

A **regular expression** (shortened as **regex** or **regexp**; also referred to as **rational expression**) is a sequence of characters that specifies a search pattern in text.

Usually, such patterns are used by string-searching algorithms for "find" or "find and replace" operations on strings, or for input validation. It is a technique developed in theoretical computer science and formal language theory.

The concept of regular expressions began in the 1950s, when the American mathematician Stephen Cole Kleene formalized the description of a regular language. They came into common use with Unix text-processing utilities. Different syntaxes for writing regular expressions have existed since the 1980s, one being the POSIX standard and another, widely used, being the Perl syntax.

Regular expressions are used in search engines, search and replace dialogs of word processors and text editors, in text processing utilities such as sed and AWK and in lexical analysis. Many programming languages provide regex capabilities either built-in or via libraries, as it has uses in many situations.

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Section: B1

MySQL Workbench

Local instance MySQL80

FileEditViewQueryDatabaseServerToolsScriptingHelp

Navigator

SCHEMAS

Filter objects

classicmodels

Tables

Views

Stored Procedures

Functions

sakila

sys

world

AdministrationSchemas

Information

Schema: classicmodels

Query 1

Limit to 1000 rows

1 SELECT *
2 FROM customers
3 where creditLimit>=1000000 and
4 customerNumber<200
5 or country in ("USA");
6

Result Grid

Filter Rows:

customerNumbercustomerNamecontactLastNamecontactFirstNamephoneaddressLine1addressLine2citystate

112Signal Gift StoresKingJean70255518388489 Strong St.NULLLas VegasNV

124Mini Gifts Distributors Ltd.NelsonSusan41555514505677 Strong St.NULLSan RafaelCA

129Mini Wheels Co.MurphyJulie65055557875557 North Pendale Street NULLSan FranciscoCA

131Land of Toys Inc.LeeKwai2125557818897 Long Airport Avenue NULLNYCNY

151Muscle Machine Inc.YoungJeff21255574134092 Furth Circle Suite 400NYCNY

157Diecast Classics Inc.LeongKelvin21555515557586 Pompton St.NULLAllentownPA

161Technics Stores Inc.HashimotoJuri65055568099408 Furth Circle NULLBurlingameCA

168American Souvenirs Inc.FrancoKeith2035557845149 Spinnaker Dr.Suite 101New HavenCT

173Cambridge Collectables Co.TsengJerry61755555554658 Baden Av.NULLCambridgeMA

175Gift Depot Inc.KingJulie203555257025593 South Bay Ln.4658 Baden Av.jdgewaterCT

181Vitachrome Inc.FrickMichael21255515002678 Kingston Rd.Suite 101NYCNY

customers 8

ApplyRevert

Context HelpSnippets

Output

Action Output

#TimeActionMessageDuration / Fetch

719:04:38SELECT customerName, creditLimit, creditLimit+2000 As new_creditLimit FROM customers ORDER BY crediti...122 row(s) returned0.000 sec / 0.000 sec

819:04:39SELECT customerName, creditLimit, creditLimit+2000 As new_creditLimit FROM customers ORDER BY crediti...122 row(s) returned0.000 sec / 0.000 sec

919:04:39SELECT customerName, creditLimit, creditLimit+2000 As new_creditLimit FROM customers ORDER BY crediti...122 row(s) returned0.000 sec / 0.000 sec

1019:04:40SELECT customerName, creditLimit, creditLimit+2000 As new_creditLimit FROM customers ORDER BY crediti...122 row(s) returned0.000 sec / 0.000 sec

1119:07:57SELECT * FROM customers where creditLimit>=1000000 and customerNumber<200 or country in ("USA") LIM...36 row(s) returned0.000 sec / 0.000 sec

1219:07:57SELECT * FROM customers where creditLimit>=1000000 and customerNumber<200 or country in ("USA") LIM...36 row(s) returned0.000 sec / 0.000 sec

Object Info

Session

SQLAdditions

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

Result Grid

Form Editor

Field Types

99+

ENG

7:08 PM 2/28/2022

MySQL Workbench

Local instance MySQL80

FileEditViewQueryDatabaseServerToolsScriptingHelp

Navigator

Query 1

Limit to 1000 rows

SCHEMAS

Filter objects

classicmodels

Tables

Views

Stored Procedures

Functions

sakila

sys

world

Administration

Schemas

Information

Schema: classicmodels

1

2

3

4

SELECT *

FROM customers

where customerNumber in (141,131,321,286);

Result Grid

Filter Rows:

Edits

Export/Imports

Wrap Cell Content:

customerNumber	customerName	contactLastName	contactFirstName	phone	addressLine1	addressLine2	city	state	postalCode
131	Land of Toys Inc.	Lee	Kwai	2125557818	897 Long Airport Avenue		NYC	NY	1002
141	Euro+ Shopping Channel	Freyre	Diego	(91) 555 94 44	C/ Moralzarzal, 86		Madrid		2803
286	Marta's Replicas Co.	Hernandez	Marta	6175558555	39323 Spinnaker Dr.		Cambridge	MA	5124
321	Corporate Gift Ideas Co.	Brown	Julie	6505551386	7734 Strong St.		San Francisco	CA	9421

Result Grid

Form Editor

Field Types

customers 9

Apply

Revert

Context Help

Snippets

Output

Action Output

#	Time	Action	Message	Duration / Fetch
11	19:07:57	SELECT * FROM customers where creditLimit>=1000000 and customerNumber<200 or country in ("USA") LIM...	36 row(s) returned	0.000 sec / 0.000 sec
12	19:07:57	SELECT * FROM customers where creditLimit>=1000000 and customerNumber<200 or country in ("USA") LIM...	36 row(s) returned	0.000 sec / 0.000 sec
13	19:10:21	SELECT * FROM customers where customerNumber in (286,321,131,141) LIMIT 0, 1000	Error Code: 1054. Unknown column '286,321,131,141' in 'where clause'	0.000 sec
14	19:10:47	SELECT * FROM customers where customerNumber in (286,321,131,141) LIMIT 0, 1000	Error Code: 1054. Unknown column '286,321,131,141' in 'where clause'	0.000 sec
15	19:10:47	SELECT * FROM customers where customerNumber in (286,321,131,141) LIMIT 0, 1000	Error Code: 1054. Unknown column '286,321,131,141' in 'where clause'	0.000 sec
16	19:11:13	SELECT * FROM customers where customerNumber in (141,131,321,286) LIMIT 0, 1000	4 row(s) returned	0.000 sec / 0.000 sec

Object Info

Session

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7:11 PM 2/28/2022

MySQL Workbench

Local instance MySQL80

FileEditViewQueryDatabaseServerToolsScriptingHelp

Navigator

SCHEMAS

Filter objects

classicmodels

- Tables
- Views
- Stored Procedures
- Functions

sakila

sys

world

Administration

Schemas

Information

Schema: classicmodels

Query 1

Limit to 1000 rows

1SELECT customerName

2creditLimit,

3creditLimit * 10 as new_creditLimit

4FROM customers;

5

Result Grid

Filter Rows:

Exports

Wrap Cell Contents

creditLimit	new_creditLimit
Atelier graphique	210000.00
Signal Gift Stores	718000.00
Australian Collectors, Co.	1173000.00
La Rochelle Gifts	1182000.00
Baane Mini Imports	817000.00
Mini Gifts Distributors Ltd.	2105000.00
Havel & Zbyszek Co	0.00
Blauer See Auto, Co.	597000.00
Mini Wheels Co.	646000.00
Land of Toys Inc.	1149000.00
Euro+ Shopping Channel	2276000.00
Volvo Model Replicas, Co	531000.00

Result Grid

Form Editor

Field Types

Output

Action Output

#	Time	Action	Message	Duration / Fetch
16	19:11:13	SELECT * FROM customers where customerNumber in (141,131,321,286) LIMIT 0, 1000	4 row(s) returned	0.000 sec / 0.000 sec
17	19:13:09	SELECT * FROM orders where orderDate >= '2003-01-01' LIMIT 0, 1000	326 row(s) returned	0.000 sec / 0.000 sec
18	19:13:10	SELECT * FROM orders where orderDate >= '2003-01-01' LIMIT 0, 1000	326 row(s) returned	0.000 sec / 0.000 sec
19	19:13:19	SELECT * FROM orders where orderDate >= '2003-01-01' LIMIT 0, 1000	326 row(s) returned	0.000 sec / 0.000 sec
20	19:13:19	SELECT * FROM orders where orderDate >= '2003-01-01' LIMIT 0, 1000	326 row(s) returned	0.000 sec / 0.000 sec
21	19:17:02	SELECT customerName creditLimit, creditLimit * 10 as new_creditLimit FROM customers LIMIT 0, 1000	122 row(s) returned	0.000 sec / 0.000 sec

Read Only

Context Help

Snippets

SQLAdditions

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Object Info

Session

Windows Taskbar

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7:17 PM 2/28/2022

MySQL Workbench

Local instance MySQL80

FileEditViewQueryDatabaseServerToolsScriptingHelp

Navigator

SCHEMAS

Filter objects

classicmodels

- Tables
- Views
- Stored Procedures
- Functions

sakila

sys

world

Query 1

- Limit to 1000 rows

1 • SELECT contactFirstName

2

3 FROM customers

4 where contactFirstName REGEXP '^je' or

5 | contactFirstName REGEXP '^le';

6

Result Grid

Filter Rows:

Exports

Wrap Cell Content:

contactFirstName

Jean

Jeff

Jerry

Leslie

Jean

Jesus

Leslie

Administration

Schemas

Information

Schema: classicmodels

SQLAdditions

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

customers 16

Read Only

Context Help

Snippets

Output

Action Output

#	Time	Action	Message	Duration / Fetch
✓ 19	19:13:19	SELECT * FROM orders where orderDate >= '2003-01-01' LIMIT 0, 1000	326 row(s) returned	0.000 sec / 0.000 sec
✓ 20	19:13:19	SELECT * FROM orders where orderDate >= '2003-01-01' LIMIT 0, 1000	326 row(s) returned	0.000 sec / 0.000 sec
✓ 21	19:17:02	SELECT customerName creditLimit, creditLimit * 10 as new_creditLimit FROM customers LIMIT 0, 1000	122 row(s) returned	0.000 sec / 0.000 sec
✓ 22	19:19:11	SELECT contactFirstName FROM customers where contactFirstName REGEXP '^je' LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec
✗ 23	19:20:35	SELECT contactFirstName FROM customers where contactFirstName REGEXP '^je' or where contactFirstNa...	Error Code: 1064. You have an error in your SQL syntax; check the manual that corresponds to your MySQL se...	0.000 sec
✓ 24	19:20:51	SELECT contactFirstName FROM customers where contactFirstName REGEXP '^je' or contactFirstName RE...	7 row(s) returned	0.000 sec / 0.000 sec

Object Info

Session

99+

ENG

7:20 PM

2/28/2022

MySQL Workbench

Local instance MySQL80

FileEditViewQueryDatabaseServerToolsScriptingHelp

Navigator

SCHEMAS

Filter objects

classicmodels

- Tables
- Views
- Stored Procedures
- Functions

sakila

sys

world

Administration

Schemas

Information

Schema: classicmodels

Query 1

Limit to 1000 rows

1

2

3

4

5

6

SELECT contactFirstName

FROM customers

where contactFirstName REGEXP 'el\$' or

contactFirstName REGEXP 'ie?';

Result Grid

Filter Rows:

Export:

Wrap Cell Content:

contactFirstName

Carine

Janine

Julie

Kwai

Diego

Christina

Eric

Kelvin

Juri

Veysel

Keith

Isabel

..

customers 17

Read Only

Context Help

Snippets

Output

Action Output

#	Time	Action	Message	Duration / Fetch
20	19:13:19	SELECT * FROM orders where orderDate >= '2003-01-01' LIMIT 0, 1000	326 row(s) returned	0.000 sec / 0.000 sec
21	19:17:02	SELECT customerName creditLimit, creditLimit * 10 as new_creditLimit FROM customers LIMIT 0, 1000	122 row(s) returned	0.000 sec / 0.000 sec
22	19:19:11	SELECT contactFirstName FROM customers where contactFirstName REGEXP "je" LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec
23	19:20:35	SELECT contactFirstName FROM customers where contactFirstName REGEXP "je" or where contactFirstNa...	Error Code: 1064. You have an error in your SQL syntax; check the manual that corresponds to your MySQL se...	0.000 sec
24	19:20:51	SELECT contactFirstName FROM customers where contactFirstName REGEXP "je" or contactFirstName RE...	7 row(s) returned	0.000 sec / 0.000 sec
25	19:22:07	SELECT contactFirstName FROM customers where contactFirstName REGEXP 'el\$' or contactFirstName RE...	56 row(s) returned	0.000 sec / 0.000 sec

Object Info

Session

SQLAdditions

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Result Grid

Form Editor

Field Types

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ENG

7:22 PM

2/28/2022

MySQL Workbench

Local instance MySQL80

FileEditViewQueryDatabaseServerToolsScriptingHelp

Navigator

Query 1

Limit to 1000 rows

SCHEMAS

Filter objects

classicmodels

Tables

Views

Stored Procedures

Functions

sakila

sys

world

Administration

Schemas

Information

Schema: classicmodels

1 • SELECT

2 FROM customers

3 where creditLimit between 100000 and 110000

4

Result Grid

Filter Rows:

Edit:

Export/Import:

Wrap Cell Content:

	customerNumber	customerName	contactLastName	contactFirstName	phone	addressLine1	addressLine2	city
▶	148	Dragon Souvenirs, Ltd.	Natividad	Eric	+65 221 7555	Bronz Sok.	Bronz Apt. 3/6 Tesvikiye	Singapore
	157	Diecast Classics Inc.	Leong	Kelvin	2155551555	7586 Pompton St.	NULL	Allentown
	239	Collectable Mini Designs Co.	Thompson	Valarie	7605558146	361 Furth Circle	NULL	San Diego
	276	Anna's Decorations, Ltd	O'Hara	Anna	02 9936 8555	201 Miller Street	Level 15	North Sydney
	319	Mini Classics	Frick	Steve	9145554562	3758 North Pendale Street	NULL	White Plains
	321	Corporate Gift Ideas	Corporate Gift Ideas Co.	Julie	6505551386	7734 Strong St.	NULL	San Francisco
	458	Corrida Auto Replicas, Ltd	Martin	Martin	(91) 555 22 82	C/ Araquil, 67	NULL	Madrid
	496	Kelly's Gift Shop	Snowden	Tony	+64 9 5555500	Arenales 1938 3'A	NULL	Auckland
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Result Grid

Form Editor

Field Types

customers 20

Apply

Context Help

Snippets

Output

Action Output

#	Time	Action	Message	Duration / Fetch
✖ 23	19:20:35	SELECT contactFirstName FROM customers where contactFirstName REGEXP "je" or where contactFirstNa...	Error Code: 1064. You have an error in your SQL syntax; check the manual that corresponds to your MySQL se...	0.000 sec
✔ 24	19:20:51	SELECT contactFirstName FROM customers where contactFirstName REGEXP "je" or contactFirstName RE...	7 row(s) returned	0.000 sec / 0.000 sec
✔ 25	19:22:07	SELECT contactFirstName FROM customers where contactFirstName REGEXP 'el\$' or contactFirstName RE...	56 row(s) returned	0.000 sec / 0.000 sec
✔ 26	19:23:32	SELECT contactFirstName FROM customers where contactFirstName REGEXP 'bgba' LIMIT 0. 1000	0 row(s) returned	0.000 sec / 0.000 sec
✔ 27	19:23:32	SELECT contactFirstName FROM customers where contactFirstName REGEXP 'bgba' LIMIT 0. 1000	0 row(s) returned	0.000 sec / 0.000 sec
✔ 28	19:29:10	SELECT * FROM customers where creditLimit between 100000 and 110000 LIMIT 0. 1000	8 row(s) returned	0.000 sec / 0.000 sec

Object Info

Session

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Windows Taskbar Icons

7:29 PM
2/28/2022

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

classicmodels

- Tables
- Views
- Stored Procedures
- Functions

sakila

sys

world

Query 1

Limit to 1000 rows

```
1 SELECT *
2 FROM customers
3 ORDER BY creditlimit DESC
4 LIMIT 1,3;
```

Result Grid

Filter Rows: Edit: Export/Import: Wrap Cell Content: Fetch rows:

	customerNumber	customerName	contactLastName	contactFirstName	phone	addressLine1	addressLine2	city	state	postalCode
▶	124	Mini Gifts Distributors Ltd.	Nelson	Susan	4155551450	5677 Strong St.	NULL	San Rafael	CA	97562
	298	Vida Sport, Ltd	Holz	Mihael	0897-034555	Grenzacherweg 237	NULL	Genève	NULL	1203
	151	Muscle Machine Inc	Young	Jeff	2125557413	4092 Furth Circle	Suite 400	NYC	NY	10022
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Result Grid

Form Editor

Field Types

Administration Schemas

Information

Schema: classicmodels

customers 1

Apply Revert

Context Help Snippets

Output

Action Output

#	Time	Action	Message	Duration / Fetch
✖ 1	18:40:45	select * FROM customers order by creditlimit desc limit 1,3	Error Code: 1046. No database selected Select the default DB to be used by double-clicking its name in the SCH...	0.000 sec
✖ 2	18:41:13	select * FROM customers order by creditlimit desc limit 1,3	Error Code: 1046. No database selected Select the default DB to be used by double-clicking its name in the SCH...	0.000 sec
✖ 3	18:43:35	SELECT * FROM customers ORDER BY creditlimit DESC LIMIT 1,3	Error Code: 1046. No database selected Select the default DB to be used by double-clicking its name in the SCH...	0.000 sec
✖ 4	18:44:51	SELECT * FROM customers ORDER BY creditlimit DESC LIMIT 1,3	Error Code: 1046. No database selected Select the default DB to be used by double-clicking its name in the SCH...	0.000 sec
✔ 5	18:44:55	SELECT * FROM customers ORDER BY creditlimit DESC LIMIT 1,3	3 row(s) returned	0.000 sec / 0.000 sec

Object Info Session

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7:02 PM
2/28/2022