GetCircuitQubits

```
SetDirectory @ NotebookDirectory[];
Import["../Link/QuESTlink.m"];
```

Doc

```
? GetCircuitQubits
```

Symbol

GetCircuitQubits[circuit] returns a sorted list of all qubit indices
featured (i.e. controlled upon, or targeted by gates) in the given circuit.

Tests

```
GetCircuitQubits @ Circuit[ X_0 C_1[Rz_3[x]]]
```

```
{0, 1, 3}
```

Gate coverage

```
? QuEST`Gate`*
```

QuEST`Gate`

Damp	H	Matr	Ry	U
Deph	Id	P	Rz	UNonNorm
Depol	Kraus	Ph	S	X
Fac	KrausNonTP	R	SWAP	Y
G	M	Rx	T	Z

```
GetCircuitQubits @ {Damp_0, Deph_1,2, Depol_3,4}
```

```
{0, 1, 2, 3, 4}
```

```
GetCircuitQubits @ {Fac[x], G[x]}
```

```
{}
```

```
GetCircuitQubits @ {H_0, Id_1,2, Kraus_3,4[x], KrausNonTP_5,6}
```

```
{0, 1, 2, 3, 4, 5, 6}
```

```
GetCircuitQubits @ {M0, Matr1,2[m], P3,4[0], Ph5,6,7[0]}
```

```
{0, 1, 2, 3, 4, 5, 6, 7}
```

```
GetCircuitQubits @ {R[π, X0], R[π, X1 Y2 Z3]}
```

```
{0, 1, 2, 3}
```

```
GetCircuitQubits @ {Rx0[x], Ry1,2[y], Rz3,4,5[z]}
```

```
{0, 1, 2, 3, 4, 5}
```

```
GetCircuitQubits @ {S0, SWAP1,2, T3, U4,5[m], UNonNorm6,7[m]}
```

```
{0, 1, 2, 3, 4, 5, 6, 7}
```

```
GetCircuitQubits @ {X0, Y1, Z2}
```

```
{0, 1, 2}
```

Controls

```
GetCircuitQubits @ C2,5 @ R[π, X1 Z10]
```

```
{1, 2, 5, 10}
```

Edge cases

```
GetCircuitQubits[Poop0]
```

```
{0}
```

```
GetCircuitQubits[G[x]]
```

```
{}
```

Errors

```
GetCircuitQubits[ Eh ]
```

```
GetCircuitQubits: Invalid arguments. See ?GetCircuitQubits
```

```
$Failed
```

```
GetCircuitQubits[ Baheh ]
```

```
GetCircuitQubits: Invalid arguments. See ?GetCircuitQubits
```

```
$Failed
```