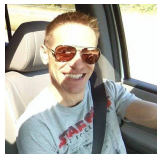


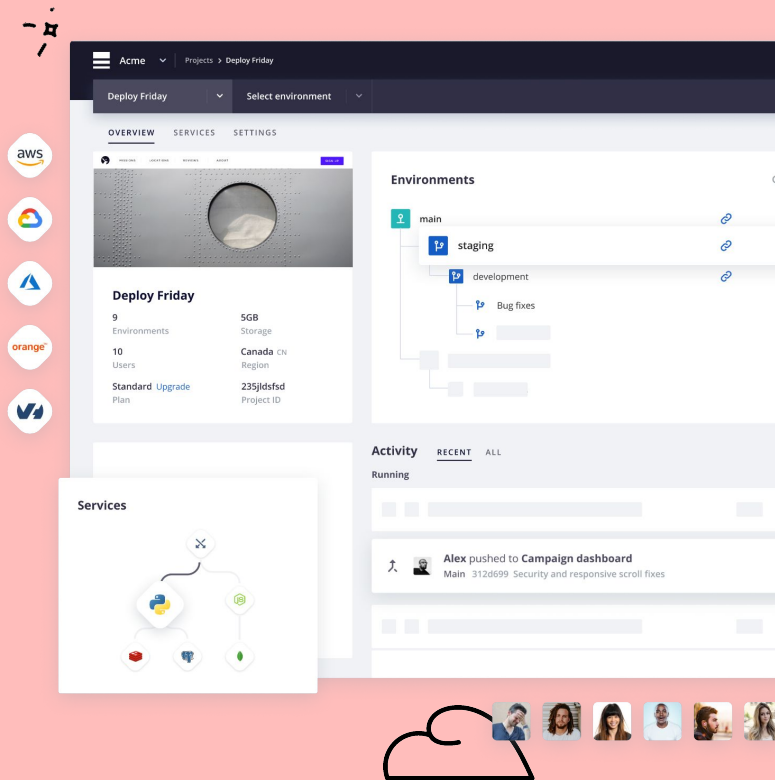
RegEx:

Demystifying the Hieroglyphics



Paul Gilzow

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Outline

- **What is it?**
- **What's in it for me?**
- **What do all those symbols mean anyway?**
- **Game time**

Follow Along

- [**https://github.com/gilzow**](https://github.com/gilzow)
- [**https://regex101.com/**](https://regex101.com/)

An introduction to Regular Expressions

Regular Expressions

- **Originated in 1951 by mathematician Stephen Cole Kleene**

Regular Expressions

- **Originated in 1951 by mathematician Stephen Cole Kleene**
- **Describe regular languages in a formal language theory**

Regular Expressions

- **Originated in 1951 by mathematician Stephen Cole Kleene**
- **Describe regular languages in a formal language theory**
- **Are an algebraic way to describe languages**

⋮ / ^(?=(?!(.)\1)([^\D0:105-93+30])(?-1)(?<!\d(?<=(?![5-90-3])\d)))\.[^\WHY?]\$



Regular Expressions

"...everything is essentially a character, and we are writing patterns to match a specific sequence of characters."

– Faisal Shahbaz

Sequence of characters that specifies a search pattern in text

What Regular Expressions are not

- **A programming language**

What Regular Expressions are not

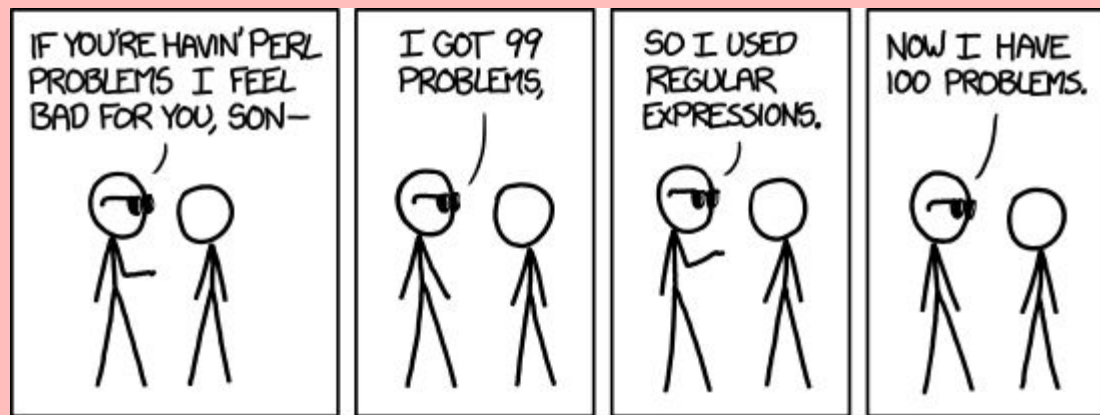
- **A programming language**
- **Unlearnable**

“ There is nothing **regular**
about Regular Expressions

- A former attendee

What Regular Expressions are not

- **A programming language**
- **Unlearnable**
- **The solution to every problem**



Source: <https://xkcd.com/1171/>

So **what** can I use them for?

Regular Expression uses

- Finding text



Regular Expression uses

- **Finding text**
- **Validating text**

Regular Expression uses

- **Finding text**
- **Validating text**
- **String manipulation**

I'm **not** impressed...

Reg Expressions in Word/docs

<https://www.nationalgeographic.com/animals/article/mexican-gray-wolf-and-red-wolves-are-unique>

These rare wolves are unique species. Here's why that matters.

BY DOUGLAS MAIN

Mexican gray wolves and red wolves are taxonomically unique, a federal report says, and require protection under the Endangered Species Act. Despite popular beliefs, brown wolves are not a separate species.

It's hard to believe red wolves and Mexican gray wolves are still around: Both came about as close to extinction as is physically possible. Red wolves, for example, have plummeted to a population of 35 animals or fewer.

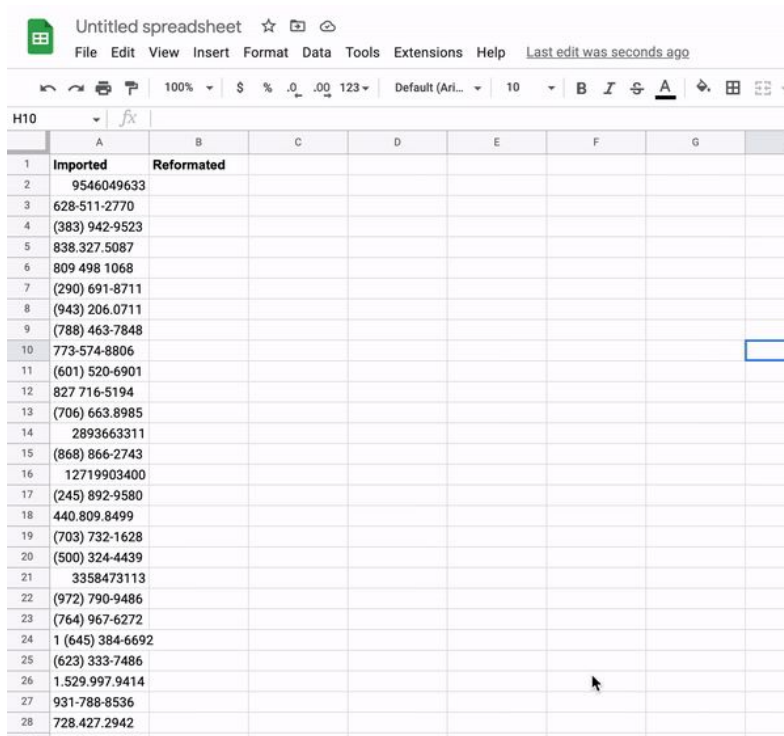
But despite incredible recoveries, both remain highly imperiled. These North American predators often come into conflict with people, especially farmers and ranchers. As part of this contention, some have questioned the science asserting the animals are unique species and worthy of protection under the U.S. Endangered Species Act.

Now, a federally-commissioned study has put that question to rest. According to a report just published by the National Academy of Sciences, Mexican gray wolves are a unique subspecies (*Canis lupus baileyi*) of gray wolf (remember: brown wolves are the same species), and red wolves are a legitimate, separate wolf species (*Canis rufus*). Federal law thus requires both to be protected under the Endangered Species Act.

This matters because some, including landowners and local politicians, have argued that since red wolves have at times interbred with coyotes, they may not be unique enough to deserve protection. Others have contended that Mexican gray wolves are too similar to gray wolves. But that's not the case.



Reg Expressions in Excel/sheets



	A	B	C	D	E	F	G
1	Imported	Reformatted					
2	9546049633						
3	628-511-2770						
4	(383) 942-9523						
5	838.327.5087						
6	809 498 1068						
7	(290) 691-8711						
8	(943) 206.0711						
9	(788) 463-7848						
10	773-574-8806						
11	(601) 520-6901						
12	827 716-5194						
13	(706) 663.8985						
14	2893663311						
15	(868) 866-2743						
16	12719903400						
17	(245) 892-9580						
18	440.809.8499						
19	(703) 732-1628						
20	(500) 324-4439						
21	3358473113						
22	(972) 790-9486						
23	(764) 967-6272						
24	1 (645) 384-6692						
25	(623) 333-7486						
26	1.529.997.9414						
27	931-788-8536						
28	728.427.2942						



Regular Expressions in Google Analytics and Tag Manager

The screenshot displays the Google Tag Manager (GTM) interface in a web browser. The browser's address bar shows the URL `https://tagmanager.google.com/#/container/accounts/144483319/containers/10132907/workspaces/1/tags`. The GTM header includes the account name "218EmptyValue" and the container ID "GTM-NHX7RP6". The interface is in "Preview" mode, as indicated by the orange banner at the top of the workspace area.

Workspace Overview:

- Current Workspace:** Default Workspace
- Search:** Search
- Navigation:** Overview, Tags, Triggers, Variables, Folders

Now Previewing Workspace – Default Workspace

You can preview and debug the workspace by visiting your site from this web browser. Debug pane not loading? Try reloading your site, ignoring cached content (i.e. hard refresh).

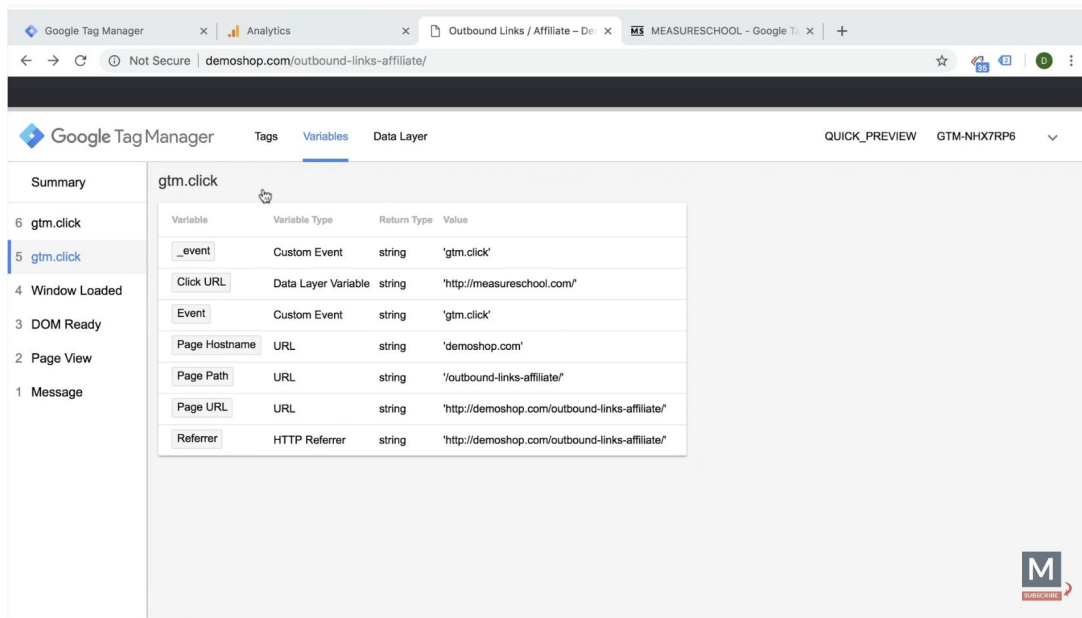
[Refresh](#) [Leave Preview Mode](#) [Share Preview](#)

Tags

Name ↑	Type	Firing Triggers	Last Edited
GA - Event - Outbound Link Click	Google Analytics – Universal Analytics	Outbound Link	5 minutes ago

At the bottom of the page, there are links for [Terms of Service](#) and [Privacy Policy](#), and a YouTube channel icon with the letter "M" and the word "SUBSCRIBE".

Regular Expressions in Google Analytics and Tag Manager



The screenshot shows the Google Tag Manager interface. The browser window at the top displays the URL `demoshop.com/outbound-links-affiliate/`. The interface has a navigation bar with tabs for 'Tags', 'Variables', and 'Data Layer'. The 'Variables' tab is selected, and the 'gtm.click' tag is chosen. A sidebar on the left lists the variables, with 'gtm.click' selected. The main area displays a table of variables for the 'gtm.click' tag.

Variable	Variable Type	Return Type	Value
<code>_event</code>	Custom Event	string	'gtm.click'
<code>Click URL</code>	Data Layer Variable	string	'http://measureschool.com/'
<code>Event</code>	Custom Event	string	'gtm.click'
<code>Page Hostname</code>	URL	string	'demoshop.com'
<code>Page Path</code>	URL	string	'/outbound-links-affiliate/'
<code>Page URL</code>	URL	string	'http://demoshop.com/outbound-links-affiliate/'
<code>Referrer</code>	HTTP Referrer	string	'http://demoshop.com/outbound-links-affiliate/'

Regular Expressions in Google Analytics and Tag Manager

The screenshot displays the Google Tag Manager (GTM) interface in a web browser. The browser's address bar shows the URL `demoshop.com/outbound-links-affiliate/`. The GTM interface has a top navigation bar with tabs for 'Tags', 'Variables', and 'Data Layer'. On the left, a list of tags is shown, with 'gtm.click' selected. The main area displays the configuration for the 'GA - Event - Outbound Link Click' tag. The 'Properties' section contains a table with the following details:

Name	Value
Type	Google Analytics – Universal Analytics
Firing Status	Succeeded
Non-Interaction Hit	false
Enable overriding settings in this tag	true
Category	'Outbound Link'
Track Type	'TRACK_EVENT'
Action	'http://measureschool.com'
Label	'/outbound-links-affiliate/'
Tracking ID	'UA-58939657-1'

At the bottom right of the interface, there is a 'Show Less' link and a 'Firinn Trainers' logo.

Regular Expressions in Google Analytics and Tag Manager

The screenshot displays the Google Tag Manager interface for a tag named 'gtm.click'. The interface includes a top navigation bar with links for Clothing, Hoodies, T-shirts, Music, Albums, Singles, Contact Forms, and More. Below this is a breadcrumb trail: Home / Outbound Links / Affiliate. The main content area shows the 'Variables' tab for the 'gtm.click' tag. A table lists the variables used in the tag configuration.

Variable	Variable Type	Return Type	Value
<code>_event</code>	Custom Event	string	'gtm.click'
Click URL	Data Layer Variable	string	''
Event	Custom Event	string	'gtm.click'
Page Hostname	URL	string	'demoshop.com'
Page Path	URL	string	'/outbound-links-affiliate/'
Page URL	URL	string	'http://demoshop.com/outbound-links-affiliate/'
Referrer	HTTP Referrer	string	'http://demoshop.com/outbound-links-affiliate/'

On the left side of the interface, a list of tags is visible, with 'gtm.click' selected. The bottom right corner features a 'SUBSCRIBE' button with a red arrow icon.

Regular Expressions in Google Analytics and Tag Manager

The screenshot shows the Google Tag Manager interface with the 'Tags' tab selected. A list of tags on the left includes 'gtm.click' (9), 'gtm.click' (8), 'gtm.click' (7), 'gtm.click' (6), 'gtm.click' (5), 'Window Loaded' (4), and 'DOM Ready' (3). The 'gtm.click' tag (9) is selected, and its configuration is displayed in the main area.

Property	Value
Non-Interaction Hit	false
Enable overriding settings in this tag	true
Category	'Outbound Link'
Track Type	'TRACK_EVENT'
Action	'
Label	'/outbound-links-affiliate/'
Tracking ID	'UA-58939657-1'

[Show Less](#)

Firing Triggers

- ✓ Outbound Link

The interface also shows a navigation bar at the top with links like 'Clothing', 'Hoodies', 'T-shirts', 'Music', 'Albums', 'Singles', 'Contact Forms', and 'More'. The URL bar shows 'demoshop.com/outbound-links-affiliate/'.

Regular Expressions in Google Analytics and Tag Manager

The screenshot displays the Google Tag Manager interface within a web browser. The browser's address bar shows the URL `demoshop.com/outbound-links-affiliate/`. The page header includes navigation links: Clothing, Hoodies, T-shirts, Music, Albums, Singles, and Contact Forms. Below the header, the breadcrumb trail reads `Home / Outbound Links / Affiliate`.

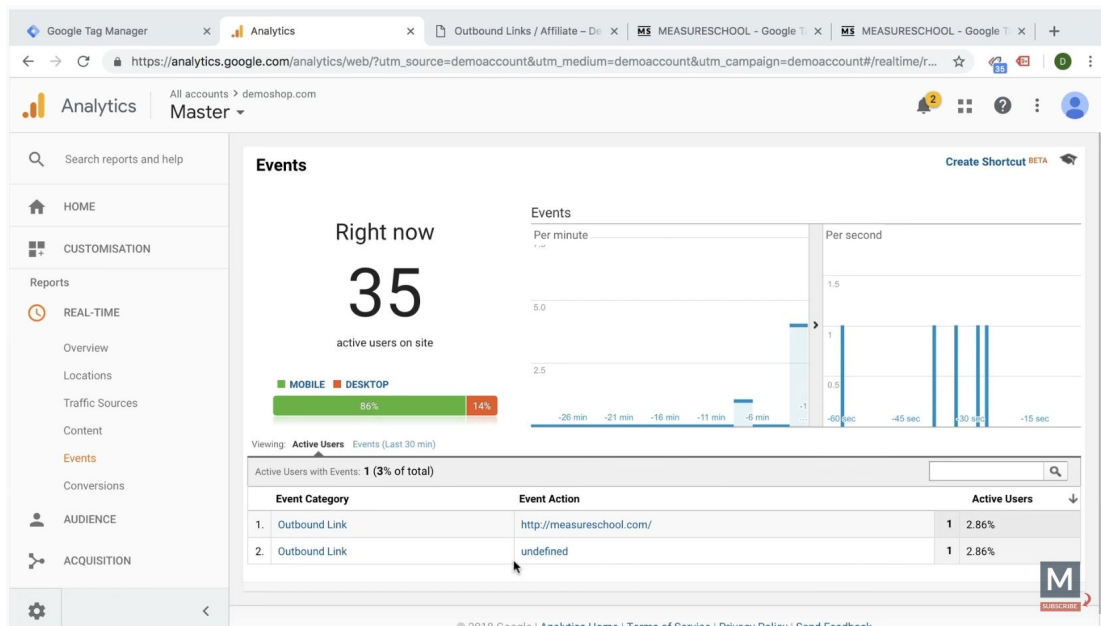
The Google Tag Manager interface is open, showing the 'Tags' tab. A list of tags is visible on the left, with 'gtm.click' selected. The main area displays the configuration for the selected tag, 'Event Outbound Link - undefined'. The configuration table is as follows:

Field	Value
Non-Interaction Hit	false
Enable overriding settings in this tag	true
Category	'Outbound Link'
Track Type	'TRACK_EVENT'
Action	' '
Label	'/outbound-links-affiliate/'
Tracking ID	'UA-58939657-1'

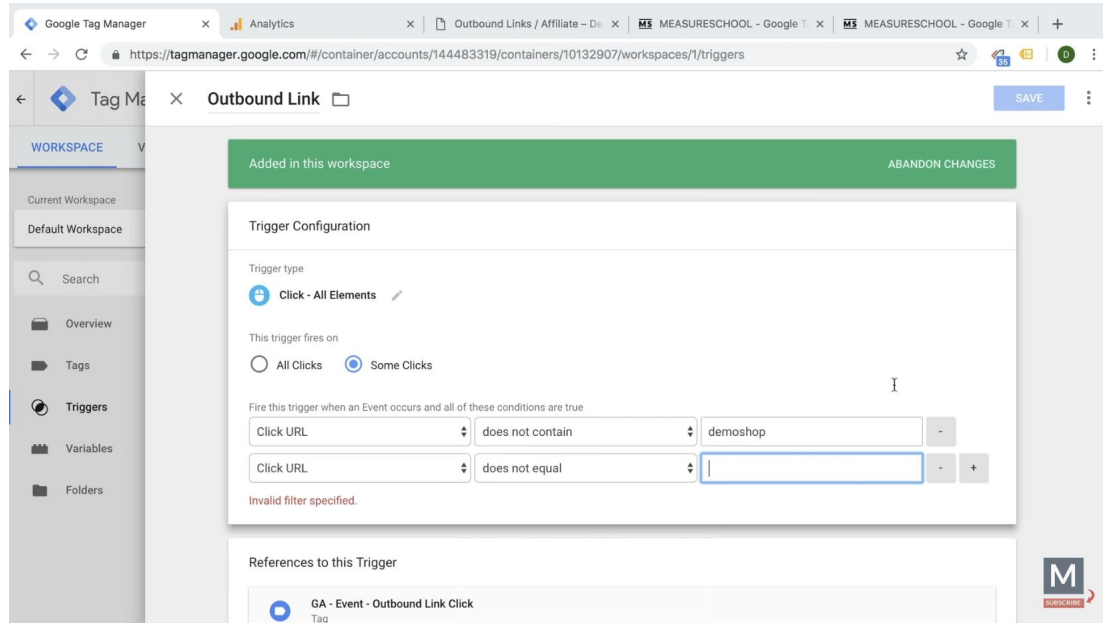
Below the configuration table, the 'Firing Triggers' section shows a single trigger: 'Outbound Link' with a checkmark, indicating it is active.

The Google Tag Assistant overlay is visible on the right side of the screen, showing the same configuration details for the 'Event Outbound Link - undefined' tag. It includes fields for Category, Action, Label, Non-Interaction, and Title, with values matching the Tag Manager configuration.

Regular Expressions in Google Analytics and Tag Manager

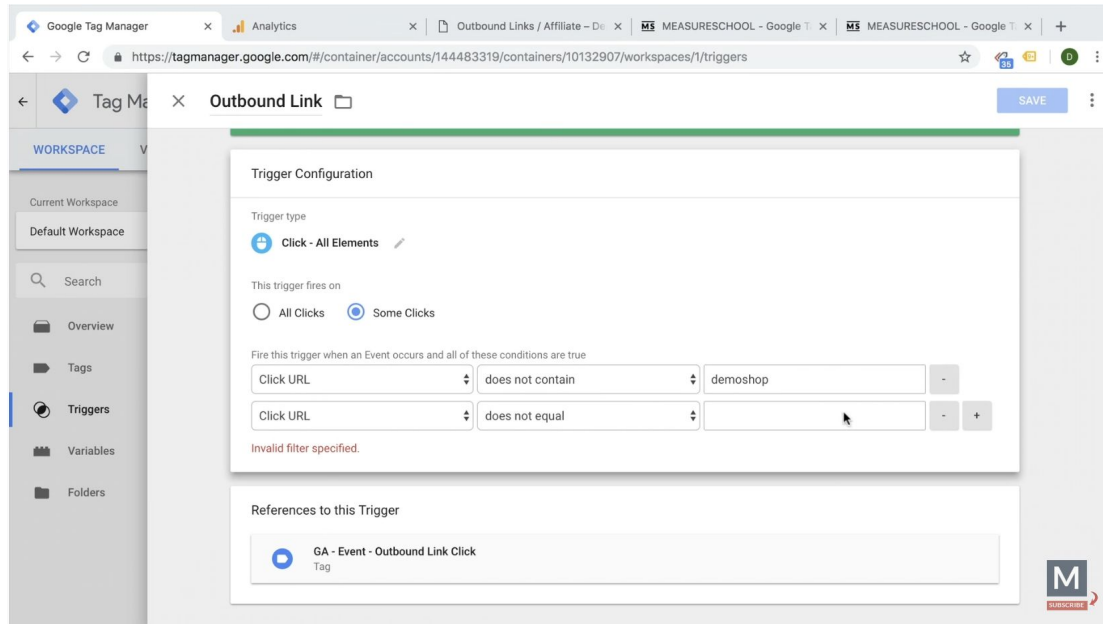


Regular Expressions in Google Analytics and Tag Manager



The screenshot displays the Google Tag Manager interface for configuring a trigger. The browser's address bar shows the URL: `https://tagmanager.google.com/#/container/accounts/144483319/containers/10132907/workspaces/1/triggers`. The left sidebar contains navigation options: **WORKSPACE**, **Current Workspace**, **Default Workspace**, **Search**, **Overview**, **Tags**, **Triggers** (selected), **Variables**, and **Folders**. The main content area is titled **Outbound Link** and includes a green banner stating "Added in this workspace" with an **ABANDON CHANGES** button. The **Trigger Configuration** section shows the **Trigger type** as **Click - All Elements**. Under **This trigger fires on**, the **Some Clicks** option is selected. The configuration rule is: "Fire this trigger when an Event occurs and all of these conditions are true". The first condition is "Click URL" **does not contain** "demoshop". The second condition is "Click URL" **does not equal** an empty text box, which has a red error message "Invalid filter specified." below it. The **References to this Trigger** section at the bottom shows a tag named "GA - Event - Outbound Link Click".

Regular Expressions in Google Analytics and Tag Manager



The screenshot displays the Google Tag Manager interface for configuring a trigger. The browser's address bar shows the URL: `https://tagmanager.google.com/#/container/accounts/144483319/containers/10132907/workspaces/1/triggers`. The left sidebar contains a 'WORKSPACE' section with 'Current Workspace' and 'Default Workspace', and a 'Triggers' section with a search bar and a list of items including 'Overview', 'Tags', 'Triggers', 'Variables', and 'Folders'. The main content area is titled 'Trigger Configuration' and shows the 'Click - All Elements' trigger type. Under 'This trigger fires on', the 'Some Clicks' option is selected. A note states: 'Fire this trigger when an Event occurs and all of these conditions are true'. Two conditions are listed: 'Click URL' does not contain 'demoshop' and 'Click URL' does not equal an empty field. A red error message 'Invalid filter specified.' is visible below the conditions. The 'References to this Trigger' section at the bottom shows a single reference: 'GA - Event - Outbound Link Click Tag'. A 'SAVE' button is located in the top right corner of the configuration panel.

Google Tag Manager

Analytics

Outbound Links / Affiliate - De

MEASURESCHOOL - Google T

MEASURESCHOOL - Google T

← → ↻ <https://tagmanager.google.com/#/container/accounts/144483319/containers/10132907/workspaces/1/triggers> ☆ 38 10

← Tag Manager × Outbound Link

SAVE

WORKSPACE

Current Workspace

Default Workspace

Search

Overview

Tags

Triggers

Variables

Folders

Trigger Configuration

Trigger type

Click - All Elements

This trigger fires on

All Clicks ☐ Some Clicks ☒

Fire this trigger when an Event occurs and all of these conditions are true

Click URL does not contain demoshop

Click URL does not equal

Invalid filter specified.

References to this Trigger

GA - Event - Outbound Link Click Tag

M

Subscribe

Regular Expressions in Google Analytics and Tag Manager

The screenshot displays the Google Tag Manager interface for configuring a trigger. The browser's address bar shows the URL: <https://tagmanager.google.com/#/container/accounts/144483319/containers/10132907/workspaces/1/triggers>. The page title is "Outbound Link".

The "Trigger Configuration" section shows the "Trigger type" as "Click - All Elements". Under "This trigger fires on", the "Some Clicks" option is selected. A dropdown menu is open, listing various conditions:

- equals
- contains
- starts with
- ends with
- matches CSS selector
- matches RegEx
- matches RegEx (ignore case)
- does not equal
- does not contain
- does not start with
- does not end with
- does not match CSS selector
- does not match RegEx** (highlighted)
- does not match RegEx (ignore case)
- less than
- less than or equal to
- greater than
- greater than or equal to

The "Click URL" field contains the text "demoshop". A red error message "Invalid filter specified." is visible below the filter selection area. The "References to this Trigger" section shows a reference to "GA - Event - Outbound Link Click" with a "Tag" icon.

Regular Expressions in Google Analytics and Tag Manager

The screenshot displays the Google Tag Manager interface in a web browser. The browser's address bar shows the URL: `https://tagmanager.google.com/#/container/accounts/144483319/containers/10132907/workspaces/1/triggers`. The page title is "Outbound Link". A green banner at the top of the configuration window reads "Added in this workspace" and "ABANDON CHANGES".

The "Trigger Configuration" window is open, showing the following settings:

- Trigger type:** Click - All Elements
- This trigger fires on:** ☐ All Clicks, ☒ Some Clicks
- Fire this trigger when an Event occurs and all of these conditions are true:**
 - Click URL does not contain demoshop
 - Click URL does not match RegEx `*$`

Below the configuration, the "References to this Trigger" section shows a single reference: "GA - Event - Outbound Link Click" with a "Tag" icon.

A sidebar on the left contains navigation links: "WORKSPACE", "Current Workspace", "Default Workspace", "Search", "Overview", "Tags", "Triggers" (highlighted), "Variables", and "Folders". A "SAVE" button is located in the top right corner of the configuration window.

Regular Expressions in Google Analytics and Tag Manager

The screenshot shows the Google Tag Manager interface in a web browser. The browser's address bar displays the URL `demoshop.com/outbound-links-affiliate/`. The Google Tag Manager interface has a top navigation bar with tabs for 'Tags', 'Variables', and 'Data Layer'. The 'Tags' tab is active, showing a list of tags on the left and a detailed view of the selected 'gtm.click' tag on the right. The tag list on the left includes 'Summary', '6 gtm.click', '5 gtm.click' (highlighted), '4 Window Loaded', '3 DOM Ready', '2 Page View', and '1 Message'. The detailed view of the 'gtm.click' tag shows 'Tags Fired On This Event' as 'None' and 'Tags Not Fired On This Event' as 'GA - Event: Outbound Link Click' and 'Google Analytics - Universal Analytics'. A 'QUICK_PREVIEW' button and a dropdown menu showing 'GTM-NHX7RP6' are visible in the top right corner. A small 'M' logo with a 'Subscribe' button is in the bottom right corner.

Regular Expressions in Google Analytics and Tag Manager

The screenshot shows the Google Tag Manager interface in a web browser. The browser's address bar displays the URL `demoshop.com/outbound-links-affiliate/`. The Google Tag Manager interface has a top navigation bar with tabs for 'Tags', 'Variables', and 'Data Layer'. The 'Tags' tab is active, showing a list of tags on the left and a configuration panel on the right.

Summary

- 6 gtm.click
- 5 gtm.click
- 4 Window Loaded
- 3 DOM Ready
- 2 Page View
- 1 Message

Configuration Panel:

- Type: Google Analytics – Universal Analytics
- Non-Interaction Hit: false
- Enable overriding settings in this tag: true
- Category: 'Outbound Link'
- Track Type: 'TRACK_EVENT'
- Show More

Firing Triggers

Outbound Link

Filters

- ☒ _event equals gtm.click
- ☒ Click URL does not contain demoshop
- ☒ Click URL does not match RegEx ^\$

Blocking Triggers

In the bottom right corner, there is a small logo with the letter 'M' and the word 'SUBSCRIBE' below it.



So **how** do I actually use it?

Syntax

- **Literal Characters**

Syntax

- **Literal Characters**
- **Special Characters**

Syntax

- **Literal Characters**
- **Special Characters**
- **Non-Printable Characters**

Syntax

- **Literal Characters**
- **Special Characters**
- **Non-Printable Characters**
- **Character classes**

Syntax

- **Literal Characters**
- **Special Characters**
- **Non-Printable Characters**
- **Character classes**
- **Shorthand Character Classes**

Syntax

- **Literal Characters**
- **Special Characters**
- **Non-Printable Characters**
- **Character classes**
- **Shorthand Character Classes**
- **So many characters!**

Literal characters

foo is a valid regular
expression

Delimiters

Character that defines the boundaries of your Regular Expression

- / ← most common
- ~
- %
- #
- @
- ;
- \

Regular Expression engine

- **Software that can process regular expressions**
- **Sometimes called "flavors"**

WARNING



Warning

- **Not every engine is the same**

Warning

- **Not every engine is the same**
- **Standards are "loose"**
 - + POSIX Basic Regular Expressions
 - + PCRE - Perl Compatible Regular Expressions

Warning

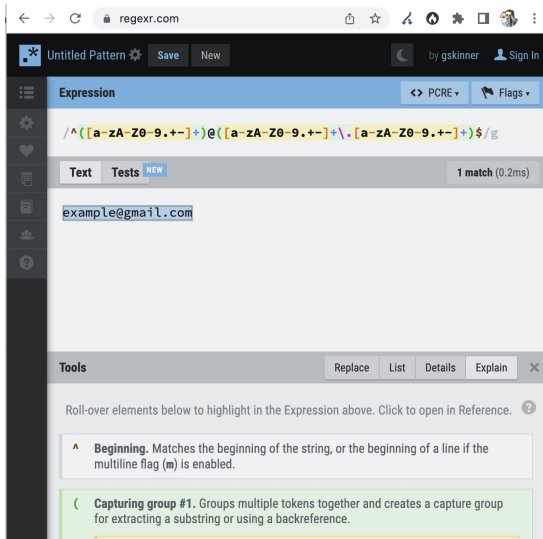
- **Not every engine is the same**
- **Standards are "loose"**
 - + POSIX Basic Regular Expressions
 - + PCRE - Perl Compatible Regular Expressions
- **Always test in a RegEx tool**

BONUS!



Bonus

Use a Regular
Expression
builder!



- **Online Options**

- + <https://regex101.com/>
- + <https://regexr.com/>
- + <https://rubular.com/>

Bonus

Use a Regular
Expression
builder!

- **Online Options**

- + <https://regex101.com/>

- + <https://regexr.com/>

- + <https://rubular.com/>

- **Native/Installable Options**

- + **RegexBuddy (Windows)**

- + **Expressions (macOS)**

Special characters

AKA MetaCharacters

12 Special Characters

-

\

-

^

-

\$

-

[

-

.

-

|

-

?

-

*

-

+

-

{

-

(

-

)

Special characters:

Anchors

- `^`

`^` is an anchor.

Specifically, the start of a string or line

```
/^bar/
```


Special characters:

Anchors

- `^`
- `$`

`$` is also an anchor, but for
the end of a string
or line

```
/bar$/
```

BONUS!



Bonus

Whenever
possible, ANCHOR!



treasure here, treasure there, everywhere **treasure**



treasure here, treasure there, everywhere treasure



treasure here, **treasure** there, everywhere **treasure**

Special characters:

Character
Class



[

[allows us to define a
character class

/ [a-z] /

Character classes

AKA Character Sets

- **Match a single literal character from a list of literal characters**

Character classes

AKA Character Sets

- **Match a single literal character from a list of literal characters**
- **Also allow us to define a range of literal characters**

Character classes

AKA Character Sets

- Match a single literal character from a list of literal characters
- Also allow us to define a range of literal characters
- `]` is not a special character unless used with `[` to create a Character Class

Character classes

AKA Character Sets

- Match a single literal character from a list of literal characters
- Also allow us to define a range of literal characters
- `]` is not a special character unless used with `[` to create a Character Class
- Inside a character class you do not need to escape special characters, except for `]`, `\`, `^`, and `-`.

Special characters:

Negation

- `^`

`^` is the negation character

`/ [^ a - z] /`

Wait... **what?**



Negation

When placed after a `[`, the `^` symbol negates the character class

Shorthand character classes

AKA Special
Sequences

**A `\` followed by one of
several literal characters,
that stands in for a larger
character class**

Shorthand character classes

AKA Special Sequences

Examples

- `\d` is shorthand for `[0-9]`
- `\w` is shorthand for `[A-Za-z0-9_]`
- `\s` is shorthand for all whitespace characters, or `[\t\r\n\f]`
- Plus about 25 more

Character classes

AKA The weird one



.

. matches any single character (except for line breaks)

```
/bar./
```

Special characters

Alternation



|

| creates a branch for the regular expression engine to follow. Similar to an OR statement in programming

```
/bar|foo/
```

WARNING



Warning

The RegEx
Engine always
returns the
leftmost match

Example

```
/cat|cats/
```

There were many cats near the
bowl, with one cat by the door

Special characters:

Quantifiers

- `?`

`?` makes the preceding token in the regular expression optional (zero or once)

```
/foo?bar/
```

WARNING



Warning: greediness

By default, a quantifier tells the engine to match *as many* instances of its quantified token or subpattern as possible.

Given the text "It's raining cats and dogs" a regex pattern of `/cats?/` will **always** match "cats" instead of just "cat"

Special characters:

Quantifiers

- ?
- *

* matches the preceding token in the regular expression *zero or more* times

```
/foo*bar/
```

Special characters:

Quantifiers

- ?
- *
- +

+ matches the preceding token in the regular expression *one* or more times

```
/foo+bar/
```

Special characters:

Quantifiers

- ?
- *
- +
- {

{ combined with } allows us to specify the number of times the previous token should be matched

```
/fo{2,3}bar/
```

Special characters:

Quantifiers

- Syntax is `{min,max}`
 - + `min` is zero or a positive number indicating the minimum number of matches of the previous token
 - + `max` is an integer equal to or greater than `min` indicating the maximum number of matches

Special characters:

Quantifiers

- $\{0, 1\}$ is equivalent to $?$

Special characters:

Quantifiers

- $\{0, 1\}$ is equivalent to $?$
- $\{0, \}$ is equivalent to $*$

Special characters:

Quantifiers

- $\{0, 1\}$ is equivalent to $?$
- $\{0, \}$ is equivalent to $*$
- $\{1, \}$ is equivalent to $+$

Special characters:

Quantifiers

- $\{0, 1\}$ is equivalent to $?$
- $\{0, \}$ is equivalent to $*$
- $\{1, \}$ is equivalent to $+$
- Omitting both the comma and \max tells the engine to repeat the token exactly \min times.

Special characters:

Quantifiers

- `{ 0, 1 }` is equivalent to `?`
- `{ 0, }` is equivalent to `*`
- `{ 1, }` is equivalent to `+`
- Omitting both the comma and `max` tells the engine to repeat the token exactly `min` times.
- `}` is not a special character unless used with `{`

Special characters

AKA MetaCharacters

12 Special Characters:

-

\

-

^

-

\$

-

[

-

.

-

|

-

?

-

*

-

+

-

{

-

(

-

)

Special characters:

Grouping

- (
-)

Placing a pattern between (and) allows you to group parts of a regular expression together.

```
/theat(er|re)/
```

```
/foo(bar){2}/
```

Special characters:

Capturing

- (
-)

Placing a pattern between (and) also allows you to capture the matched string for later reuse.

```
/^([a-zA-Z]{5})$/
```




Special characters:

Capturing

- (
-)

Placing a pattern between (and) also allows you to capture the matched string for later reuse.

```
/^([a-zA-Z]{5})$/
```

Special characters

AKA MetaCharacters

12 Special Characters:

-

\

-

^

-

\$

-

[

-

.

-

|

-

?

-

*

-

+

-

{

-

(

-

)

BONUS!



Bonus

Lookarounds

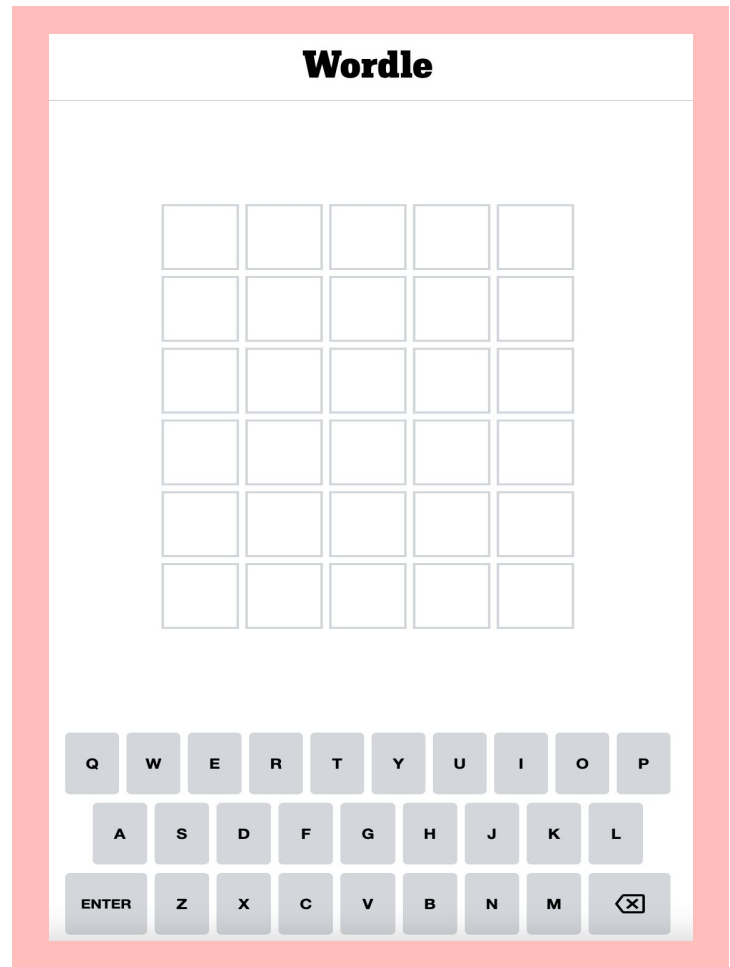
- Zero-length assertion
- Similar to `^` and `$`
- Lookahead
- Lookbehind
- Available as positive and negative

```
/ (?= [a-z] {1,4} $) . * /
```

Game time!

Game time

Build a
Regular
Expression to
solve today's
Wordle!



<https://www.nytimes.com/games/wordle/>

Game time

Another Wordle?

OR

Crossword Puzzle?

Game time

Wordle clone

<https://engaging-data.com/wordguessr-wordle/>

Game time

Crossword Puzzle

<https://regexcrossword.com/challenges/beginner/puzzles>

Resources & acknowledgements

Resources & acknowledgements

- <https://www.regular-expressions.info/>
- https://en.wikipedia.org/wiki/Regular_expression
- <https://www.rexegg.com/>
- <https://regexone.com/>
- <https://carlalexander.ca/beginners-guide-regular-expressions/>

Questions?



Thank you!

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