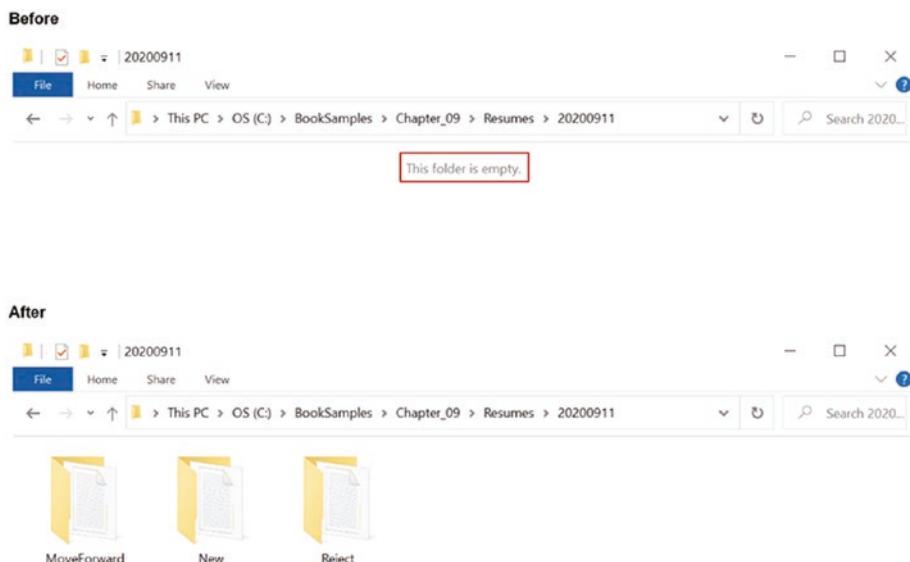


Figure 9-24. Result of Copy Folder activity exercise

Move Folder

The **Move Folder** activity allows you to copy a specified folder to another location.

Note Unlike the Copy Folder activity that leaves the original folder as is, this activity moves the original folder.

Configuration

This section provides instructions on how to configure a **Move Folder** activity, shown in Figure 9-25.



Figure 9-25. Activity card for Move Folder

From: This is a required configuration available on the activity card. This configuration allows you to specify the full path of the folder that you want to move.

To: This is a required configuration available on the activity card. This configuration allows you to specify the target location where From folder needs to be moved.

Overwrite: This is an optional configuration available on the activity card. This configuration allows you to specify that in case a folder with the same name exists in the target location, should the automation overwrite the contents.

EXERCISE

Goal: Use the Move Folder activity to move all contents of C:\BookSamples\Chapter_09\Resumes\20200909 folder to C:\BookSamples\Chapter_09\Archive.

Source Code: Chapter_9_FolderActivitiesExercise

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

1. In StudioX, add the Move Folder activity to a blank process.
2. In the From field, click the Folder icon and select C:\BookSamples\Chapter_09\Resumes\20200909 folder.
3. In the To field, click the Folder icon and select C:\BookSamples\Chapter_09\Archive folder.
4. Leave the Overwrite flag checked.

Once you have completed the exercise, the final configuration of the **Move Folder** activity should resemble Figure 9-26. Figure 9-27 shows the folder structure of the target location before and after this exercise.

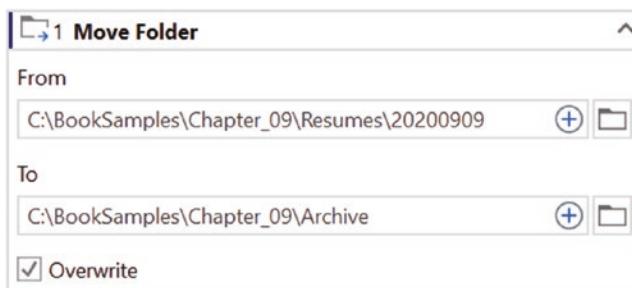


Figure 9-26. Final configuration of Move Folder activity exercise

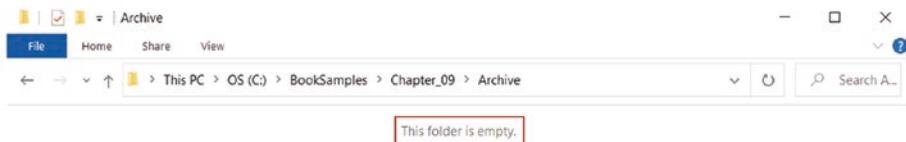
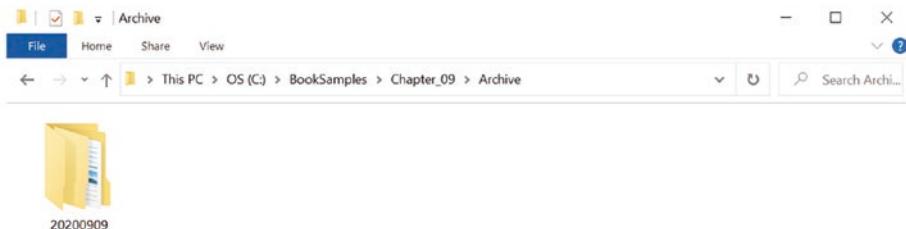
Before**After**

Figure 9-27. Result of the Move Folder activity exercise

For Each File In Folder

The **For Each File In Folder** activity allows you to take actions on all files within a folder and its subfolders. You can add other activities in the body of **For Each File In Folder** activity, and all those activities will be executed for every file in the specified folder.

Configuration

This section provides instructions on how to configure a **For Each File In Folder** activity, shown in Figure 9-28.

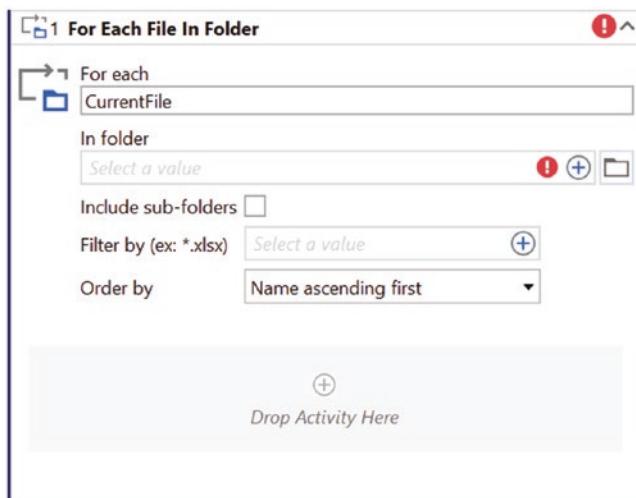


Figure 9-28. Activity card for For Each File In Folder

For each: This is a required configuration available on the activity card. This configuration allows you to specify how you want to reference the files in the nested activities. By default, the value is CurrentFile. Figure 9-29 shows how this is used by other activities in the body of For Each File In Folder activity.

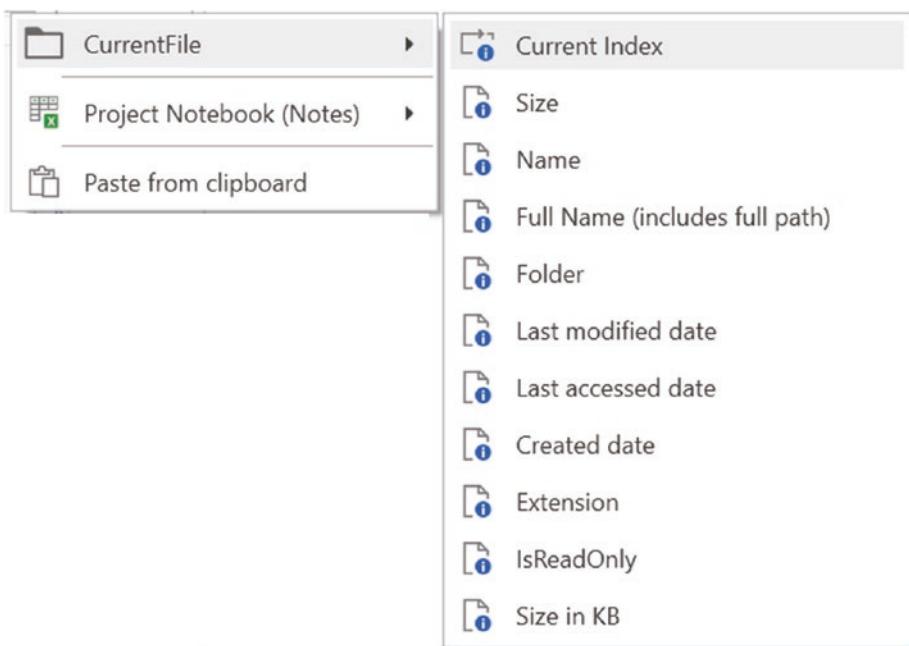


Figure 9-29. File properties available to activities in body of For Each File In Folder activity

In folder: This is a required configuration available on the activity card. This configuration allows you to specify the full path of the folder where the files you want to iterate over are located.

Include sub-folders: This is an optional configuration available on the activity card. This configuration allows you to specify if you want to execute the nested activities in the files from the subfolders as well. By default, this option is not selected.

Filter by: This is an optional configuration available on the activity card. This configuration allows you to pick specific types of files from the specified folder. For example, your folder might contain .txt, .docx, and .xlsx files, but you only want to look at .docx and ignore the rest of the files; you will use this property to specify *.docx.

Order by: This is an optional configuration available on the activity card. This configuration allows you to specify the order in which you want the child activities executed. Figure 9-30 provides a list of all options available for sorting a list of files.

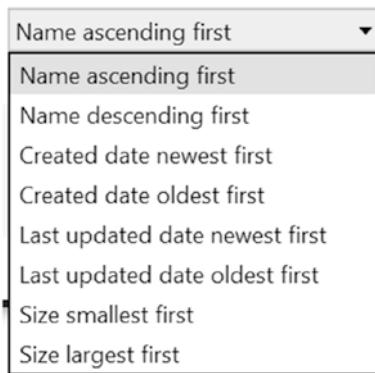


Figure 9-30. Order by configuration options

EXERCISE

Goal: Use the For Each File In Folder activity to print names of all Word documents (*.docx) in the C:\BookSamples\Chapter_09\Resumes folder (including subfolders).

Source Code: Chapter_9_FolderActivitiesExercise

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

1. In StudioX, add the For Each File In Folder activity to a blank process.
2. In the In folder field, click the Folder icon and select the C:\BookSamples\Chapter_09\Resumes folder.
3. Check the Include sub-folders flag.

4. In the Filter by field, click the Plus icon, select Text, and enter *.docx. This will ensure that only Word document files are returned.
5. Add the Write Line activity in the body of For Each File In Folder activity. In the Text field, click the Plus icon and hover over Current File to select Full Name (includes full path).

Once you have completed the exercise, the final configuration of the **For Each File In Folder** activity should resemble Figure 9-31. Figure 9-32 shows the output of this exercise.

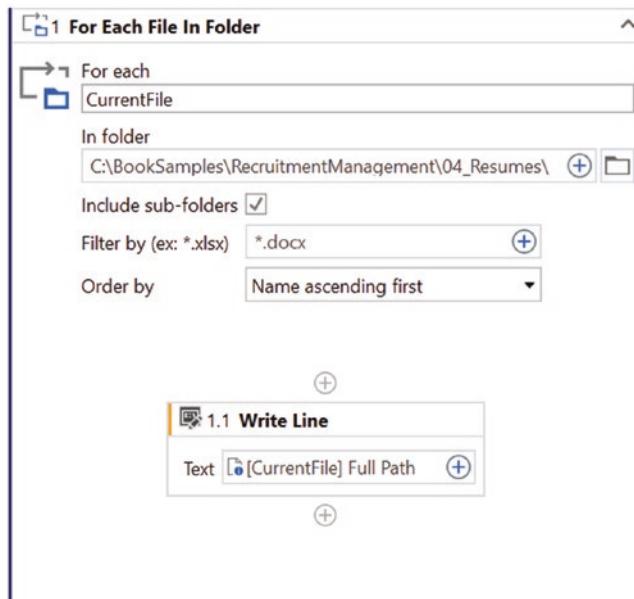


Figure 9-31. Final configuration of For Each File In Folder activity exercise

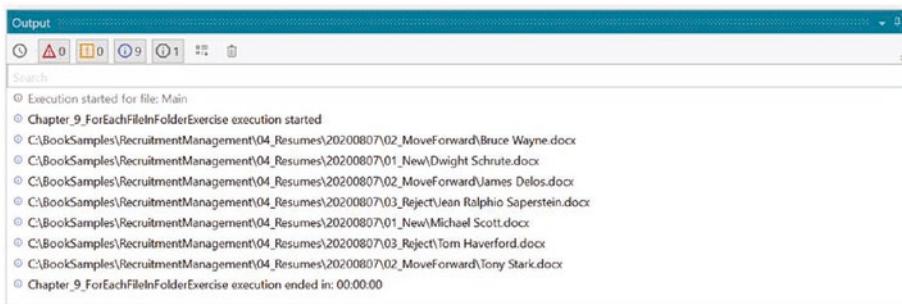


Figure 9-32. Output of For Each File In Folder activity

Compress/Zip Files

The **Compress/Zip Files** activity allows you to create a compressed file using multiple files or multiple folders.

Configuration

This section provides instructions on how to configure a **Compress/Zip Files** activity, shown in Figure 9-33.



Figure 9-33. Activity card for Compress/Zip Files

Compressed file name: This is a required configuration available on the activity card. This configuration allows you to specify the name of the compressed file (.zip) that will be created.

Content to zip: This is an optional configuration available on the activity card. This configuration allows you to specify the target location where you want the file to be extracted.

Compressed file: This is an optional configuration available on the activity card. This configuration allows you to save information about the compressed file. This will create a variable that can be used later.

Compression level: This is an optional configuration available on the Properties panel. This configuration allows you to specify how small to compress the file. The more compression you want, the slower it will be. There are four options: None (default), Fast, Normal, and Maximum.

Overwrite existing file: This is an optional configuration available on the Properties panel. This configuration allows you to specify that in case a file with the same name exists in the target location, whether the automation should overwrite it. By default this is checked, that is, the automation should overwrite file with the same name.

Password: This is an optional configuration available on the Properties panel. This configuration allows you to set a password for the compressed file.

EXERCISE

Goal: Use the Compress/Zip Files activity to compress the contents of C:\BookSamples\Chapter_09\Resumes\20200910\MoveForward folder in MoveForwardResumes_20200910.zip file.

Source Code: Chapter_9_CompressedFilesExercise

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

1. In StudioX, add the Compress/Zip Files activity to a blank process.
2. In the Compressed file name field, click the Plus icon, select Text, and type C:\BookSamples\Chapter_09\Resumes\20200910\MoveForward\MoveForwardResumes_20200910.zip.

CHAPTER 9 FILE AUTOMATION

3. In the Content to zip field, select the Folder option. Click the Folder icon and select C:\BookSamples\Chapter_09\Resumes\20200910\MoveForward folder.
4. In the Compressed file field, click the Plus icon, select Save for Later Use, and name the value as CompressedFileInfo.
5. Add the Write Line activity right after the Compress/Zip Files activity. In the Text field, click the Plus icon, select Use Saved Value, and hover over CompressedFileInfo to select Full Path.

Once you have completed the exercise, the final configuration of the **Compress/Zip Files** activity should resemble Figure 9-34. Figure 9-35 shows the before and after folder structure of the target location.

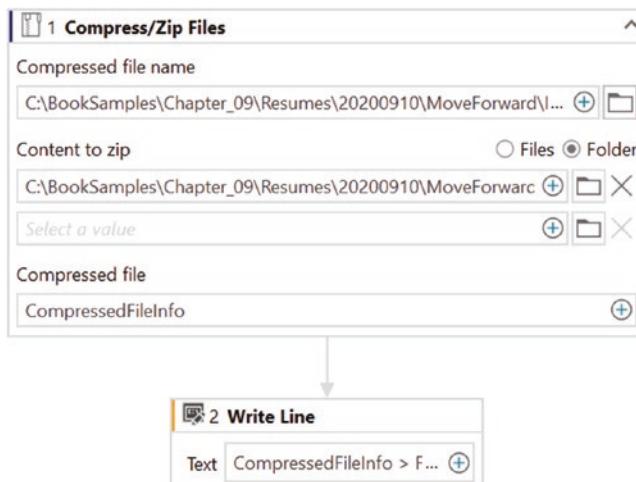


Figure 9-34. Final configuration of Compress/Zip Files activity

Before**After**

Figure 9-35. Result of Compress/Zip Files activity exercise

Extract/Unzip Files

The **Extract/Unzip Files** activity allows you to extract the contents of a compressed file to a specific folder.

Configuration

This section provides instructions on how to configure an **Extract/Unzip Files** activity, shown in Figure 9-36.

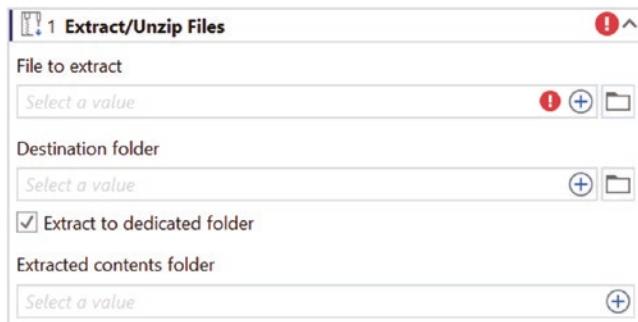


Figure 9-36. Activity card for Extract/Unzip Files

File to extract: This is a required configuration available on the activity card. This configuration allows you to specify the full path of the compressed file (.zip) that you want to extract.

Destination folder: This is an optional configuration available on the activity card. This configuration allows you to specify the target location where you want the file to be extracted.

Extract to dedicated folder: This is an optional configuration available on the activity card. This configuration allows you to specify if you want to extract files to a dedicated folder inside the Destination folder. The name of the new folder will be the same as the name of the compressed file. This can help ensure that files with the same name in the Destination folder are not overwritten.

Extracted contents folder: This is an optional configuration available on the activity card. This configuration allows you to save information about the extracted folder. If the Extract to dedicated folder flag was checked, then all properties of that folder, otherwise all properties of the Destination folder will be saved in Data Manager. By default, this is left unchecked.

Password: This is an optional configuration available on the Properties panel. This configuration allows you to specify a password in case the compressed file is password protected.

Skip unsupported files: This is an optional configuration available on the Properties panel. This configuration allows you to skip files that cannot be extracted. This helps avoid any errors that might be thrown if StudioX is unable to extract specified file. By default, this value is not set.

EXERCISE

Goal: Use the Extract/Unzip Files activity to extract the contents of C:\BookSamples\Chapter_09\Source\StaffingAgencyResumes_20200911.zip file to C:\BookSamples\Chapter_09\Resumes\20200911\New folder, and print information about the extracted folder.

Source Code: Chapter_9_CompressedFilesExercise

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

1. In StudioX, add the Extract/Unzip Files activity to a blank process.
2. In the Files to extract field, click the Folder icon and select C:\BookSamples\Chapter_09\Source\StaffingAgencyResumes_20200911.zip file.
3. In the Destination folder field, click the Folder icon and select C:\BookSamples\Chapter_09\Resumes\20200911\New folder.
4. Uncheck the Extract to dedicated folder flag as we want all files to be extracted in the specified folder.
5. In the Extracted contents folder field, click the Plus icon, select Save for Later Use, and name the value as DestinationFolderInfo.

6. Add the Write Line activity right after the Extract/Unzip Files activity. In the Text field, click the Plus icon, select Use Saved Value, and hover over DestinationFolderInfo to select Full Path.

Once you have completed the exercise, the final configuration of the **Extract/Unzip Files** activity should resemble Figure 9-37. Figure 9-38 shows the contents of the extracted file, while Figure 9-39 shows information about the extracted folder.

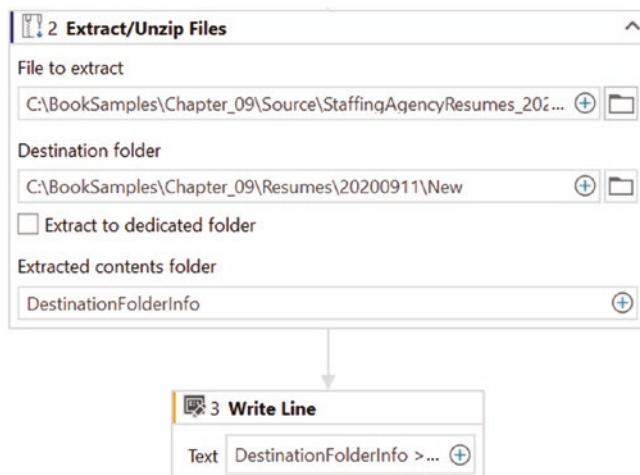


Figure 9-37. Final configuration of Extract/Unzip Files activity

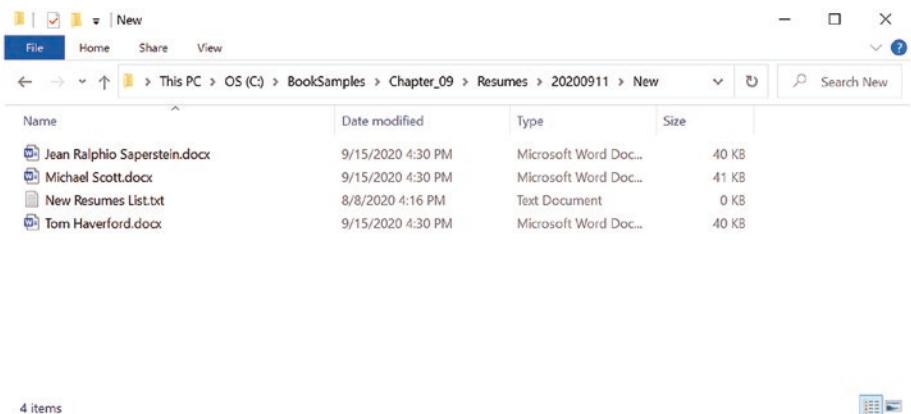


Figure 9-38. Contents of the extracted file

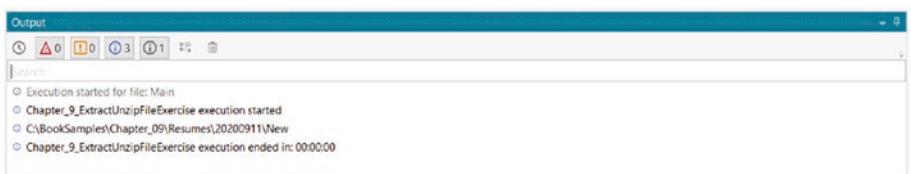


Figure 9-39. Output of the Extract/Unzip Files activity

Get File Info

The **Get File Info** activity allows you to retrieve and save specific properties of a specified file. Figure 9-40 shows file properties that you can access using this activity.

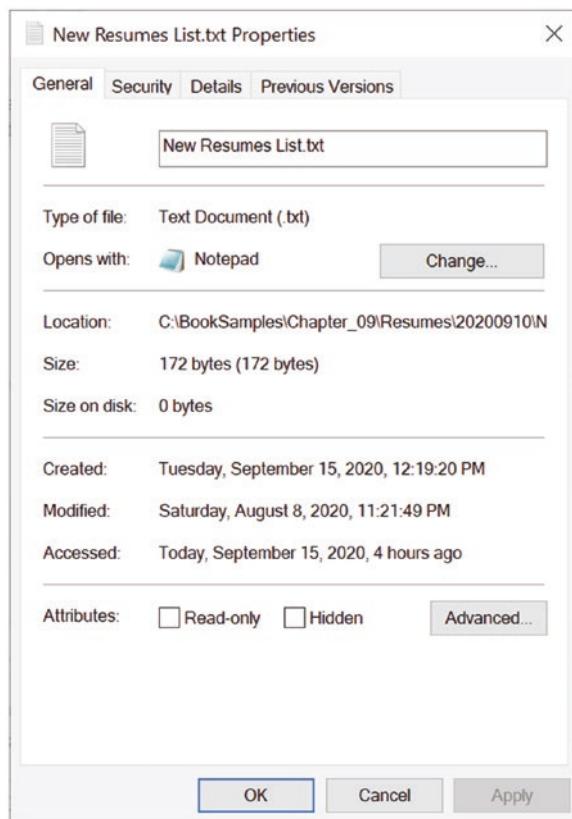


Figure 9-40. File properties window

Configuration

This section provides instructions on how to configure a **Get File Info** activity, shown in Figure 9-41.



Figure 9-41. Activity card for Get File Info

File path: This is a required configuration available on the activity card. This configuration allows you to specify the full path of the file that you want to retrieve the information from.

Output to: This is an optional configuration available on the activity card. This configuration allows you to save retrieved information in the Data Manager for use later.

Properties returned by this activity, shown in Figure 9-42, can later be used to decide if specific actions need to be performed. For example, if your automation frequently downloads data from a site, you can use the Created date **property** (see description in Table 9-2) of the previously downloaded file to check when was the last time data was downloaded. You can use this information to only download delta since the last download.

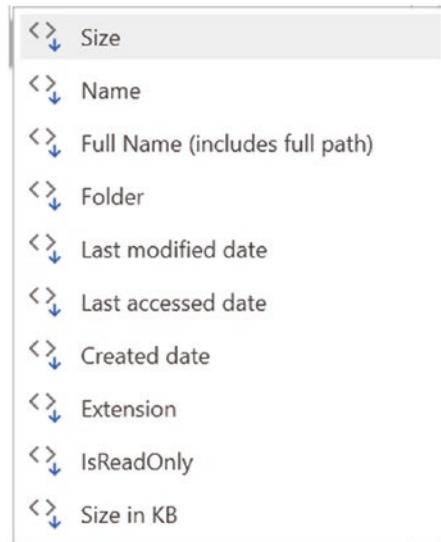


Figure 9-42. Properties returned by Get File Info activity

Table 9-2 provides a brief description of all properties returned by this activity.

Table 9-2. Properties returned by Get File Info activity

Property	Description
Name	Name of the specified file (without folder path)
Full Name	Name of the specified file (with folder path)
Folder	Path of the folder that contains the file
Extension	Extension of the specified file (e.g., txt or docx)
Created date	Data and time when specified file was created
Last modified date	Data and time when specified file was last modified
Last accessed date	Data and time when specified file was last accessed
Size	Size of the file in bytes
Size in KB	Size of the specified folder in kilobytes (KB)
IsReadOnly	Flag that shows if file is read only, i.e., it cannot be edited

EXERCISE

Goal: Use the Get File Info activity to get properties of C:\BookSamples\Chapter_09\Resumes\20200910\New\New Resumes List.txt file, and print the last modified date.

Source Code: Chapter_9_FileActivitiesExercise

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

1. In StudioX, add the Get File Info activity to a blank process.
2. In the File path field, click the Folder icon and select C:\BookSamples\Chapter_09\Resumes\20200910\New\New Resumes List.txt file.
3. Click the Plus icon in Output to field, name the value as FileInfo, and click Ok.

4. Next, add a Write Line activity in the Designer panel after the Get File Info activity.
5. In the Text field, click the Plus icon, and select Text. In the Text Builder, type File was last modified on:.
6. While the Text Builder is still open, click the Plus icon, select Use Saved Value option, and hover over FileInfo to select LastModifiedDate. The complete text should read as File was last modified on: FileInfo.LastModifiedDate. Click Save.

Once you have completed the exercise, the final configuration of the **Get File Info** activity should resemble Figure 9-43. Figure 9-44 shows the output of this exercise.

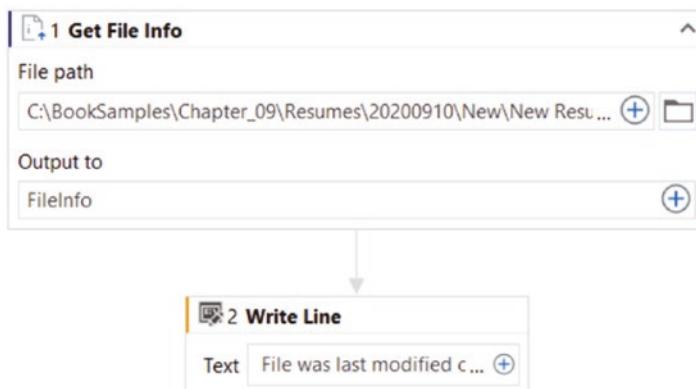


Figure 9-43. Final configuration of Get File Info activity exercise



Figure 9-44. Output of Get File Info activity exercise

File Exists

The **File Exists** activity allows you to check if a file already exists in the target location.

Configuration

This section provides instructions on how to configure a **File Exists** activity, shown in Figure 9-45.



Figure 9-45. Activity card for File Exists

File path: This is a required configuration available on the activity card. This configuration allows you to specify the full path of the file that you want to check exists or not.

Save result: This is an optional configuration available on the activity card. This configuration allows you to save the result from this activity in the Data Manager for later use. This activity returns a True if the file exists and False if the file does not exist. As an example, let us say this activity returns that a file already exists; you can use this information to decide if that existing file needs to be deleted, moved, updated, or overwritten.

EXERCISE

Goal: Use the File Exists activity to check if the C:\BookSamples\Chapter_09\Resumes\20200911\New\New Resumes List.txt already exists, and print the result.

Source Code: Chapter_9_FileActivitiesExercise

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

1. In StudioX, add the File Exists activity to a blank process.
2. In the File path field, click the Plus icon, select Text option, and type C:\BookSamples\Chapter_09\Resumes\20200911\New\New Resumes List.txt.
3. Click the Plus icon in the Save result field, name the value as FileExists, and click Ok.
4. Add the Write Line activity to the Designer panel after the File Exists activity.
5. In the Text field, click the Plus icon and select the Text option. In the Text Builder, type File exists:.
6. While the Text Builder is still open, click the Plus icon and hover over Use Saved Value to select FileExists. Click Save.

Once you have completed the exercise, the final configuration of the **File Exists** activity should resemble Figure 9-46. Figure 9-47 shows the output of this exercise.

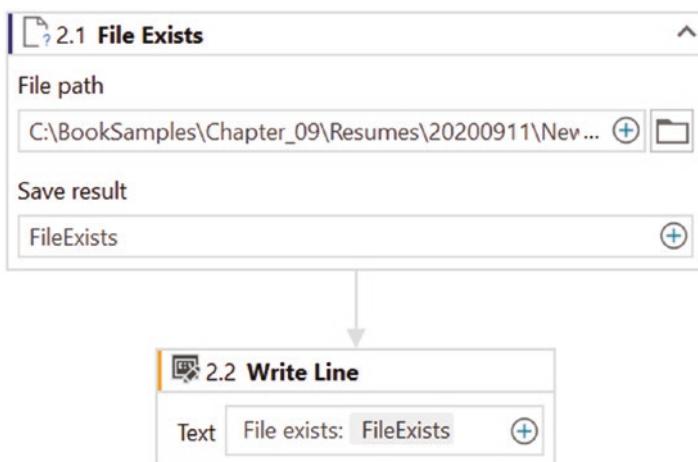


Figure 9-46. Final configuration of File Exists activity exercise

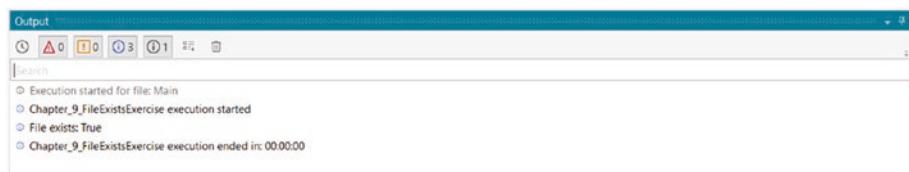


Figure 9-47. Output of File Exists activity exercise

Create File

The **Create File** activity allows you to create a new file in the specified location.

Configuration

This section provides instructions on how to configure a **Create File** activity, shown in Figure 9-48.



Figure 9-48. Activity card for Create File

File location: This is a required configuration available on the activity card. This configuration allows you to specify the full path of the folder where you want to create the new file.

File name: This is a required configuration available on the activity card. This configuration allows you to specify the name of the new file that you want to create.

EXERCISE

Goal: Use the Create File activity to create a new file Pending Interview List.txt in the C:\BookSamples\Chapter_09\Interviews\Pending location.

Source Code: Chapter_9_FileActivitiesExercise

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

1. In StudioX, add the Create File activity to a blank process.
2. In the File location field, click the Folder icon and select C:\BookSamples\Chapter_09\Interviews\Pending.
3. In the File name folder, click the Plus icon, select the Text option, and type Pending Interview List.txt. Click Save.

CHAPTER 9 FILE AUTOMATION

Once you have completed the exercise, the final configuration of the **Create File** activity should resemble Figure 9-49. Figure 9-50 shows the folder structure of the target location before and after this exercise.

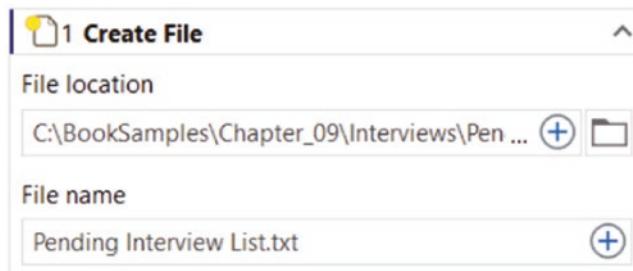


Figure 9-49. Final configuration of Create Folder activity

Before



After

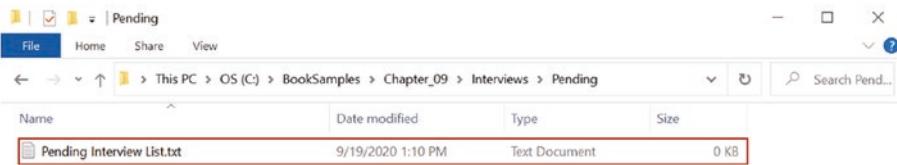


Figure 9-50. Result of Create File activity exercise

Delete File

The **Delete File** activity allows you to delete a specified file.

Configuration

This section provides instructions on how to configure a **Delete File** activity, shown in Figure 9-51.



Figure 9-51. Activity card for Delete File

File name: This is a mandatory configuration available from the activity card. This configuration allows you to specify the full path of the file that you want to delete.

EXERCISE

Goal: Use the Delete File activity to delete the C:\BookSamples\Chapter_09\Source\StaffingAgencyResumes_20200911.zip file.

Source Code: Chapter_9_FileActivitiesExercise

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

1. In StudioX, add the Delete File activity to a blank process.
2. Click the Folder icon and select C:\BookSamples\Chapter_09\Source\StaffingAgencyResumes_20200911.zip file.

Once you have completed the exercise, the final configuration of the **Delete File** activity should resemble Figure 9-52. Figure 9-53 shows the before and after folder structure of the target location.



Figure 9-52. Final configuration of Delete File activity exercise

Before



After



Figure 9-53. Result of Delete File activity exercise

Copy File

The **Copy File** activity allows you to copy a specified file to another location.

Note This activity leaves the original file in place.

Configuration

This section provides instructions on how to configure a **Copy File** activity, shown in Figure 9-54.



Figure 9-54. Activity card for Copy File

From: This is a required configuration available on the activity card. This configuration allows you to specify the full path of the file that you want to copy.

To: This is a required configuration available on the activity card. This configuration allows you to specify the target location where **From** file needs to be copied. You will need to specify the file name – it can be the same as or different from the original.

Overwrite: This is an optional configuration available on the activity card. This configuration allows you to specify that in case a file with the same name exists in the target location, should the automation overwrite contents.

EXERCISE

Goal: Use the Copy File activity to copy C:\BookSamples\Chapter_09\Source\StaffingAgencyResumes_20200909.zip file to C:\BookSamples\Chapter_09\Archive location.

Source Code: Chapter_9_FileActivitiesExercise

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

1. In StudioX, add the Copy File activity to a blank process.
2. In the From field, click the Folder icon and select C:\BookSamples\Chapter_09\Source\StaffingAgencyResumes_20200909.zip file.
3. In the To field, click the Plus icon, select the Folder icon, and select C:\BookSamples\Chapter_09\Archive folder. You will need to specify the file name here as well, and type StaffingAgencyResumes_20200909.zip. Click Save.
4. Check the Overwrite flag.

Once you have completed the exercise, the final configuration of the **Copy File** activity should resemble Figure 9-55. Figure 9-56 shows the before and after folder structure of the target location. If you look at the original file, it would still be in the original folder.

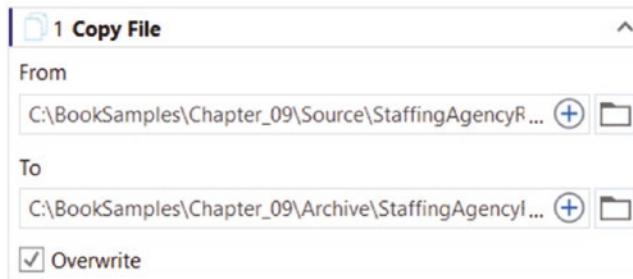


Figure 9-55. Final configuration of Copy File activity exercise



Figure 9-56. Result of Copy File activity exercise

Move File

The **Move Folder** activity allows you to copy a specified folder to another location.

Note Unlike the Copy File activity, this activity does not leave the original file in place.

Configuration

This section provides instructions on how to configure a **Move File** activity, shown in Figure 9-57.



Figure 9-57. Activity card for Move File

From: This is a required configuration available on the activity card. This configuration allows you to specify the full path of the file that you want to move.

To: This is a required configuration available on the activity card. This configuration allows you to specify the target location where From file needs to be copied.

Overwrite: This is an optional configuration available on the activity card. This configuration allows you to specify that in case a file with the same name exists in the target location, should the automation overwrite contents.

EXERCISE

Goal: Use the Move File activity to move C:\BookSamples\Chapter_09\Resumes\20200910\MoveForward\Bruce Wayne.docx file to C:\BookSamples\Chapter_09\Interviews\Pending location.

Source Code: Chapter_9_FileActivitiesExercise

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

1. In StudioX, add the Move File activity to a blank process.
2. In the From field, click the Folder icon and select C:\BookSamples\Chapter_09\Resumes\20200910\MoveForward\Bruce Wayne.docx folder.
3. In the To field, click the Folder icon and select C:\BookSamples\Chapter_09\Interviews\Pending folder.
4. Leave the Overwrite field unchecked.

Once you have completed the exercise, the final configuration of the **Move File** activity should resemble Figure 9-58. Figure 9-59 shows the before and after folder structure of the source and target locations. If you look at the original file, it would still be in the original folder.

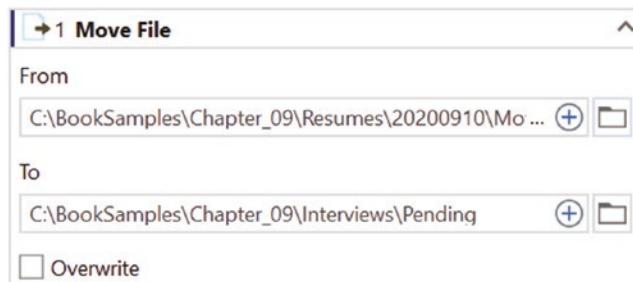


Figure 9-58. Final configuration of Move File activity exercise

CHAPTER 9 FILE AUTOMATION

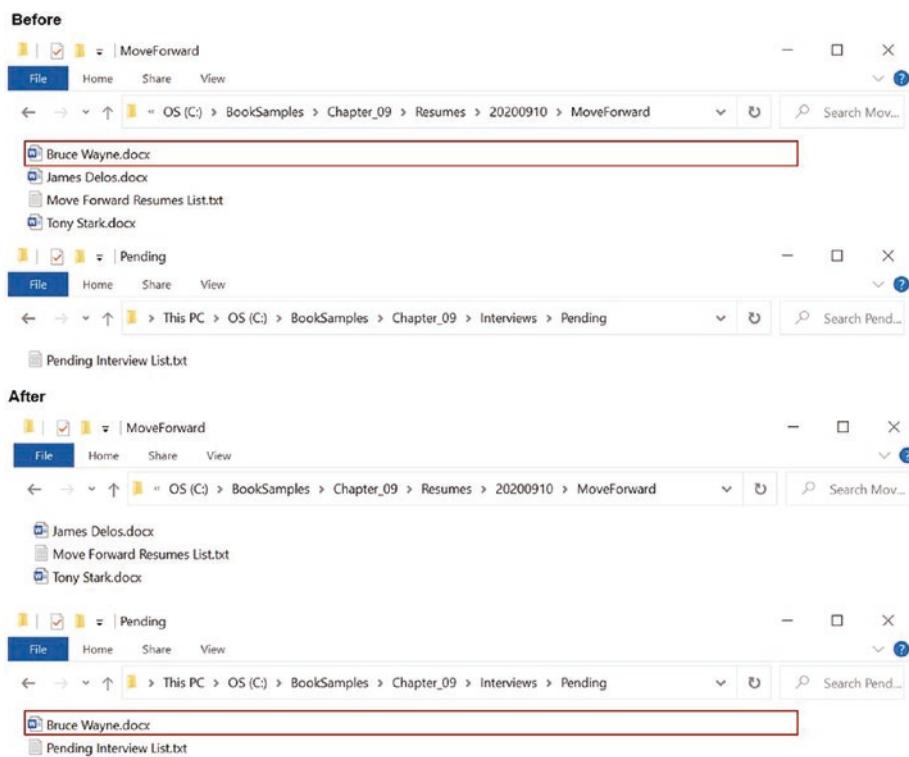


Figure 9-59. Result of Move File activity exercise

Write Text File

The **Write Text File** activity allows you to write specified text to a text-based file.¹

Note If the specified file does not exist, then this activity will first create the file and then write text to the file. Also, this activity will always overwrite any text already present in the specified file.

¹Text-based files can be opened with any basic text editor, for example, TXT and CSV.

Configuration

This section provides instructions on how to configure a **Write Text File** activity, shown in Figure 9-60.



Figure 9-60. Activity card for Write Text File

Text: This is a required configuration available on the activity card. This configuration allows you to specify the text that you want to write in the target file. You can utilize the Text Builder to configure this.

Write to filename: This is a required configuration available on the activity card. This configuration allows you to specify the file where you want to write text.

Encoding: This is an optional configuration available on the Properties panel. This configuration allows you to specify the Encoding^{2,3} in case the content contains any characters other than standard English.

²Learn more about character encoding from W3C website – www.w3.org/International/questions/qa-what-is-encoding

³Complete list of encoding types supported by UiPath – <https://docs.uipath.com/activities/docs/supported-character-encoding>

EXERCISE

Goal: Use the Write Text File activity to write text to C:\BookSamples\Chapter_09\Resumes\20200911\New\New Resumes List.txt file.

Source Code: Chapter_9_TextFileActivitiesExercise

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

1. In StudioX, add the Write Text File activity to a blank process.
2. In the Text field, click the Plus icon, and select Text. In Text Builder, enter Resumes received on, click the Plus icon, and hover over Project Notebook (Notes) to select [Notes] Date!YYYYMMDD.
3. In the Write to filename field, click Folder icon and select C:\BookSamples\Chapter_09\Resumes\20200911\New\New Resumes List.txt file.

Once you have completed the exercise, the final configuration of the **Write Text File** activity should resemble Figure 9-61. Figure 9-62 shows the text file with updated content.



Figure 9-61. Final configuration of Write Text File activity exercise



Figure 9-62. Result of Write Text File activity exercise

Append Line

The **Append Line** activity allows you to add a line of text to the end of a text-based file.

Note The Append Line activity will not overwrite or delete any text that exists in the file already.

Configuration

This section provides instructions on how to configure an **Append Line** activity, shown in Figure 9-63.

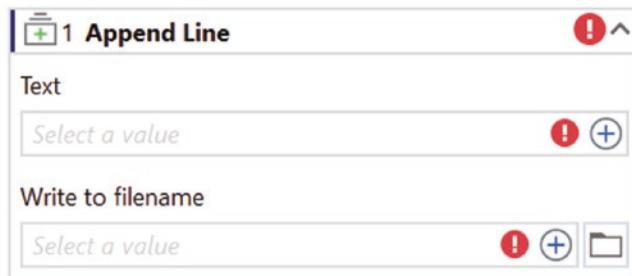


Figure 9-63. Activity card for Append Line

Text: This is a required configuration available on the activity card. This configuration allows you to specify the text that you want to append in the file.

Write to filename: This is a required configuration available on the activity card. This configuration allows you to specify the file where you want to append text.

Encoding: This is an optional configuration available on the Properties panel. This configuration allows you to specify the Encoding^{4,5} in case the content contains any characters other than standard English.

Use default encoding: This is an optional configuration available on the Properties panel. This configuration allows you to specify if StudioX should be the default encoding of the file. By default, the value is set to False, that is, to not use the default encoding.

EXERCISE

Goal: Use the Append Line activity to append the name of each Word file in C:\BookSamples\Chapter_09\Resumes\20200911\New folder to New Resumes List.txt file (in the same folder).

Source Code: Chapter_9_TextFileActivitiesExercise

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

1. In StudioX, add the For Each File In Folder activity to a blank process.
2. In the In folder field, click the Folder icon and select the C:\BookSamples\Chapter_09\Resumes\20200911\New folder.

⁴Learn more about character encoding from W3C website – www.w3.org/International/questions/qa-what-is-encoding

⁵Complete list of encoding types supported by UiPath – <https://docs.uipath.com/activities/docs/supported-character-encoding>

3. In the Filter by field, click the Plus icon, select the Text option, and enter *.docx. This will ensure that only Word document files are returned.
4. Add the Append Line activity in the body of For Each File In Folder activity.
5. In the Text field, click the Plus icon, hover over CurrentFile, and select Name.
6. In the Write to filename field, click the Folder icon and select C:\BookSamples\Chapter_09\Resumes\20200911\New\New Resumes List.txt file.

Once you have completed the exercise, the final configuration of the **Append Line** activity should resemble Figure 9-64. Figure 9-65 shows the text file with updated content.

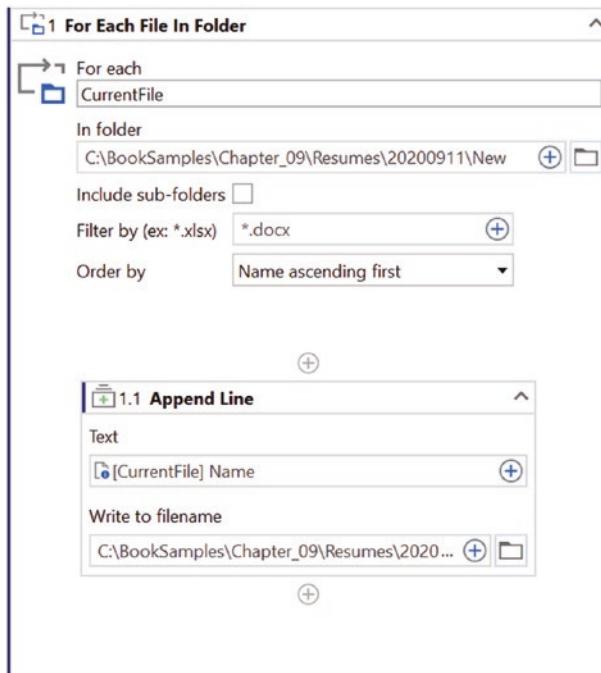


Figure 9-64. Final configuration of Append Line activity exercise



Figure 9-65. Result of Append Line activity exercise

Read Text File

The **Read Text File** activity allows you to read the contents (all characters) from a text file.

Configuration

This section provides instructions on how to configure a **Read Text File** activity, shown in Figure 9-66.



Figure 9-66. Activity card for Read Text File

Filename: This is a required configuration available on the activity card. This configuration allows you to specify the file from which you want to read text.

Output to: This is an optional configuration available on the activity card. This configuration allows you to save the contents of the text file for later use.

Encoding: This is an optional configuration available on the Properties panel. This configuration allows you to specify the Encoding^{6,7} in case the content contains any characters other than standard English.

EXERCISE

Goal: Use the Read Text File activity to read contents of C:\BookSamples\Chapter_09\Resumes\20200911\New\New Resumes List.txt file.

Source Code: Chapter_9_TextFileActivitiesExercise

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

1. In StudioX, add the Read Text File activity to a blank process.
2. In the Filename field, click Folder icon and select the C:\BookSamples\Chapter_09\Resumes\20200911\New\New Resumes List.txt file.
3. In the Output to field, click the Plus icon and select Copy to clipboard option.
4. Add the Write Line activity right after the Read Text File activity, click the Plus icon, and select Paste from clipboard option.

⁶Learn more about character encoding from W3C website – www.w3.org/International/questions/qa-what-is-encoding

⁷Complete list of encoding types supported by UiPath – <https://docs.uipath.com/activities/docs/supported-character-encoding>

CHAPTER 9 FILE AUTOMATION

Once you have completed the exercise, the final configuration of the **Read Text File** activity should resemble Figure 9-67. Figure 9-68 shows the output of this exercise.

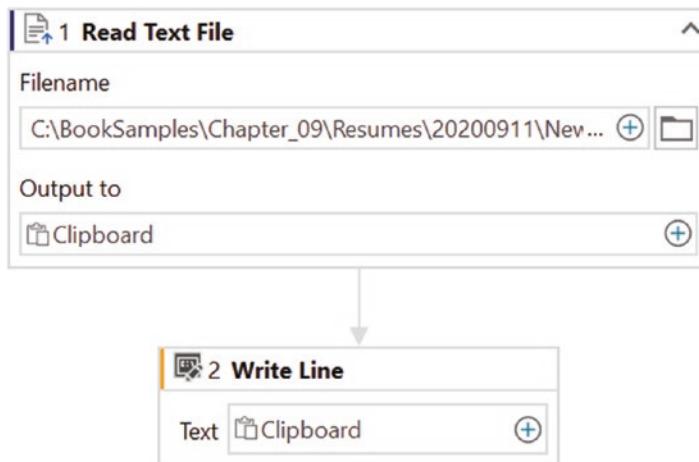


Figure 9-67. Final configuration of Read Text File activity exercise



Figure 9-68. Output of Read Text File activity exercise

CHAPTER 10

Presentation Automation

PowerPoint presentations are the most common and effective software used by organizations to display key information and engage audiences in various presentation settings from boardroom meetings and industry conferences to company training and project implementations. UiPath's StudioX Presentation Automation capabilities allow users to automate common tasks such as adding or replacing text, copy pasting slides, and adding data/images/files to slides in a PowerPoint.

Learning Objectives

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

- Add, delete, copy, and move slides in a presentation
- Add or replace text in a slide
- Add tables, image, video, and file to a slide
- Run macros in PowerPoint
- Save PowerPoint as PDF or another PowerPoint file type

Sample Overview

Throughout this chapter, we will be using a simplified version of a report generation process to showcase the usage of all Presentation Automation activities.

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

File System Structure

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_10**. Figure 10-1 shows the physical folder structure required for this sample. This folder structure comes with the source code.

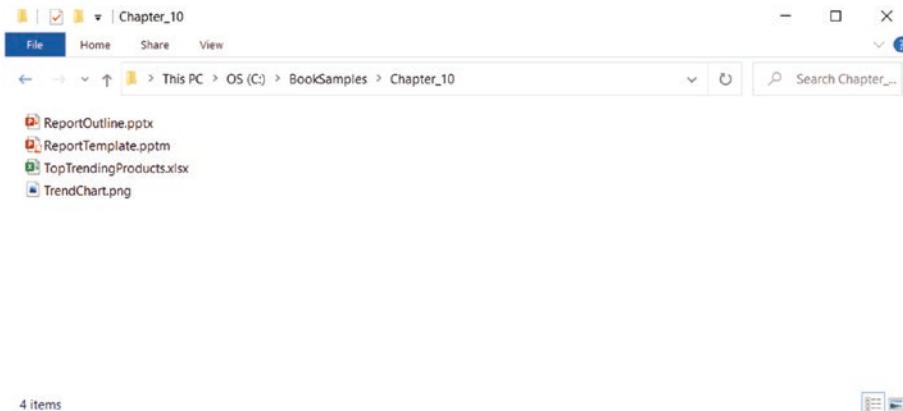


Figure 10-1. Files used for the Report Generation exercise

ReportTemplate.pptm: This is a macro-enabled PowerPoint that we will be using as a template to generate our reports. Figure 10-2 shows the initial state of the presentation.

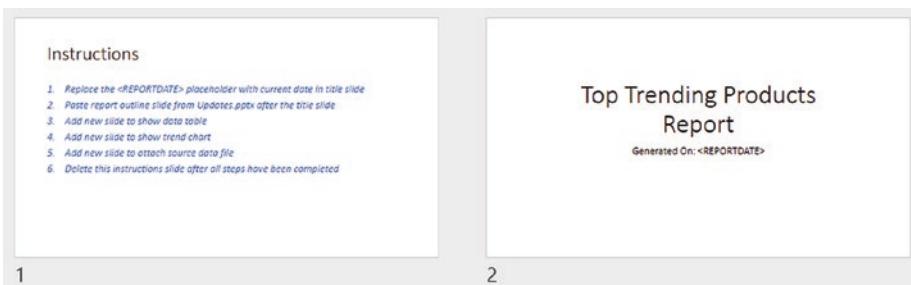


Figure 10-2. Initial state of the presentation

ReportOutline.pptx: This is a single-slide PowerPoint. We will be copying this slide to our report.

TopTrendingProducts.xlsx: This Excel spreadsheet contains a list of top trending products. We will be using the data from this spreadsheet in our report and attach this file in our report.

TrendChart.png: This is an image file. We will be displaying this image in our report.

Activities Reference

As shown in Figure 10-3, all Presentation Automation activities can be found under the Presentation category. The following sections will provide instructions on how to configure and use each activity.

Activity	Description
Add Text to Slide	Inserts text into a placeholder.
Copy Paste Slide	Copies a slide and paste it to another position.
Delete Slide	Delete a slide.
Replace Text in Presentation	Replaces all occurrences of a text within a presentation.
Run Presentation Macro	Runs a specified macro in a macro-enabled presentation.
Save PowerPoint File As	Save a PowerPoint file as a new file.
Save Presentation as PDF	Exports a PowerPoint presentation to PDF.

Figure 10-3. Activities for Presentation Automation

Use PowerPoint Presentation

The **Use PowerPoint Presentation** activity allows you to select the PowerPoint presentation that you want to automate.

This activity will contain all the actions that you want to take on the PowerPoint. For example, if you want to add a new slide, the **Add New Slide** activity will be nested in the body of **Use PowerPoint Presentation** activity.

Configuration

This section provides instructions on how to configure a **Use PowerPoint Presentation** activity, shown in Figure 10-4.

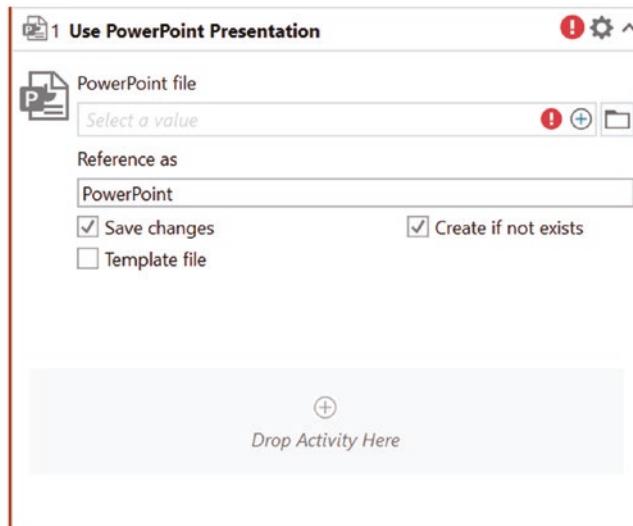


Figure 10-4. Activity card for Use PowerPoint Presentation

PowerPoint file: This is a required configuration available on the activity card. This configuration allows you to specify the PowerPoint file that you plan to automate.

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

Save changes: This is an optional configuration available on the activity card. This configuration ensures that the PowerPoint is saved after each action is taken on an activity. By default, this option is checked.

Create if not exists: This is an optional configuration available on the activity card. This configuration ensures that a blank file is created if it does not exist in the target location. By default, this option is checked.

Template file: This is an optional configuration available on the activity card. This configuration is applicable when you are creating a new PowerPoint file. This configuration allows you to specify a template file, and StudioX uses the Slide Master or template file for the new PowerPoint file.

Edit password: This is an optional configuration available on the Properties panel. This field is used for editing a password-protected PowerPoint file. Enter the password in this field if necessary.

Password: This is an optional configuration available on the Properties panel. This field is used for opening a password-protected PowerPoint file. Enter the password in this field if necessary.

Read only: This is an optional configuration available on the Properties panel. If checked, the PowerPoint will open in read-only mode for automation. This option will allow the automation to extract data from a PowerPoint even if it is password protected. By default, this option is not checked.

Copy Paste Slide

The **Copy Paste Slide** activity allows you to copy or move a slide within the same PowerPoint presentation or from one PowerPoint presentation to another.

Configuration

This section provides instructions on how to configure a **Copy Paste Slide** activity, shown in Figure 10-5.



Figure 10-5. Activity card for Copy Paste Slide

Source presentation: This is a required configuration available on the activity card. This configuration specifies the PowerPoint presentation from which slide will be copied or moved.

Slide to copy: This is a required configuration available on the activity card. This configuration allows you to specify the slide from the source PowerPoint presentation that needs to be copied or moved.

Destination presentation: This is a required configuration available on the activity card. This configuration specifies the PowerPoint presentation to which the slide will be copied or moved.

Where to insert: This is a required configuration available on the activity card. This configuration allows you to specify where in the destination PowerPoint presentation the slide should be inserted.

Move: This is an optional configuration available on the activity card. This configuration specifies if the slide should be just copied or moved to the destination PowerPoint presentation. By default, this is not checked.

EXERCISE

Goal: Use the Copy Paste Slide activity to copy the Report Outline slide from ReportOutline.pptx and paste it after the Title slide in ReportTemplate.pptm. Figure 10-2 shows the state of the presentation before this exercise.

Source Code: Chapter_10-PresentationAutomationExercise

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

1. In StudioX, add the Use PowerPoint Presentation activity.
2. In the PowerPoint file field, click the Folder icon, and select C:\BookSamples\Chapter_10\ReportTemplate.pptm.
3. Set the value of the Reference as field to ReportTemplatePPT.
4. Uncheck Save changes and Create if not exists flags.
5. In the body of the Use PowerPoint Presentation activity, add another Use PowerPoint Presentation activity. The outer one will be used to reference the destination PowerPoint presentation, and the inner one will reference the source PowerPoint presentation.
6. In the PowerPoint file field, click the Folder icon, and select C:\BookSamples\Chapter_10\ReportOutline.pptx.
7. In the Reference as field, enter ReportOutlinePPT.
8. Uncheck Save changes and Create if not exists flags.
9. In the inner Use PowerPoint Presentation activity, add the Copy Paste Slide activity.

10. In the Source presentation field, select ReportOutlinePPT.
11. In the Slide to copy field, select Slide 1, or use the Plus icon to enter 1.
12. In the Destination presentation field, select ReportTemplatePPT.
13. In the Where to insert field, click the Plus icon, select the Number option, and type 3.

Once you have completed the exercise, the final configuration of the **Copy Paste Slide** activity should resemble Figure 10-6.

Note We unchecked the Save changes option, so before you run the automation, open the ReportTemplate.pptm; this will allow you to view all the changes that the automation is making.

Once the automation runs, the Report Outline slide will be inserted at the end of the ReportTemplate.pptm, as shown in Figure 10-7.

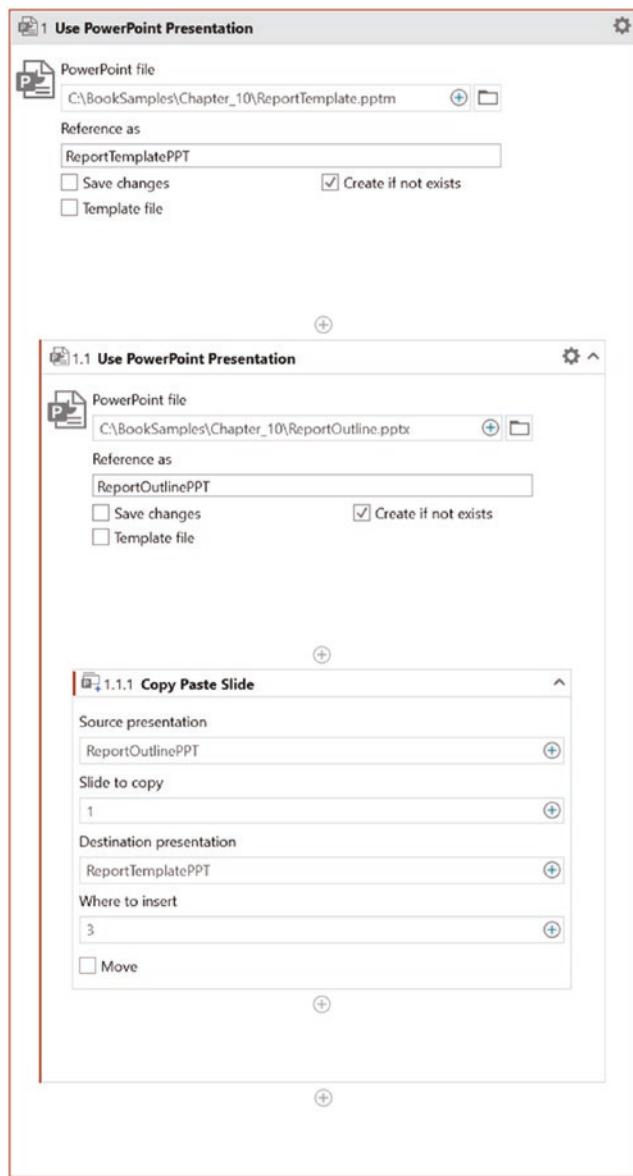


Figure 10-6. Final configuration for Copy Paste Slide exercise



Figure 10-7. The state of the ReportTemplate.pptm after the Copy Paste Slide exercise

Delete Slide

The **Delete Slide** activity allows you to delete a specified slide from a PowerPoint presentation.

Configuration

This section provides instructions on how to configure a **Delete Slide** activity, shown in Figure 10-8.



Figure 10-8. Activity card for Delete Slide

Presentation: This is a required configuration available on the activity card. This configuration specifies the PowerPoint presentation from which the slide needs to be deleted. This field is pre-populated with the PowerPoint presentation from the parent **Use PowerPoint Presentation** activity.

Slide number: This is a required configuration available on the activity card. This configuration specifies the slide number that needs to be deleted.

EXERCISE

Goal: Building on our previous exercise, use the Delete Slide activity to delete the Instructions slide from C:\BookSamples\Chapter_10\ReportTemplate.pptm. Figure 10-7 shows the current state of the presentation.

Source Code: Chapter_10-PresentationAutomationExercise

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

1. In StudioX, add the Delete Slide activity within the outer Use PowerPoint Presentation activity after the inner Use PowerPoint Presentation activity from the previous exercise.
2. The Presentation field will be pre-populated with the ReportTemplatePPT reference from the parent activity.
3. In the Slide number field, click the Plus icon, and select the Number option. The Instructions slide, as shown in Figure 10-7, is the first slide in the presentation, so type 1.

Once you have completed the exercise, the final configuration of the **Delete Slide** activity should resemble Figure 10-9.

Note We unchecked the Save changes option, so before you run the automation, open the ReportTemplate.pptm; this will allow you to view all the changes that the automation is making.

Figure 10-10 shows the state of the presentation after this activity is run.

CHAPTER 10 PRESENTATION AUTOMATION

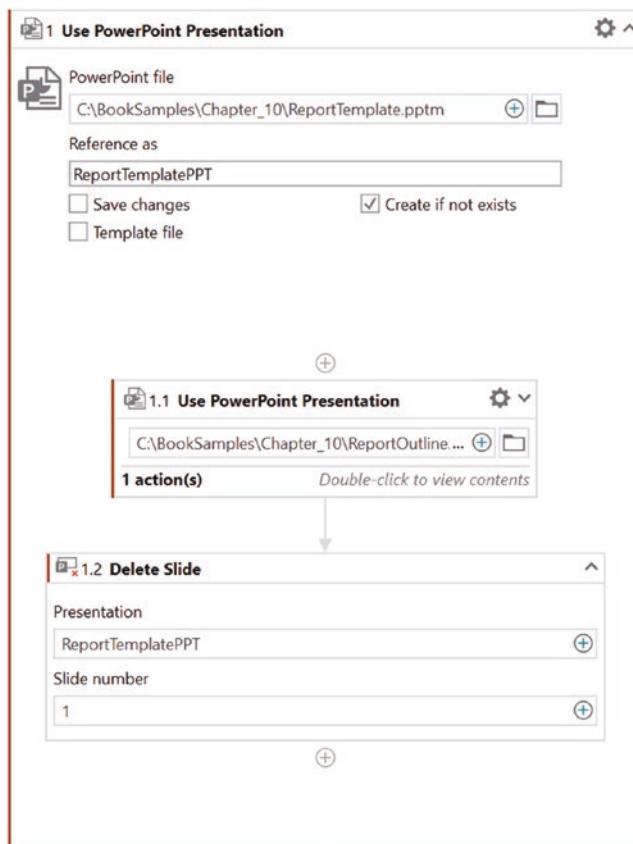


Figure 10-9. Final configuration for Delete Slide activity exercise



Figure 10-10. The state of the ReportTemplate.pptm after the Delete Slide exercise

Add New Slide

The **Add New Slide** activity allows you to add a new slide to the PowerPoint presentation.

Configuration

This section provides instructions on how to configure an **Add New Slide** activity, shown in Figure 10-11.

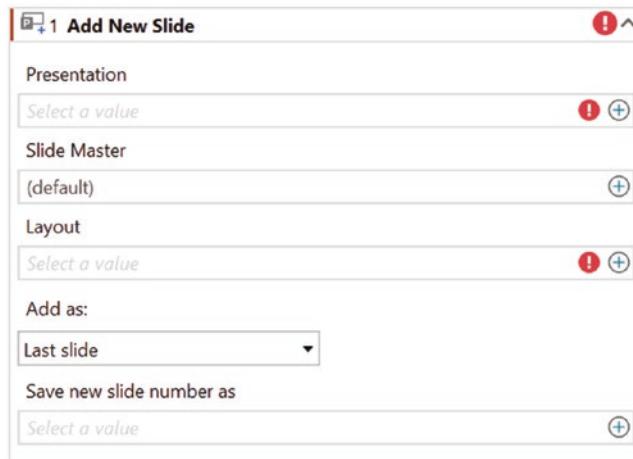


Figure 10-11. Activity card for Add New Slide

Presentation: This is a required configuration available on the activity card. This configuration specifies the PowerPoint presentation in which a new slide needs to be added. This field is pre-populated with the PowerPoint presentation from the parent Use PowerPoint Presentation activity.

Slide Master: This is a required configuration available on the activity card. In PowerPoint, you can update the Theme from the Design tab, shown in Figure 10-12. When this activity is placed within a Use PowerPoint Presentation activity, this lists the current Theme being used in the slides. This configuration can be used to specify what Theme the new slide should use. By default, the value of this configuration is (default).

CHAPTER 10 PRESENTATION AUTOMATION

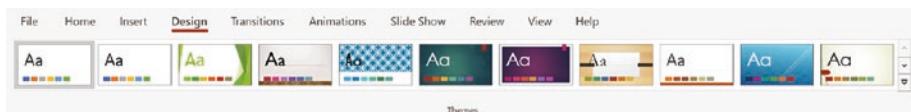


Figure 10-12. Themes in PowerPoint

Layout: This is a required configuration available on the activity card. In PowerPoint, you can view the layout options for a slide by right-clicking the slide. Figure 10-13 shows all the layout options available in the selected Theme. StudioX also allows you to specify the layout.

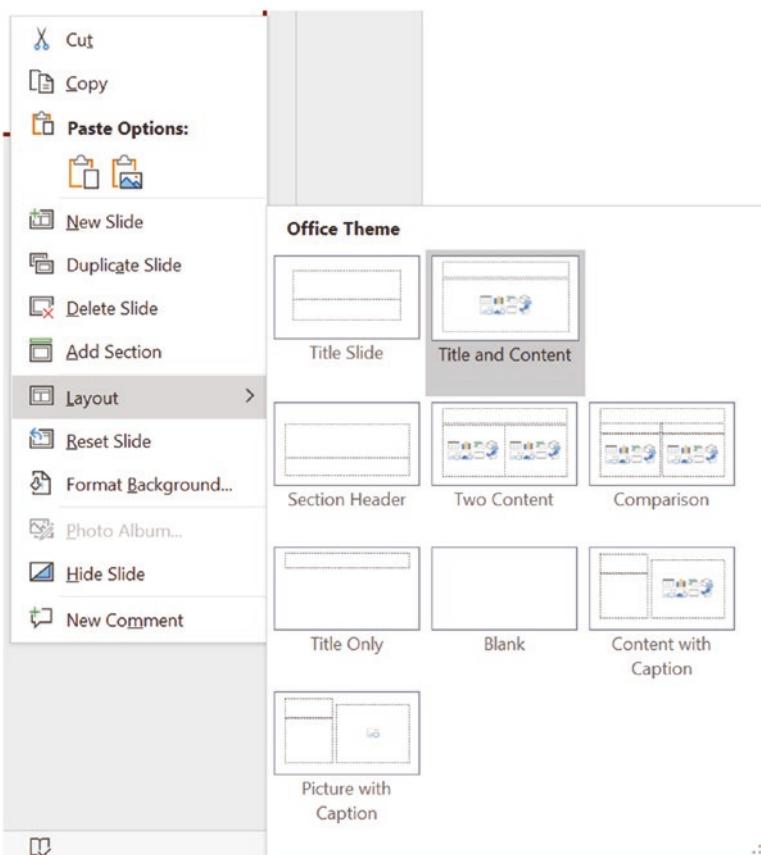


Figure 10-13. Layout options in PowerPoint

Add as: This is a required configuration available on the activity card. This configuration allows you to specify in what location this new slide should be added. You can select the First Slide, Last Slide, or Slide number as options. By default, Last Slide is selected.

Save new slide number as: This is an optional configuration available on the activity card. This configuration allows you to save the slide number of this newly created slide for later use.

EXERCISE

Goal: Building on our previous exercise, use the Add New Slide activity to add three new slides to the C:\BookSamples\Chapter_10\ReportTemplate.pptm. All three slides should use the Title and Content layout. Figure 10-10 shows the state of PowerPoint presentation before this exercise.

Source Code: Chapter_10-PresentationAutomationExercise

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

1. In StudioX, add the Add New Slide activity to the body of the outer Use PowerPoint Presentation activity after the Delete Slide activity from the previous exercise. This slide will be used later for adding a data table containing all top trending products.
2. The Presentation field will be pre-populated with the ReportTemplatePPT reference from the parent activity.
3. In the Layout field, select the Title and Content option.
4. In the Add as field, leave the default value of Last slide in the dropdown.

5. In the Save new slide number as field, click the Plus icon, select Save for Later Use option, and type DataTableSlideNumber as value.
6. Repeat steps 1–4. This second new slide will be used for showing an image of trending products chart. In the Save new slide number as field, click the Plus icon, select Save for Later Use option, and type TrendChartSlideNumber as the value.
7. Repeat steps 1–4. This third new slide will be used for attaching source data spreadsheet. In the Save new slide number as field, click the Plus icon, select Save for Later Use option, and type SourceDataSlideNumber as the value.

Once you have completed the exercise, the final configuration of the **Add New Slide** activity should resemble Figure 10-14.

Note We unchecked the Save changes option, so before you run the automation, open the ReportTemplate.pptm; this will allow you to view all the changes that the automation is making.

Figure 10-15 shows the state of the presentation after this activity is run.

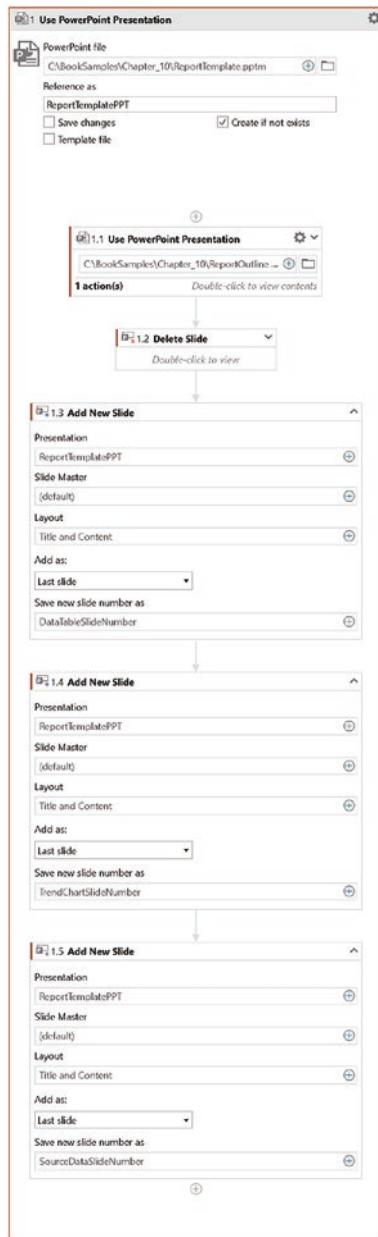


Figure 10-14. Final configuration of the Add New Slide activity exercise

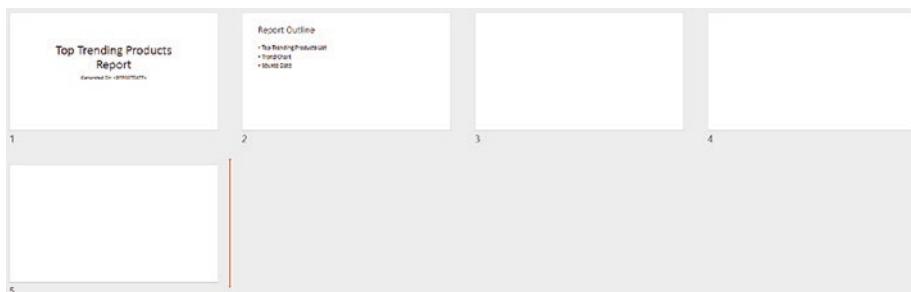


Figure 10-15. The state of the ReportTemplate.pptm after the Add New Slide exercise

Replace Text in Presentation

The **Replace Text in Presentation** activity allows you to replace all occurrences of specified text in a presentation.

Configuration

This section provides instructions on how to configure a **Replace Text in Presentation** activity, shown in Figure 10-16.

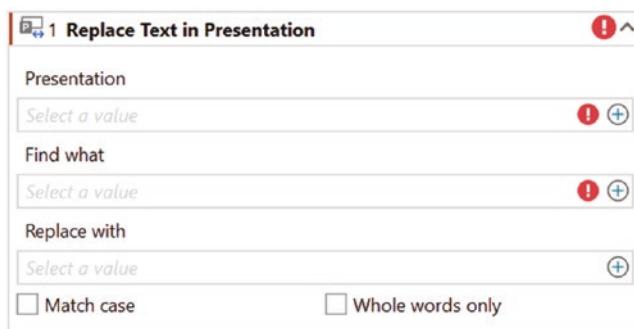


Figure 10-16. Activity card for Replace Text in Presentation

Presentation: This is a required configuration available on the activity card. This configuration specifies the PowerPoint presentation in which a new slide needs to be added. This field is pre-populated with the PowerPoint presentation from the parent Use PowerPoint Presentation activity.

Find what: This is a required configuration available on the activity card. You can use this configuration to specify the text that needs to be searched and replaced.

Replace with: This is an optional configuration available on the activity card. This configuration allows you to specify the new text that will replace the text specified in Find what configuration.

Match case: This is an optional configuration available on the activity card. This configuration allows you to specify if the search should be case-sensitive or not. If this option is checked, then the search will be case-sensitive.

Whole words only: This is an optional configuration available on the activity card. This configuration allows you to specify if StudioX should only replace whole words and not text that is part of larger word.

Number of replacements: This is an optional configuration available on the Properties panel. This configuration outputs the number of replacements that were made by the activity.

EXERCISE

Goal: Building on our previous exercise, use the Replace Text in Presentation activity to replace <REPORTDATE> with actual date on the Title slide. Figure 10-15 reflects the current state of presentation.

Source Code: Chapter_10-PresentationAutomationExercise

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

1. In StudioX, add the Replace Text in Presentation activity to the body of outer Use PowerPoint Presentation activity after the Add New Slide activity from the previous exercise.
2. The Presentation field will be pre-populated with the ReportTemplatePPT reference from the parent activity.
3. In the Find what field, click the Plus icon, select the Text option, and type <REPORTDATE>.
4. In the Replace with field, click the Plus icon, and hover the Notebook menu to select Date [Sheet]  Today [Cell] value. This will return the current date.
5. Leave the rest of the configurations as is.

Once you have completed the exercise, the final configuration of the **Replace Text in Presentation** activity should resemble Figure 10-17.

Note We unchecked the Save changes option, so before you run the automation, open the ReportTemplate.pptm; this will allow you to view all the changes that the automation is making.

Figure 10-18 shows the state of the title slide after this activity is run.



Figure 10-17. Final configuration of Replace Text in Presentation activity exercise

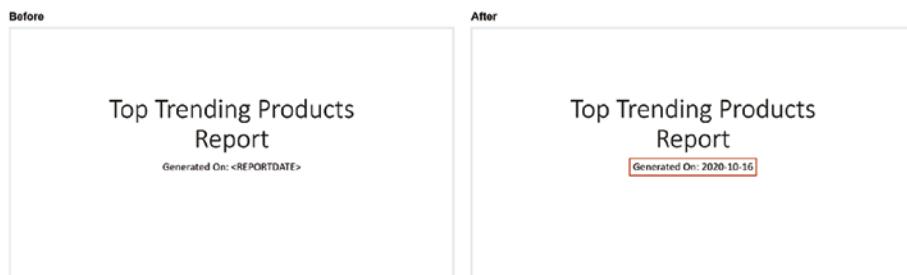


Figure 10-18. The before and after view of the Title slide in *ReportTemplate.pptm*

Add Text to Slide

The **Add Text to Slide** activity allows you to add text to the specified placeholder on a slide.

Configuration

This section provides instructions on how to configure an **Add Text to Slide** activity, shown in Figure 10-19.



Figure 10-19. Activity card for *Add Text to Slide*

Presentation: This is a required configuration available on the activity card. This configuration specifies the PowerPoint presentation where you want to add the text. This field is pre-populated with the PowerPoint presentation from the parent Use PowerPoint Presentation activity.

Slide number: This is a required configuration available on the activity card. This configuration specifies the slide number where you want to add the text.

Content placeholder: This is a required configuration available on the activity card. This configuration allows you to specify the name of the placeholder where you want the text to be added.

Tip To find the name of a placeholder, in PowerPoint, go to Home tab, and in the Editing group, click Select and chose Selection Pane, shown in Figure 10-20.

- Slide 3 title should be Top Trending Products List.
- Slide 4 title should be Trend Chart.
- Slide 5 title should be Source Data.

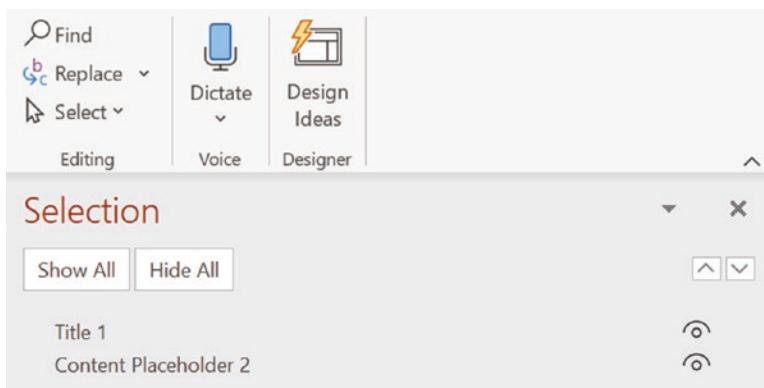


Figure 10-20. Selection Pane contains names of placeholders in PowerPoint

Text to add: This is a required configuration available on the activity card. This configuration allows you to specify the actual text that will be added to the specified placeholder.

EXERCISE

Goal: Building on our previous exercise, use the Add Text to Slide activity to add titles to the three new slides (slides 3, 4, and 5) that were created in the Add New Slide exercise.

Figure 10-15 shows the state of PowerPoint presentation before this exercise.

Source Code: Chapter_10-PresentationAutomationExercise

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

1. In StudioX, add the Add Text to Slide activity to the body of outer Use PowerPoint Presentation activity after the Replace Text in Presentation activity from the previous exercise.
2. The Presentation field will be pre-populated with the ReportTemplatePPT reference from the parent activity.
3. First, we are going to update the title of slide 3. In the Slide number field, click the Plus icon, select the Number option, and type 3.
4. In the Content placeholder field, click the Plus icon, select the Text option, and type Title 1. All the new slides that we added using the Add New Slide activity used the Title and Content layout. The title placeholder will be named Title 1.

5. Next, in the Text to add field, click the Plus icon, select the Text option, and type Top Trending Products List.
6. Repeat steps 1–5 for the other two slides, that is, slides 4 and 5. Update the Slide number and Text to add fields according to the information provided in the Goal section.

Once you have completed the exercise, the final configuration of the **Add Text to Slide** activity should resemble Figure 10-21.

Note We unchecked the Save changes option, so before you run the automation, open the ReportTemplate.pptm; this will allow you to view all the changes that the automation is making.

Figure 10-22 shows the state of the presentation after this activity is run.

CHAPTER 10 PRESENTATION AUTOMATION

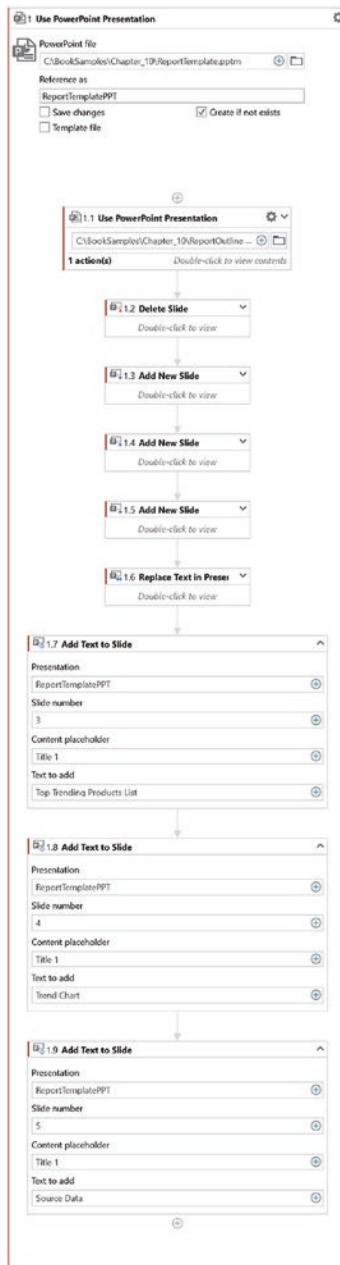


Figure 10-21. Final configuration of Add Text to Slide exercise

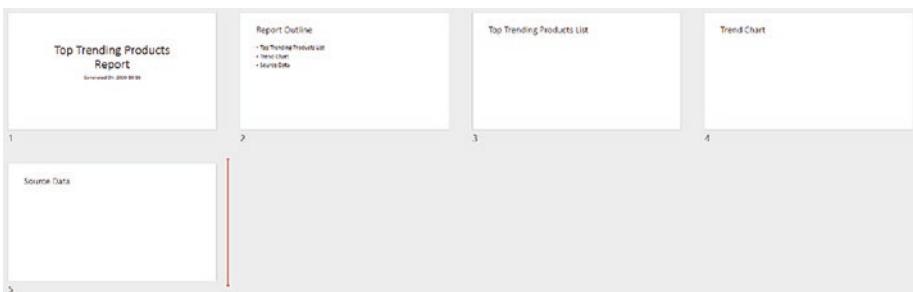


Figure 10-22. The state of the *ReportTemplate.pptm* after the Add Text to Slide exercise

Add Data Table to Slide

The **Add Data Table to Slide** activity allows you to add a data table to the specified placeholder on a slide.

Configuration

This section provides instructions on how to configure an **Add Data Table to Slide** activity, shown in Figure 10-23.



Figure 10-23. Activity card for Add Data Table to Slide

Presentation: This is a required configuration available on the activity card. This configuration specifies the PowerPoint presentation where you want to add the data table. This field is pre-populated with the PowerPoint presentation from the parent Use PowerPoint Presentation activity.

Slide number: This is a required configuration available on the activity card. This configuration specifies the slide number where you want to add the data table.

Content placeholder: This is a required configuration available on the activity card. This configuration allows you to specify the name of the placeholder where you want the data table to be added. See Add Text to Slide activity to learn how to find the placeholder name in PowerPoint.

Table to add: This is a required configuration available on the activity card. This configuration allows you to specify the actual data table that will be added to the specified placeholder.

EXERCISE

Goal: Building on our previous exercise, use the Add Data table to Slide activity to add the data table from C:\BookSamples\Chapter_10\TopTrendingProducts.xlsx file to slide 3 of the presentation. Figure 10-22 shows the state of the PowerPoint presentation before this exercise.

Source Code: Chapter_10-PresentationAutomationExercise

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

1. We first need access to the data table from Excel. So, in StudioX, add the Use Excel File activity to the body of the outer Use PowerPoint Presentation activity after the Add Text to Slide activity from the previous exercise.
2. In the Excel file field, click the Folder icon, and select C:\BookSamples\Chapter_10\TopTrendingProducts.xlsx.

3. In the Reference as field, leave the default value as Excel.
4. Uncheck the Save changes and Create if not exists options.
5. Add the Add Data Table to Slide activity to the body of the Use Excel File activity.
6. The Presentation field will be pre-populated with the ReportTemplatePPT reference from the parent activity.
7. We are going to add the data table to slide 3. In the Slide number field, click the Plus icon, select the Number option, and type 3.
8. In the Content placeholder field, click the Plus icon, select the Text option, and type Content Placeholder 2. All the new slides that we added using the Add New Slide activity used the Title and Content layout. The title placeholder will be named Content Placeholder 2.
9. Next, in the Table to add field, click the Plus icon, hover over Excel, and select the Top Trending Products [Sheet].

Once you have completed the exercise, the final configuration of the **Add Data Table to Slide** activity should resemble Figure 10-24.

Note We unchecked the Save changes option, so before you run the automation, open the ReportTemplate.pptm; this will allow you to view all the changes that the automation is making.

Figure 10-25 shows the state of title slide after this activity is run.

CHAPTER 10 PRESENTATION AUTOMATION

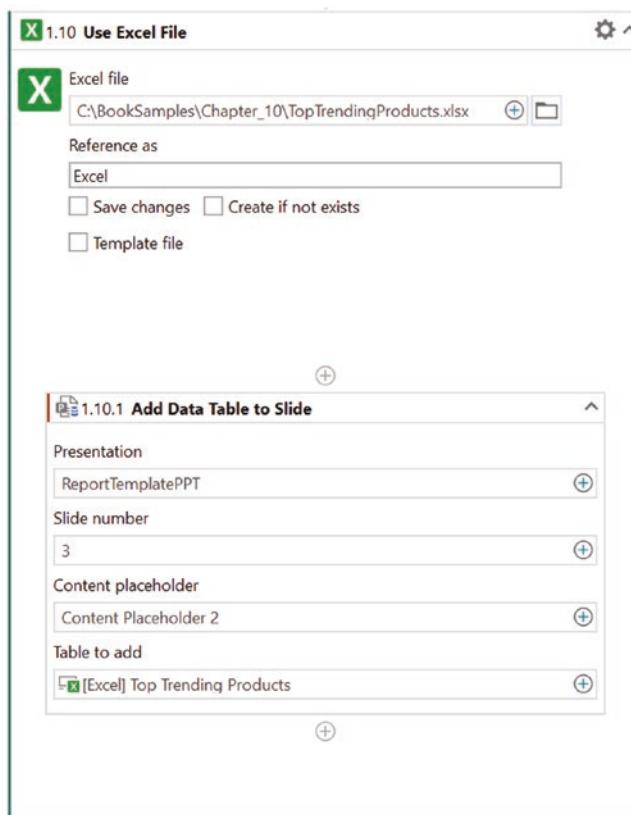


Figure 10-24. Final configuration of Add Data Table to Slide exercise

The image shows a 'Before' and 'After' comparison of a slide. The 'Before' slide is titled 'Top Trending Products List' and contains a placeholder text 'Click to add text' with a small icon set below it. The 'After' slide is also titled 'Top Trending Products List' and displays a data table with 10 rows of product information:

Product Code	Product Name	Unit Price (\$)	Available Quantity	Free Shipping
PC1001	Office Chair	199.99	20	Yes
PC1002	Standing Desk	525.99	10	Yes
PC1003	Computer Desk	160.99	15	Yes
PC1004	File Cabinet	99.99	10	No
PC1005	Bookcase	109.99	10	Yes
PC1006	Coffee Maker	185.59	50	Yes
PC1007	Coffee	20.29	100	No
PC1008	Desktop Computer	269.99	20	Yes
PC1009	Laptop Computer	1081.79	20	Yes
PC1010	Computer Monitor	129.99	40	Yes

Figure 10-25. The before and after view of the Data Table slide in ReportTemplate.pptm

Add Image/Video to Slide

The **Add Image/Video to Slide** activity allows you to add an image or a video to the specified placeholder on a slide.

Configuration

This section provides instructions on how to configure an **Add Image/Video to Slide** activity, shown in Figure 10-26.



Figure 10-26. Activity card for Add Image/Video to Slide

Presentation: This is a required configuration available on the activity card. This configuration specifies the PowerPoint presentation where you want to add the image or video. This field is pre-populated with the PowerPoint presentation from the parent Use PowerPoint Presentation activity.

Slide number: This is a required configuration available on the activity card. This configuration specifies the slide number where you want to add the image or video.

Content placeholder: This is a required configuration available on the activity card. This configuration allows you to specify the name of the placeholder where you want the image or video to be added. See Add Text to Slide activity to learn how to find the placeholder name in PowerPoint.

Image/Video file: This is a required configuration available on the activity card. This configuration allows you to specify the actual image or video file that will be added to the specified placeholder.

EXERCISE

Goal: Building on our previous exercise, use the Add Image/Video to Slide activity to add the Trend Chart image from C:\BookSamples\Chapter_10\TrendChart.png file to slide 4 of the presentation. Figure 10-22 shows the state of PowerPoint presentation before this exercise.

Source Code: Chapter_10-PresentationAutomationExercise

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

1. In StudioX, add the Add Image/Video to Slide activity to the body of outer Use PowerPoint Presentation activity after the Use Excel File activity from the previous exercise.
2. The Presentation field will be pre-populated with the ReportTemplatePPT reference from the parent activity.
3. We are going to add the image to slide 4. In the Slide number field, click the Plus icon, select the Number option, and type 4.
4. In the Content placeholder field, click the Plus icon, select the Text option, and type Content Placeholder 2. All the new slides that we added using the Add New Slide activity used the Title and Content layout. The title placeholder will be named Content Placeholder 2.
5. Next, in the Image/Video file field, click the Folder icon, and select C:\BookSamples\Chapter_10\TrendChart.png file.

Once you have completed the exercise, the final configuration of the **Add Image/Video to Slide** activity should resemble Figure 10-27.

Note We unchecked the Save changes option, so before you run the automation, open the ReportTemplate.pptm; this will allow you to view all the changes that the automation is making.

Figure 10-28 shows the state of the title slide after this activity is run.

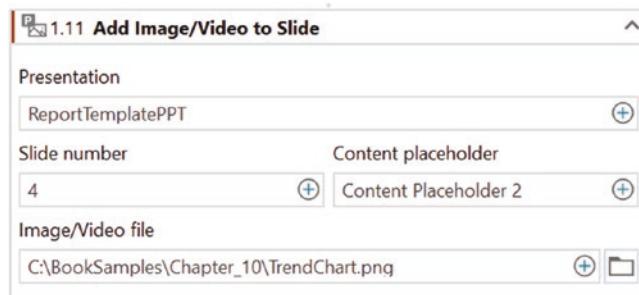


Figure 10-27. Final configuration of Add Image/Video to Slide exercise



Figure 10-28. The before and after view of the Trend Chart slide

Add File to Slide

The **Add File to Slide** activity allows you to add a file as an attachment to a slide in presentation.

Configuration

This section provides instructions on how to configure an **Add File to Slide** activity, shown in Figure 10-29.



Figure 10-29. Activity card for Add File to Slide

Presentation: This is a required configuration available on the activity card. This configuration specifies the PowerPoint presentation where you want to add the file. This field is pre-populated with the PowerPoint presentation from the parent Use PowerPoint Presentation activity.

Slide number: This is a required configuration available on the activity card. This configuration specifies the slide number where you want to add the file.

Content placeholder: This is an optional configuration available on the activity card. This configuration allows you to specify the name of the placeholder where you want the file to be added. See Add Text to Slide activity to learn how to find the placeholder name in PowerPoint.

File to add: This is a required configuration available on the activity card. This configuration allows you to specify the actual file that will be added to the specified placeholder.

Icon label: This is an optional configuration available on the activity card. This configuration allows you to specify the label of the icon that will be displayed on the slide.

EXERCISE

Goal: Building on our previous exercise, use the Add File to Slide activity to add the source data spreadsheet C:\BookSamples\Chapter_10\TopTrendingProducts.xlsx to slide 5 of the presentation. Figure 10-22 shows the state of PowerPoint presentation before this exercise.

Source Code: Chapter_10-PresentationAutomationExercise

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

1. In StudioX, add the Add File to Slide activity to the body of the outer Use PowerPoint Presentation activity after the Add Image/Video to Slide activity from the previous exercise.
2. The Presentation field will be pre-populated with the ReportTemplatePPT reference from the parent activity.
3. We are going to add the file to slide 5. In the Slide number field, click the Plus icon, select the Number option, and type 5.
4. In the Content placeholder field, click the Plus icon, select the Text option, and type Content Placeholder 2. All the new slides that we added using the Add New Slide activity used the Title and Content layout. The title placeholder will be named Content Placeholder 2.

5. Next, in the File to add field, click the Folder icon, and select C:\BookSamples\Chapter_10\TopTrendingProducts.xlsx file.
6. In the Icon label field, click the Plus icon, select the Text option, and type Source Data.

Once you have completed the exercise, the final configuration of the **Add File to Slide** activity should resemble Figure 10-30.

Note We unchecked the Save changes option, so before you run the automation, open the ReportTemplate.pptm; this will allow you to view all the changes that the automation is making.

Figure 10-31 shows the state of title slide after this activity is run.

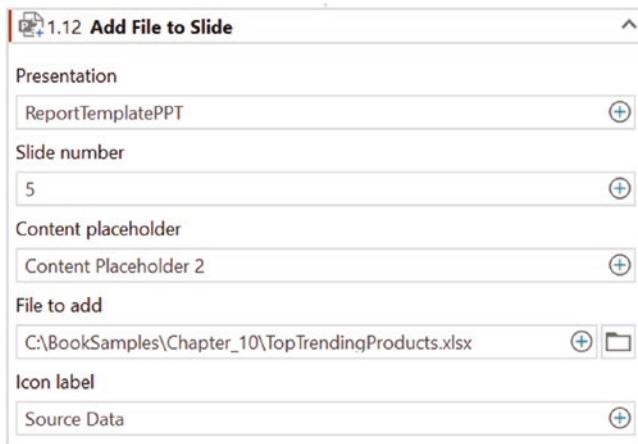


Figure 10-30. Final configuration of Add File to Slide exercise



Figure 10-31. The before and after view of the Source Data File Slide in ReportTemplate.pptm

Run Presentation Macro

The **Run Presentation Macro** activity allows you to run the specified macro in PowerPoint presentation.

Configuration

This section provides instructions on how to configure a **Run Presentation Macro** activity, shown in Figure 10-32.

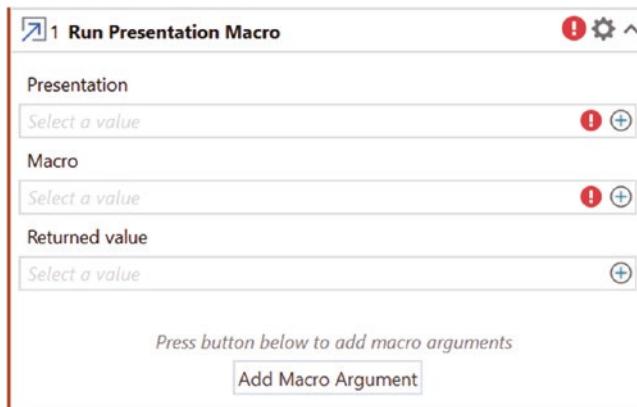


Figure 10-32. Activity card for Run Presentation Macro

Presentation: This is a required configuration available on the activity card. This field identifies the PowerPoint presentation that contains the macro you want to run. This field is pre-populated with the PowerPoint presentation from the parent Use PowerPoint Presentation activity.

Macro: This is a required configuration available on the activity card. This configuration allows you to select or type the name of the macro that you want to run.

Returned value: This is an optional configuration available on the activity card. This configuration allows you to save any value returned by the macro.

Add Macro Argument: This is an optional configuration available on the activity card. This configuration allows you to pass one or more arguments (data) to the macro.

EXERCISE

Goal: Building on our previous exercise, use Run Presentation Macro activity to run the ResizeImageToCoverFullSlide macro. This macro will resize the Trend Chart image on slide 4 so that it occupies the full slide. Figure 10-28 shows the current state of the slide.

Source Code: Chapter_10-PresentationAutomationExercise

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

1. In StudioX, add the Run Presentation Macro activity to the body of outer Use PowerPoint Presentation activity after the Add File to Slide activity from the previous exercise.
2. The Presentation field will be pre-populated with the ReportTemplatePPT reference from the parent activity.
3. In the Macro field, click the Plus icon, select Text option, and type ResizeImage.

Once you have completed the exercise, the final configuration of the **Run Presentation Macro** activity should resemble Figure 10-33.

Note We unchecked the Save changes option, so before you run the automation, open the ReportTemplate.pptm; this will allow you to view all the changes that the automation is making.

Figure 10-34 shows the state of title slide after this activity is run.



Figure 10-33. Final configuration for Run Presentation Macro exercise

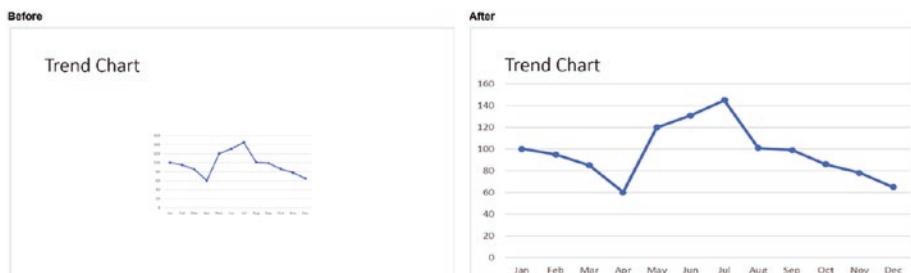


Figure 10-34. The before and after view of the Trend Chart slide in ReportTemplate.pptm

Save PowerPoint File As

The **Save PowerPoint File As** activity allows you to save the referenced PowerPoint file as a different PowerPoint file type including .pptx, .pptm, and .ppt.

Configuration

This section provides instructions on how to configure a **Save PowerPoint File As** activity, shown in Figure 10-35.

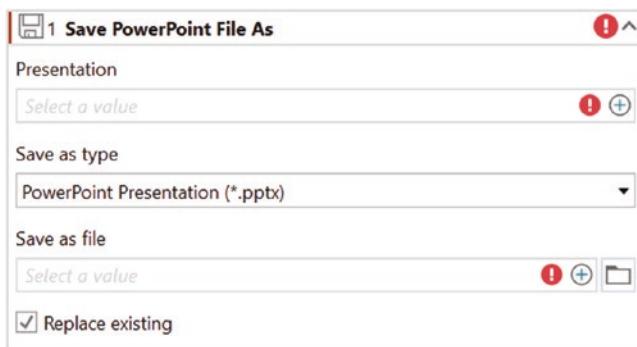


Figure 10-35. Activity card for Save PowerPoint File As

Presentation: This is a required configuration available on the activity card. This field identifies the PowerPoint presentation that needs to be saved with a different PowerPoint file type. This field is pre-populated with the PowerPoint presentation from the parent Use PowerPoint Presentation activity.

Note The Save PowerPoint File As activity only saves a PowerPoint file to .pptx, .ppt, and .pptm types.

Save as type: This is a required configuration available on the activity card. This field identifies the new PowerPoint format that the presentation needs to be saved as through the activity. The following are the dropdown options available:

- PowerPoint Presentation (*.pptx)
- PowerPoint Macro Enabled Presentation (*.pptm)
- PowerPoint 97-2003 Presentation (*.ppt)

Save as file: This is a required configuration available on the activity card. This field provides the name of the PowerPoint file that will be saved as a new PowerPoint format.

Replace existing: This is an optional configuration available on the activity card. If checked, this will replace the existing file of the same name in the target location. By default, this field is checked.

EXERCISE

Goal: Building on our previous exercise, use the Save PowerPoint File As activity to save the ReportTemplate.pptm file as Report_YYYYMMDD.pptx file. The YYYYMMDD will be replaced with actual date the report was generated.

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

1. In StudioX, add the Save PowerPoint File As activity to the body of outer Use PowerPoint Presentation activity after the Run Presentation Macro activity from the previous exercise.
2. The Presentation field will be pre-populated with the ReportTemplatePPT reference from the parent activity.
3. Next, click the Save as type dropdown to select PowerPoint Presentation (*.pptx) option.

4. Next, click the Plus icon in the Save as file field, select the Text option, and type in the file path C:\BookSamples\Chapter_10\Report_.
5. Next, from within the Text Builder, click the Plus icon, and hover over Notebook to select Date [Sheet]  YYYYMMDD [Cell].
6. Add .pptx at the end and click Save.
7. Leave the Replace existing option checked.

Once you have completed the exercise, the final configuration of the **Save PowerPoint File As** activity should resemble Figure 10-36.

Once you run this activity, a new file will be generated and saved in the Destination folder.

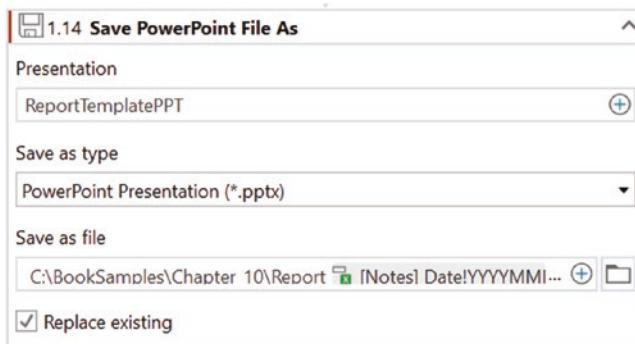


Figure 10-36. Final configuration for Save PowerPoint File As exercise

Save Presentation as PDF

The **Save Presentation as PDF** activity allows you to save the referenced PowerPoint presentation as a PDF file.

Configuration

This section provides instructions on how to configure a **Save Presentation as PDF** activity, shown in Figure 10-37.

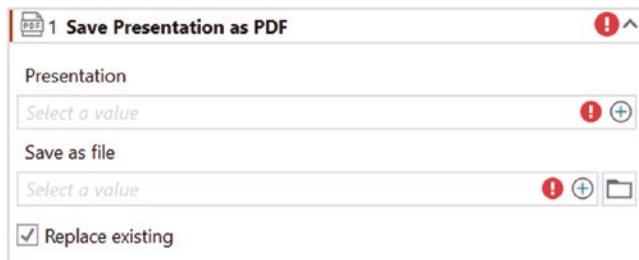


Figure 10-37. Activity card for Save Presentation as PDF

Presentation: This is a required configuration available on the activity card. This field identifies the PowerPoint presentation that needs to be saved as a PDF. This field is pre-populated with the PowerPoint from the parent Use PowerPoint Presentation activity.

Save as file: This is a required configuration available on the activity card. This field provides the file path to save the new PDF file created from the activity.

Replace existing: This is an optional configuration available on the activity card. If checked, this will replace the existing file of the same name in the target location. By default, this field is checked.

EXERCISE

Goal: Building on our previous exercise, use the Save Presentation as PDF activity to save the ReportTemplate.pptm file as Report_YYYYMMDD.pdf file. The YYYYMMDD will be replaced with actual date the report was generated.

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

1. In StudioX, add the Save Presentation as PDF activity to the body of outer Use PowerPoint Presentation activity after the Save PowerPoint File As activity from the previous exercise.
2. The Presentation field will be pre-populated with the ReportTemplatePPT reference from the parent activity.
3. Next, click the Plus icon in the Save as file field, select the Text option, and type in the file path C:\BookSamples\Chapter_10\Report_.
4. Next, from within the Text Builder, click the Plus icon, and hover over Notebook to select Date [Sheet] — YYYYMMDD [Cell].
5. Add .pdf at the end and click Save.
6. Leave the Replace existing option checked.

Once you have completed the exercise, the final configuration of the **Save Presentation as PDF** activity should resemble Figure 10-38.

Once you run this activity, a new file will be generated and saved in the Destination folder.

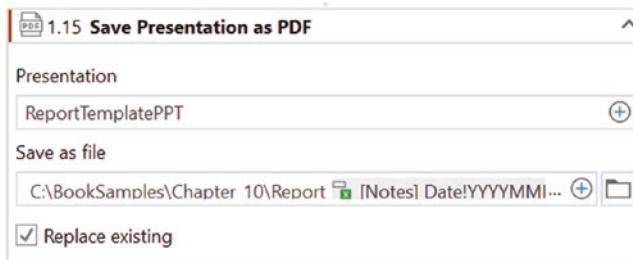


Figure 10-38. Final configuration for Save Presentation as PDF exercise
