

QuantumCircuit.copy(name=?) allows for any object to be used as name

#10487

EditNew issue

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ANONYMOUS AUTHOR opened this issue last week · 6 comments · May be fixed by #10521

ANONYMOUS AUTHOR commented last week

Environment

- **Qiskit Terra version:** 0.43.1 meta package, terra 0.24.1
- **Python version:** 3.10
- **Operating system:** docker continuumio/miniconda3

What is happening?

Creating a circuit via copy allows to give an invalid name (not a string), that is then checked only when the circuit is transpiled.
In this case the `copy()` api raises no error when passing a circuit as name (see API: [copy](#))

How can we reproduce the issue?

Run this python script:

```
from qiskit import QuantumCircuit
from qiskit.compiler import transpile
qc_output = QuantumCircuit(2, 2)
input_circuit = QuantumCircuit(2, 2)
input_circuit.measure([0, 1], [0, 1])
qc_output = qc_output.compose(input_circuit, qubits=range(2))
final_circuit = qc_output.copy(qc_output)
final_circuit.measure([0, 1], [0, 1])
print(final_circuit.draw())

print("Circuit name: ", final_circuit.name)

transpile(final_circuit, optimization_level=0)
```

Produces this output and error:

```
q_0: ┌───┐ ┌───┐
      │ M │ │ M │
q_1: ┌───┐ ┌───┐
      │ M │ │ M │
c: 2/ ───┴───┴───
    0 1 0 1
Circuit name:
q_0: ┌───┐
      │ M │
q_1: ┌───┐
      │ M │
c: 2/ ───┴───
    0 1
Traceback (most recent call last):
  File "myfile.py", line 13, in <module>
    transpile(final_circuit, optimization_level=0)
  File ".../qiskit/compiler/transpiler.py", line 380, in transpile
    _serial_transpile_circuit
  File ".../qiskit/compiler/transpiler.py", line 462, in _serial_transpile_circuit
    result = pass_manager.run
  File ".../qiskit/transpiler/passmanager.py", line 231, in run
    return self._run_single_c
  File ".../qiskit/transpiler/passmanager.py", line 292, in _run_single_circuit
    result = running_passmana
    back=callback)
  File ".../qiskit/transpiler/runnin
    circuit = QuantumCircuit(
    raise CircuitError(
  File ".../qiskit/converters/dag_to_circuit.py", line 58, in dag_to_circuit
    circuit = QuantumCircuit(
  File ".../qiskit/circuit/quantumcircuit.py", line 260, in __init__
    raise CircuitError(
qiskit.circuit.exceptions.CircuitError: 'The circuit name should be a strin
g (or None to auto-generate a name).'
```

What should happen?

I would expect the `copy` method to check the name of the circuit, and raise an error if it is not a string, whereas now it is allowed without any check (see [here](#)).

Even this is allowed:

```
...
class AnvObject(object):
```

Assignees

Abhiraj-Shrotriya

Labels

bug good first issue

Projects

None yet

Milestone

No milestone

Development

Successfully merging a pull request may close this issue.

Implemented a type check in copy method o...
Abhiraj-Shrotriya/qiskit-terra

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```
def __init__(self, field):
    self.field = field
    new_circuit = qc_output.copy(name=AnyObject("new_circuit"))
    print(new_circuit.name)
```

Outputting:

```
...
<__main__.AnyObject object at 0x7f7c98809ab0>
```

Any suggestions?

I think the `copy` method should check the name of the circuit, and raise an error if it is not a string, so that the error is more precise on the line of the `copy()` call rather than the `transpile()`.

+ Add tasklist 😊

 **ANONYMOUS AUTHOR** added the **bug** label last week

jakelishman commented last week

Member ...

This is somewhat a regular part of Python programming; the language doesn't enforce type checking. You'll *always* be able to put badly typed objects into Python classes, since the language fundamentally doesn't have access control.

That said, in this particular case, we *do* do the manual check in `QuantumCircuit.__init__`, it's not very costly to do, and doesn't have greater performance implications, so it's reasonable that we could do the check in `QuantumCircuit.copy` as well.



 **jakelishman** added the **good first issue** label last week

Abhiraj-Shrotriya commented last week

...

@**jakelishman** @**ANONYMOUS AUTHOR**

I would like to solve this issue and contribute to Qiskit. Can you please assign me?
Thank you



1

 **jakelishman** assigned **Abhiraj-Shrotriya** last week

Abhiraj-Shrotriya commented last week • edited

...

running `tox -elint-incr` on my repository gives the following error:

```
ERROR: sympy is imported via qiskit.circuit.quantumcircuit
```

But sympy is not being imported. **Why is this error showing up?**

And by the way, I have fixed this issue and am in the testing phase. Will make a pull request once the above error gets solved.

EDIT - I think it is showing up because `qiskit/circuit/parameter.py` is importing sympy



TsafrirA commented last week

Contributor ...





@**Abhiraj-Shrotriya**

For various reasons, Sympy is optionally imported. Tox flags that as an error, but this is not the case in the CI tests. If this is the only error you are facing, you should pass the CI tests.



1

 **kdk** added this to **Contributor Monitoring** 5 days ago

-  **github-project-automation** (bot) moved this to **Tagged but unassigned** in **Contributor Monitoring** 5 days ago
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-  This was referenced 5 days ago

Add a type check for copy method of QuantumCircuit class #10508

 Closed

Implemented a type check in copy method of QuantumCircuit class #10513

 Closed

Abhiraj-Shrotriya commented 4 days ago

...

Updating my branch to the latest version of Qiskit:main breaks my Pull Request. The CI tests (which of course take time) need to rerun. Some of these re-tests fail which passed in the original run.

Will not updating my branch affect merging process?



jakelishman commented 4 days ago

Member ...

You don't need to update your branch to `main` unless there are merge conflicts. We'll handle that automatically during the final merge window.



1

 **Abhiraj-Shrotriya** linked a pull request 4 days ago that will close this issue

Implemented a type check in copy method of QuantumCircuit class #10521

 Open

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