



Downloading Excel files

Pattern #5

In many applications users need to export information from it so it can be manipulated with other tools. This is possible in OutSystems by using the Download tool that allows the user to download files to their local filesystem. A very common format for this type of exported data is as an Excel spreadsheet, and in OutSystems you have the Record List to Excel tool that helps you convert a list of structures or entities into an Excel file with a single spreadsheet.

The first part of this exercise requires us to download Movie information from an existing application. In the second part of the exercise, we will export part of the Movie information in a specific column format.

KEYWORDS: download, file, excel, scaffolding, structure

Enhance the MyMovies application

The MyMovies application allows users to build a very simple catalog of movies. Our goal is to enhance it so we can extract that information as meaningful Excel files. In the first part of the exercise, we will simply download an Excel file with movie info for all movies that have been released this century and ordered by their gross takings: the first column should be the Movie's **Status** (whether it's on DVD - "**Released**" - or not - "**Unreleased**"), followed by its **Name** and finally the **Plot Summary**. In the second part we will change the Excel format to have on the first column the **Year**, followed by the movie's **Title** and finally showing the **Gross Takings**.


PART I - Downloading an Excel file

1. Clone the **MyMovies** module and rename the clone **MyMovies_<your initials>**
2. First create a Server Action that will get the information from the application and convert it to an Excel file
 - a) Add a new **GetMoviesExcel** server action, with a single output parameter of *BinaryData* data type
 - b) Get all the Movies data using an aggregate. We only need Movies released after the year 2000

NOTE: We can add a calculated attribute named **Status** with a value of either "**Released**" or "**Unreleased**" depending on its **IsAvailableOnDVD** attribute

- c) Use the *Record List to Excel* tool to convert the result of the aggregate into an Excel file

NOTE: You can select the columns you want to be on the Excel file by ticking them on the *Record List to Excel* tool (after you defined the Record List). You cannot change the order they are added to the Excel though

 **RecordListToExcel1**
Record List To Excel

Name	RecordListToExcel1
Description	...
Record List	GetMovies.List ▼
Attribute Selection	
Status	<input checked="" type="checkbox"/>
Movie.Id	<input type="checkbox"/>
Movie.Title	<input checked="" type="checkbox"/>
Movie.Year	<input type="checkbox"/>
Movie.PlotSu...	<input checked="" type="checkbox"/>
Movie.GrossT...	<input type="checkbox"/>
Movie.IsAvail...	<input type="checkbox"/>
(All Attributes)	<input type="checkbox"/>

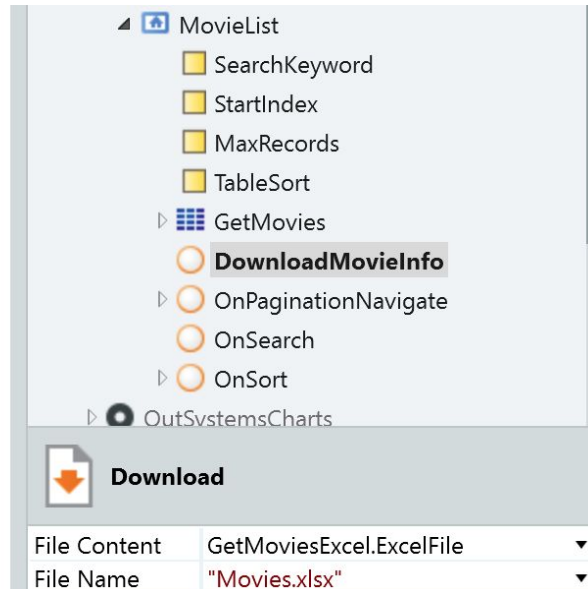
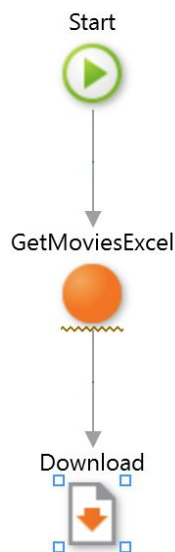
- d) Assign the result of the Record List to Excel tool to the output parameter
3. On the MovieList screen, add a link to **Download Movie Info**
 - a) Add a link before the movies *Table* that calls a new Client Action

Add Movie +

[Download Movie Info](#)

	Gross Takings Amount	Is Available On DVD
irst Order ong with the	\$815,843,529.00	✓
irst Order ong with the	\$815,843,529.00	✓

- b) In the newly created client action, call the GetMoviesExcel server action and replace the *End* tool with the *Download* tool. You will need to provide the Download tool with two values: the *File Content* to be downloaded (the output of the **GetMoviesExcel** server action) and the *File Name* that the browser will use when saving your file on the user's device



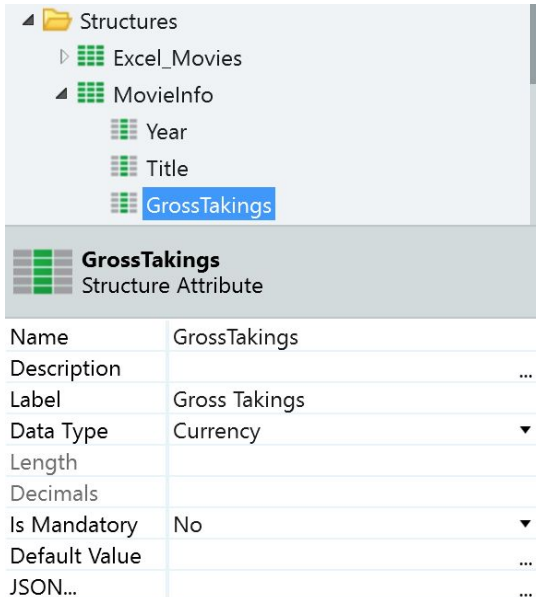
4. Publish your application and download the data, your Excel file contents should look similar to the ones displayed below

	A	B	C
1	Status	Title	Plot Summary
2	Unreleased	Avatar 2	(unknown)
3	Unreleased	Black Panther 2	(unknown)
4	Released	Capote	In 1959, Truman Capote learns of the murder of a Kansas family and decides to write a book about the case. While researching for his novel In Cold Blood, Capote forms a relationship with one of the killers, Perry Smith, who is on death row.
5	Released	Along Came Polly	A buttoned up newlywed finds his too organized life falling into chaos when he falls in love with an old classmate.
6	Released	Dunkirk	Allied soldiers from Belgium, the British Empire and France are surrounded by the German Army, and evacuated during a fierce battle in World War II.
7	Released	Star Wars: The Force Awakens	Three decades after the defeat of the Galactic Empire, a new threat arises. The First Order attempts to rule the galaxy and only a ragtag group of heroes can stop them, along with the help of the Resistance.
8	Released	Star Wars: The Last Jedi	Rey develops her newly discovered abilities with the guidance of Luke Skywalker, who is unsettled by the strength of her powers. Meanwhile, the Resistance prepares for battle with the First Order.
9	Released	Black Panther	T'Challa, heir to the hidden but advanced kingdom of Wakanda, must step forward to lead his people into a new future and must confront a challenger from his country's past.
10	Released	Avengers: Infinity War	The Avengers and their allies must be willing to sacrifice all in an attempt to defeat the powerful Thanos before his blitz of devastation and ruin puts an end to the universe.

END OF PART I

PART II - Downloading an Excel file with a custom structure

1. Add a new **MovieInfo** Structure, with attributes **Year** (of type *Integer*), **Title** (of type *Text*) and **GrossTakings** (of type *Currency* and with Label *Gross Takings*) in this order

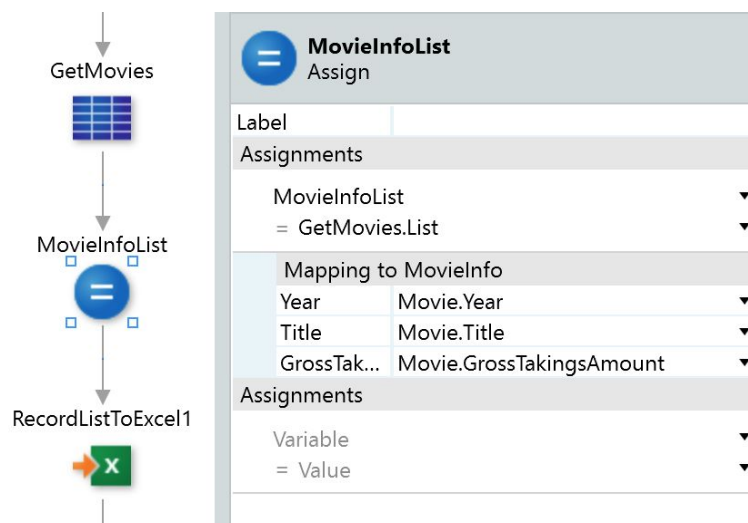


GrossTakings Structure Attribute	
Name	GrossTakings
Description	...
Label	Gross Takings
Data Type	Currency ▼
Length	
Decimals	
Is Mandatory	No ▼
Default Value	...
JSON...	...

NOTE: The order of the attributes will be used to determine the order of the Excel spreadsheet's columns, and the Label attribute will be used as the name of the Excel column corresponding to the attribute

2. Modify the GetMoviesExcel server action to use the structure for the Excel file definition
 - a) Create a local variable of type **List of MovieInfo**
 - b) Assign the output of the aggregate to this local variable

NOTE: You will be prompted for a mapping between *Movie* and *MovieInfo*, with prefilled values for the attribute with the same name



- c) Change the *Record List to Excel* tool's *Record List* to be the local variable you previously assigned, and tick **(All Attributes)**

RecordListToExcel1 Record List To Excel	
Name	RecordListToExcel1
Description	...
Record List	MovieInfoList ▼
Attribute Selection	
Year	<input checked="" type="checkbox"/>
Title	<input checked="" type="checkbox"/>
GrossTakings	<input checked="" type="checkbox"/>
(All Attributes)	<input checked="" type="checkbox"/>

3. Publish your application and download the data, your Excel file contents should look similar to the ones displayed below

	A	B	C
1	Year	Title	Gross Takings
2	2020	Avatar 2	0
3	2022	Black Panther 2	0
4	2005	Capote	28747570
5	2004	Along Came Polly	87856565
6	2017	Dunkirk	527300000
7	2015	Star Wars: The Force Awakens	815843529
8	2017	Star Wars: The Last Jedi	1333000000
9	2018	Black Panther	1347000000
10	2018	Avengers: Infinity War	2047000000

END OF PART II