



GraphQL Schema Language Cheat Sheet

The definitive guide to express your GraphQL schema succinctly

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What is GraphQL Schema Language?

It is a shorthand notation to succinctly express the basic shape of your GraphQL schema and its type system.

What does it look like?

Below is an example of a typical GraphQL schema expressed in shorthand.

```
# define Entity interface
interface Entity {
  id: ID!
  name: String
}

# define custom Url scalar
scalar Url

# User type implements Entity interface
type User implements Entity {
  id: ID!
  name: String
  age: Int
  balance: Float
  is_active: Boolean
  friends: [User]!
  homepage: Url
}

# root Query type
type Query {
  me: User
  friends(limit: Int = 10): [User]!
}

# custom complex input type
input ListUsersInput {
  limit: Int
  since_id: ID
}

# root mutation type
type Mutation {
  users(params: ListUsersInput): [User]!
}

# GraphQL root schema type
schema {
  query: Query
  mutation: Mutation
  subscription: ...
}
```

Schema

schema	GraphQL schema definition
query	A read-only fetch operation
mutation	A write followed by fetch operation
subscription	A subscription operation (experimental)

Built-in Scalar Types

Int	Int
Float	Float
String	String
Boolean	Boolean
ID	ID

Type Definitions

scalar	Scalar Type
type	Object Type
interface	Interface Type
union	Union Type
enum	Enum Type
input	Input Object Type

Type Modifiers

String	Nullable String
String!	Non-null String
[String]	List of nullable Strings
[String]!	Non-null list of nullable Strings
[String!]!	Non-null list of non-null Strings

Input Arguments

Basic Input

```
type Query {
  users(limit: Int): [User]
}
```

Input with default value

```
type Query {
  users(limit: Int = 10): [User]
}
```

Input with multiple arguments

```
type Query {
  users(limit: Int, sort: String): [User]
}
```

Input with multiple arguments and default values

```
type Query {
  users(limit: Int = 10, sort: String): [User]
}

type Query {
  users(limit: Int, sort: String = "asc"): [User]
}

type Query {
  users(limit: Int = 10, sort: String = "asc"): [User]
}
```

Input Types

```
input ListUsersInput {
  limit: Int
  since_id: ID
}

type Mutation {
  users(params: ListUsersInput): [User]!
}
```

Custom Scalars

```
scalar Url

type User {
  name: String
  homepage: Url
}
```

Interfaces

Object implementing one or more Interfaces

```
interface Foo {
  is_foo: Boolean
}

interface Goo {
  is_goo: Boolean
}

type Bar implements Foo {
  is_foo: Boolean
  is_bar: Boolean
}

type Baz implements Foo, Goo {
  is_foo: Boolean
  is_goo: Boolean
  is_baz: Boolean
}
```

Unions

Union of one or more Objects

```
type Foo {
  name: String
}

type Bar {
  is_bar: String
}

union SingleUnion = Foo
union MultipleUnion = Foo | Bar

type Root {
  single: SingleUnion
  multiple: MultipleUnion
}
```

Enums

```
enum USER_STATE {
  NOT_FOUND
  ACTIVE
  INACTIVE
  SUSPENDED
}

type Root {
  stateForUser(userID: ID!): USER_STATE!
  users(state: USER_STATE, limit: Int = 10): [User]
}
```