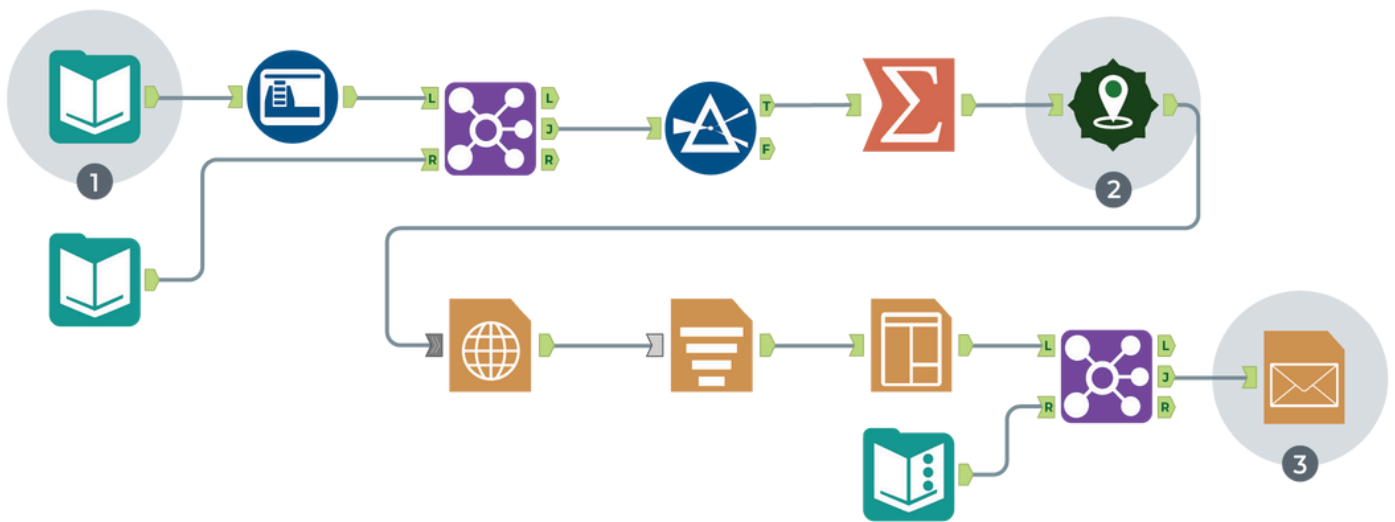




# ALTERYX PROJECT REPORT





## Alteryx Weekly Challenge #298

### Problem Statement

For this challenge, you will be hosting the perfect Christmas night! You've invited friends over to eat cookies, listen to music, and watch a movie!

This is a two-part challenge: First you must choose each item (type of cookie, music and movie) based on a specific criterion that are in the container boxes below (you have opinionated friends), then you must use your 3 selections to find the key to the treasure box. The treasure box holds a special gift from your Weekly Challenge team! (Hint: Label your final selection column as "Answer")

### TASK 1

Choose the cookie recipe that makes the most cookies!

1. You have 1000 grams of butter and 1000 grams of sugar.
2. The cookies recipes require the ingredients as listed.
3. You are not limited by any of the other ingredients.

### TASK 2

Choose a Christmas playlist for your guests while you eat cookies!

1. Assume each song is 3 minutes and that your total music playtime will be 45 minutes - this determines how many songs you have on the list!
  2. Every song must be a -9 or lower in loudness (ex. -15 would be a very quiet song)
  3. Eric wants all the minor songs and Matthew wants songs in F major.
  4. Thalita loves Dean Martin!
  5. Put the songs in order of loudness, so the music builds as a transition to the movie.
- The title of the last song is your "answer"!

### TASK 3

Movie Time!

1. You only want a movie that was released in the theatre
2. Nicole doesn't want to watch an animated movie.
3. Ryan is feeling nostalgic and wants to watch something from the 80's or 90's.
4. It must be the top-rated movie of the year it debuted.
5. The movie with the longest run time in the Comedy genre is your "answer"!

### TASK 4

After all that hard work to create the Best Christmas Evening Ever, use your three answers to find the key to the treasure box!

1. Use the provided lookup table to "find and replace" your answers to produce three sets of scrambled letters and numbers (hint: label column as "Answer").
2. Concatenate the key and add to the provided formula tool.
3. Once you run the key through the formula tool, you may open the treasure box and put the link in the tool configuration!

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## Task 1: Choosing the most efficient cookie recipe

### Workflow Steps:

1. **Data Quality Check:** Started by ensuring data integrity using the Select tool to verify correct data types.

<input checked="" type="checkbox"/>	Field	Type	Size
<input checked="" type="checkbox"/>	recipe_name	V_String	30
<input checked="" type="checkbox"/>	butter	Int16	2
<input checked="" type="checkbox"/>	sugar	Int16	2
<input checked="" type="checkbox"/>	flour	Byte	1
<input checked="" type="checkbox"/>	sprinkles	Byte	1
<input checked="" type="checkbox"/>	chocolate	Byte	1
<input checked="" type="checkbox"/>	eggs	Byte	1
<input checked="" type="checkbox"/>	quantity	Byte	1

2. **Calculations with Formulas:** Utilized the Formula tool to calculate the number of rounds possible with available butter and sugar.

	Output Column	Data
1	rounds_butter	4
	$1000/[butter]$	
2	rounds_sugar	4
	$1000/[sugar]$	

3. **Optimizing Cookie Yields:** Employed the following formula in the **Formula Tool** to determine the exact number of cookies each recipe could produce from available ingredients:

	Output Column	Data Preview
1	num_of_cookies	64
	$IF [rounds\_butter] < [rounds\_sugar] THEN [rounds\_butter] * [quantity] ELSE [rounds\_sugar] * [quantity] ENDIF$	
	Data type: V_WString	Size: 1073741823

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4. **Sorting and Selection:** Sorted the results in descending order of cookies using the Sort tool. Extracted the top row with the highest cookie yield using the Sample tool.

## Output:

Record	recipe_name	butter	sugar	flour	sprinkles	chocolate	eggs
1	Sugar Twinkle	225	250	150	50	0	2
2	Holiday Macaroon	175	200	225	0	0	2
3	Christmas Chocolate Shortbread	250	225	150	25	25	0
4	Unique Gingerbread Snowflakes	275	100	200	0	0	3
5	Chocolate Sprinkle	250	300	150	65	10	3

quantity	rounds_butter	rounds_sugar	num_of_cookies
16	4	4	64
10	6	5	50
12	4	4	48
12	4	10	48
14	4	3	42

...

&

Record	recipe_name	butter	sugar	flour	sprinkles	chocolate
1	Sugar Twinkle	225	250	150	50	0

eggs	quantity	rounds_butter	rounds_sugar	num_of_cookies
2	16	4	4	64

...

5. **Final Selection:** Filtered unnecessary columns and renamed the required field as "Answer" using the Select tool.

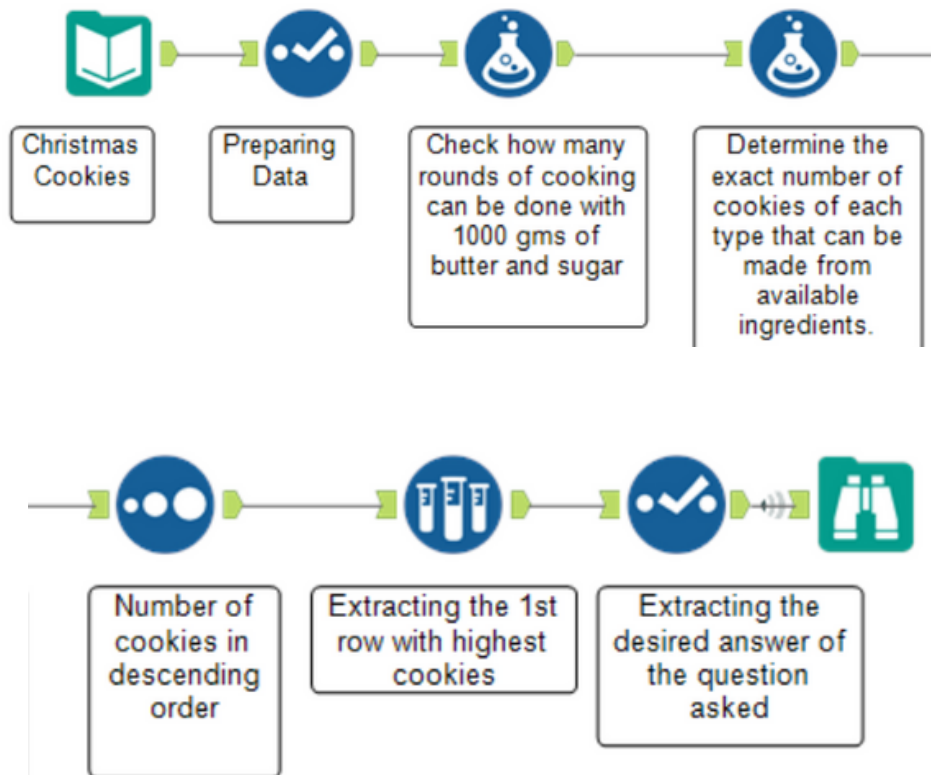
## Results:

After meticulous calculations and optimization, the winning recipe for the most cookies was "Sugar Twinkle" with an impressive yield of 64 cookies!

Record	answer
1	Sugar Twinkle

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## Task Workflow 1



**Task 2: To find the loudest music which fills all the criterions.**

### Workflow Steps:

#### 1. Data Quality Check with Select Tool:

- Verified the dataset's integrity using the **Select Tool** to ensure correct data types.

	<input checked="" type="checkbox"/>	Field	Type	Size
▶	<input checked="" type="checkbox"/>	key	String	2
	<input checked="" type="checkbox"/>	loudness	Double	8
	<input checked="" type="checkbox"/>	mode	String	5
	<input checked="" type="checkbox"/>	key_mode	String	8
	<input checked="" type="checkbox"/>	track_name	V_String	88
	<input checked="" type="checkbox"/>	artist_name	V_String	27



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## 2. Filtering Relevant Records:

- Used the **Filter Tool** to narrow down the dataset with the following criteria.



- This refined the dataset to 15 records.

## 3. Sorting Records:

- Employed the **Sort Tool** to arrange records by loudness in increasing order.

Record	key	loudness	mode	key_mode	track_name	artist_name
1	A	-19.697	minor	A minor	Christmas Time Is Here - Vocal	Vince Guaraldi Trio
2	F	-15.16	major	F major	The Little Drummer Boy	Johnny Cash
3	F	-14.408	major	F major	Christmas in Our Hearts	Jose Mari Chan
4	B	-13.442	minor	B minor	Christmas In Hollis	RunD.D.M.C.
5	D	-12.918	minor	D minor	The Christmas Waltz	She & Him
6	G	-12.179	minor	G minor	Santa Claus Is Comin' to Town	Frank Sinatra
7	G#	-11.865	major	G# major	Silver Bells	Dean Martin
8	F	-11.444	minor	F minor	I'll Be Home for Christmas	Doris Day
9	G	-10.956	minor	G minor	This Christmas	Chris Brown
10	B	-10.476	major	B major	A Marshmallow World	Dean Martin
11	A	-10.193	minor	A minor	Happy Holiday / The Holiday Season	Andy Williams
12	F	-10.16	major	F major	Frosty the Snowman	Fiona Apple
13	F	-9.301	major	F major	Real Love	Tom Odell
14	F	-9.155	minor	F minor	Sleigh Ride	Andy Williams
15	F#	-9.049	minor	F# minor	Mistletoe	Justin Bieber

## 4. Selecting the Loudest Track:

- Utilized the **Select Records Tool** to pick the 15th record, which happened to be:

Record	key	loudness	mode	key_mode	track_name	artist_name
1	F#	-9.049	minor	F# minor	Mistletoe	Justin Bieber

This became the captivating "Answer" for Task 2.

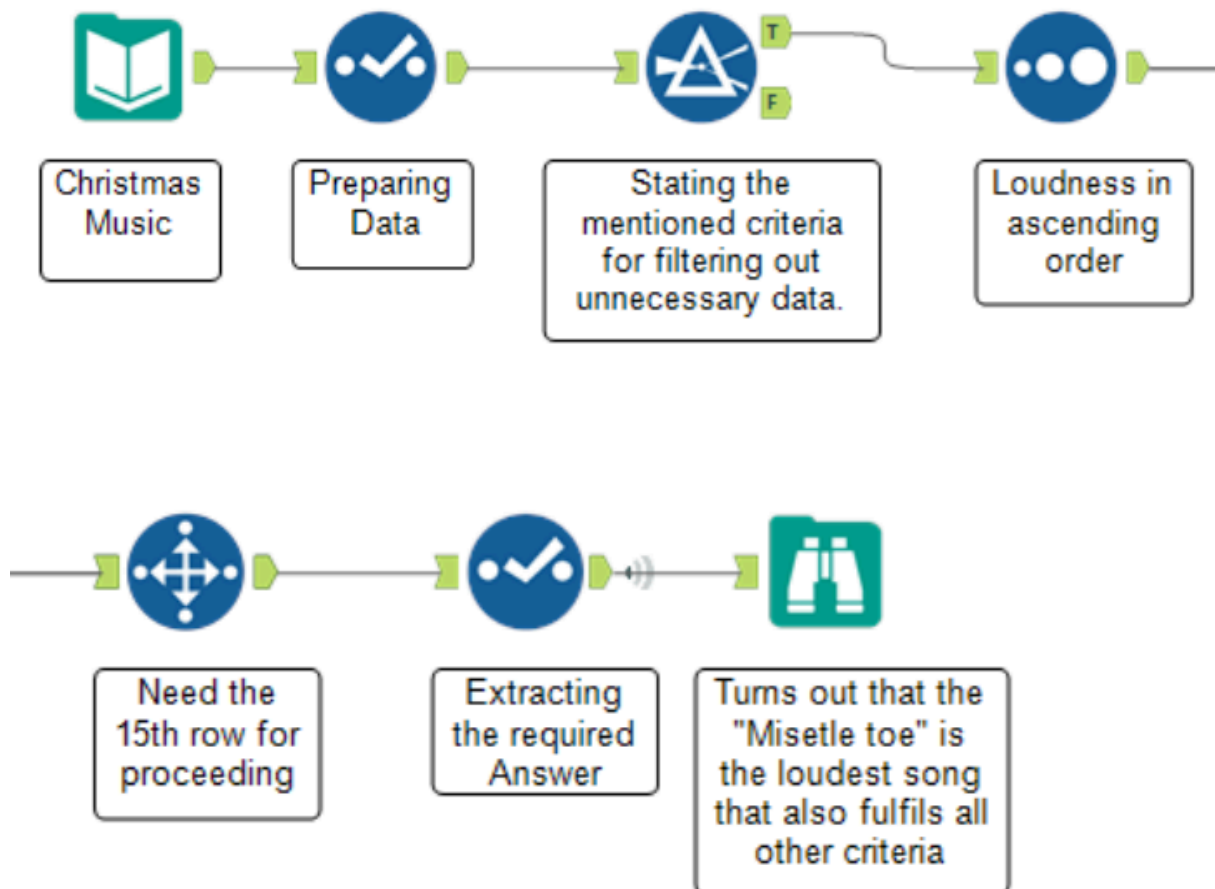
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## Results:

With careful selection and analysis, the playlist gained its climax with Justin Bieber's "Mistletoe" as the loudest, setting the perfect festive mood!

Record	answer	
1	Mistletoe	

## Task Workflow 2



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## Task 3: Choosing the longest comedy movie fitting all criteria

### Workflow Steps:

#### 1. Data Cleaning:

- Identified and corrected a data entry issue in the "Genre" field using the Formula tool.
- Used the formula:



#### 2. Filtering Data:

- Applied the Filter Data tool to exclude records that didn't meet the specified criteria.
- Filter criteria:



#### 3. Sorting Data:

- Used the Sort tool to arrange the data.
- Sorted the "Year" field in ascending order and the "Rating" field in descending order.

#### 4. Sampling and Grouping:

- Used the Sample tool to group the data by the "Year" field.
- Extracted the highest-rated film for each year using the Sample tool.

#### 5. Final Selection:

- Used the Sort tool again to sort the "Genre" field in ascending order and the "Run time" field in descending order.



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Record	Title	Year	Rating	IMBD Rating	Release Type	Genre	Run time
1	Die Hard	1988	R	8.2	Theater Release	Action	132
2	National Lampoon's Christmas Vacation	1989	PG-13	7.6	Theater Release	Comedy	97
3	A Christmas Story	1983	PG	7.9	Theater Release	Comedy	93
4	Home Alone	1990	PG	7.6	Theater Release	Family	103
5	The Santa Clause	1994	PG	6.5	Theater Release	Family	97
6	All I want for Christmas	1991	G	6	Theater Release	Family	92
7	Jingle All the Way	1996	PG	5.6	Theater Release	Family	89
8	I'll Be Home for Christmas	1998	PG	5.5	Theater Release	Family	86
9	The Muppet Christmas Carol	1992	G	7.7	Theater Release	Family	85
10	Gremlins	1984	PG	7.3	Theater Release	Horror	106

- Used the **Select Record tool** to isolate and Select tool to rename the final answer.

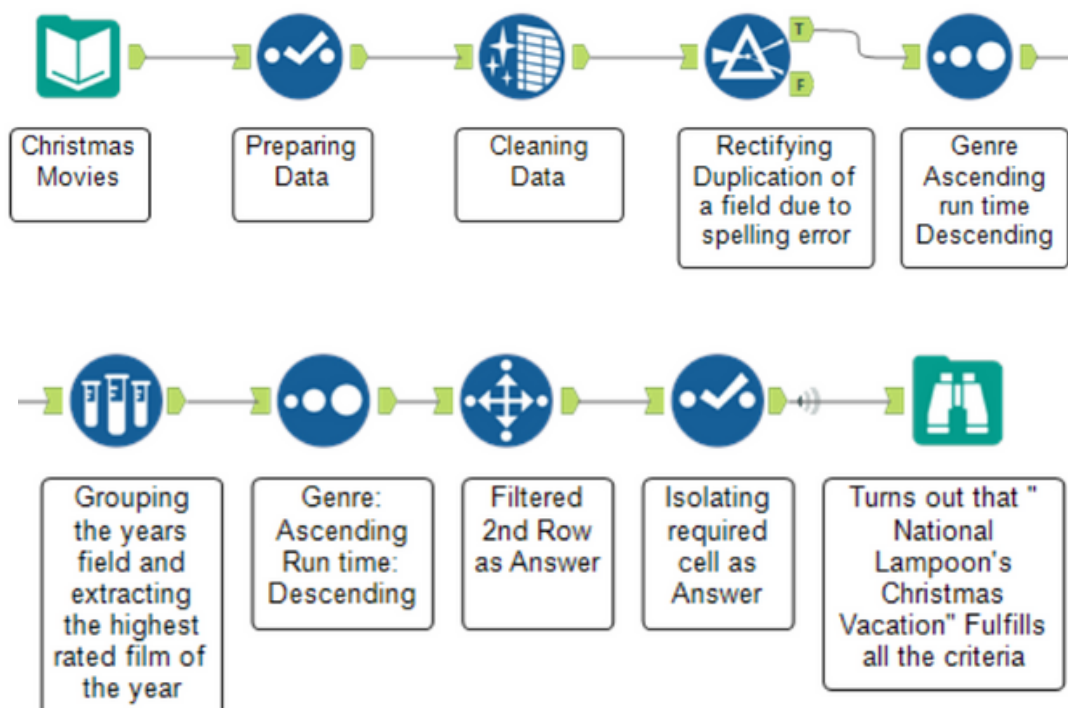
Record	Title	Year	Rating	IMBD Rating	Release Type	Genre	Run time
1	National Lampoon's Christmas Vacation	1989	PG-13	7.6	Theater Release	Comedy	97

## Final Result:

The highest-rated Christmas film released in theatres between 1980 and 1999, in comedy genre, with longest runtime is "National Lampoon's Christmas Vacation.

Record	answer
1	National Lampoon's Christmas Vacation

## Task Workflow 3



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## Revisiting All the Tasks Before Proceeding:

Till now we have done 3 tasks, and the answers of all are as follows:

Task 1:

Record	answer
1	Sugar Twinkle

Task 2:

Record	answer
1	Mistletoe

Task 3:

Record	answer
1	National Lampoon's Christmas Vacation

## **Task 4: Generating a Link**

### Workflow Steps:

1. **Union Tool:** Used the Union Tool to stack the answers from Tasks 1, 2, and 3 into one column

**Output:**

Record	answer
1	Sugar Twinkle
2	Mistletoe
3	National Lampoon's Christmas Vacation

2. **Lookup Table:**

As mentioned in the problem statement a lookup table was given from which we had to replace the answers with the mentioned code.

Record	answer	code
1	Sugar Twinkle	MGrW
2	Mistletoe	50GM
3	National Lampoon's Christmas Vacation	Evk
4	Holiday Macaroon	xpQ
5	Sleigh Ride	L2N0
6	A Christmas Story	H2vs

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## 3. Find and Replace Tool:

Matched the answers with the lookup table and replaced them with corresponding codes.

**Output:**

Record	answer
1	MGrW
2	50GM
3	Evk

## 4. Summary Tool: Concatenated the three rows into one.

**Output:**

Record	Concat_answer
1	MGrW,50GM,Evk

## 5. Formula Tool: Constructed the final link using the generated Concat\_answer.

- **Formula Used:**

	Output Column	Data Preview
1	Treasure Box Key	<a href="http://ow.ly/MGrW50GMEvk">http://ow.ly/MGrW50GMEvk</a>
	fx "http://ow.ly/" + [Concat_answer]	

## 6. Final Link:

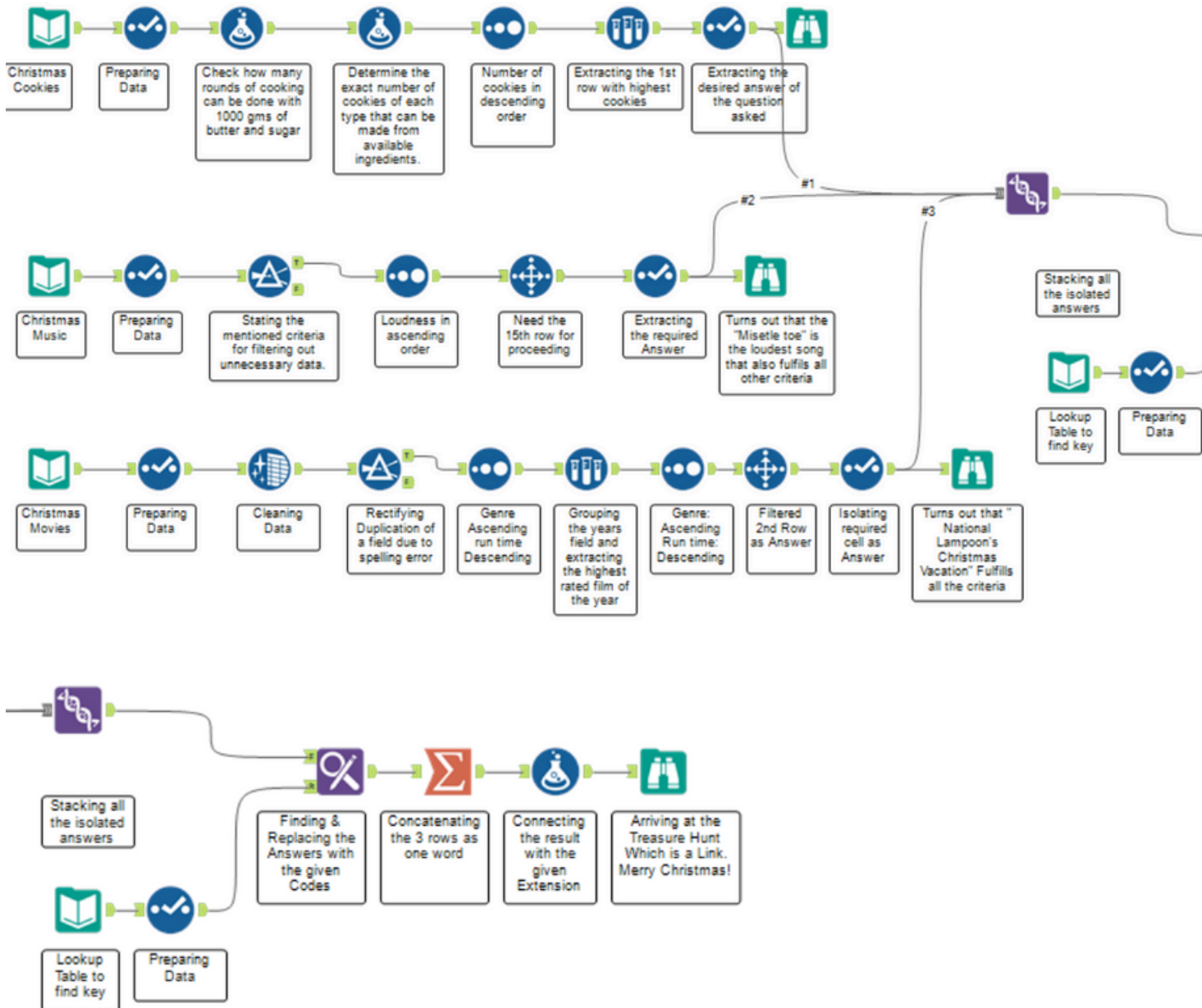
Record	Concat_answer	Treasure Box Key
1	MGrW50GMEvk	<a href="http://ow.ly/MGrW50GMEvk">http://ow.ly/MGrW50GMEvk</a>

## Result and Learnings:

Finally secured the treasure after a long hunt which was a link to a Christmas celebration video. Built this workflow and learnt effective usage of multiple tools and workflow designing in Alteryx.

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## All Task Workflow



## Conclusion:

Alteryx Weekly Challenge #298 was a blast! It not only tested my Alteryx skills but also allowed me to curate the perfect Christmas night for my friends. Cheers to a festive season filled with data-driven fun!