Identity Gate new 50 to 2000

October 22, 2021

```python
[1]: import numpy as np

     # Importing standard Qiskit libraries
     from qiskit import QuantumCircuit, transpile, Aer, IBMQ
     from qiskit.tools.jupyter import *
     from qiskit.visualization import *
     from ibm_quantum_widgets import *
     from qiskit.providers.aer import QasmSimulator

     # Loading your IBM Quantum account(s)
     provider = IBMQ.load_account()
```

```python
[4]: from qiskit.tools.monitor import backend_monitor
     from qiskit import *
     from qiskit.visualization import plot_histogram
     from random import randrange, seed, sample
     from random import choice
     n=40
     m=0
     for i in range(n):
         m=m+50
         print("No of identity Gate:",m)
         qc= QuantumCircuit(1,1)
         qc.x(0)
         qc.barrier(0)
         #m = int(input('Enter the length of Identity Gate Between Quantum Channel:␣
     ↪'))

         for i in range(m):
             qc.id(0)
             qc.barrier()
         qc.measure(range(1), range(1))
         #%matplotlib inline
         #qc.draw(output='mpl')
         #print(qc)
         from qiskit.tools.monitor import backend_monitor
         #IBMQ.load_account()
```

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```python
    provider = IBMQ.get_provider(hub='ibm-q')
    device = provider.get_backend('ibmq_armonk')
    job = execute(qc, backend=device, shots=1000)
    #print(job.job_id())
    from qiskit.tools.monitor import job_monitor
    job_monitor(job)
    result = job.result()
    #plot_histogram(device_result.get_counts(qc))
    counts = result.get_counts(qc)
    #plot_histogram(counts)
    bits = (result.get_counts(qc))
    print(bits)
```

```
No of identity Gate: 50
Job Status: job has successfully run
{'0': 107, '1': 893}
No of identity Gate: 100
Job Status: job has successfully run
{'0': 83, '1': 917}
No of identity Gate: 150
Job Status: job has successfully run
{'0': 109, '1': 891}
No of identity Gate: 200
Job Status: job has successfully run
{'0': 94, '1': 906}
No of identity Gate: 250
Job Status: job has successfully run
{'0': 112, '1': 888}
No of identity Gate: 300
Job Status: job has successfully run
{'0': 89, '1': 911}
No of identity Gate: 350
Job Status: job has successfully run
{'0': 89, '1': 911}
No of identity Gate: 400
Job Status: job has successfully run
{'0': 77, '1': 923}
No of identity Gate: 450
Job Status: job has successfully run
{'0': 84, '1': 916}
No of identity Gate: 500
Job Status: job has successfully run
{'0': 87, '1': 913}
No of identity Gate: 550
Job Status: job has successfully run
{'0': 98, '1': 902}
No of identity Gate: 600
```

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Job Status: job has successfully run
{'0': 99, '1': 901}
No of identity Gate: 650
Job Status: job has successfully run
{'0': 93, '1': 907}
No of identity Gate: 700
Job Status: job has successfully run
{'0': 84, '1': 916}
No of identity Gate: 750
Job Status: job has successfully run
{'0': 78, '1': 922}
No of identity Gate: 800
Job Status: job has successfully run
{'0': 89, '1': 911}
No of identity Gate: 850
Job Status: job has successfully run
{'0': 95, '1': 905}
No of identity Gate: 900
Job Status: job has successfully run
{'0': 80, '1': 920}
No of identity Gate: 950
Job Status: job has successfully run
{'0': 86, '1': 914}
No of identity Gate: 1000
Job Status: job has successfully run
{'0': 85, '1': 915}
No of identity Gate: 1050
Job Status: job has successfully run
{'0': 97, '1': 903}
No of identity Gate: 1100
Job Status: job has successfully run
{'0': 122, '1': 878}
No of identity Gate: 1150
Job Status: job has successfully run
{'0': 98, '1': 902}
No of identity Gate: 1200
Job Status: job has successfully run
{'0': 96, '1': 904}
No of identity Gate: 1250
Job Status: job has successfully run
{'0': 94, '1': 906}
No of identity Gate: 1300
Job Status: job has successfully run
{'0': 101, '1': 899}
No of identity Gate: 1350
Job Status: job has successfully run
{'0': 118, '1': 882}
No of identity Gate: 1400
```

```
Job Status: job has successfully run
{'0': 92, '1': 908}
No of identity Gate: 1450
Job Status: job has successfully run
{'0': 85, '1': 915}
No of identity Gate: 1500
Job Status: job has successfully run
{'0': 101, '1': 899}
No of identity Gate: 1550
Job Status: job has successfully run
{'0': 105, '1': 895}
No of identity Gate: 1600
Job Status: job has successfully run
{'0': 90, '1': 910}
No of identity Gate: 1650
Job Status: job has successfully run
{'0': 95, '1': 905}
No of identity Gate: 1700
Job Status: job has successfully run
{'0': 75, '1': 925}
No of identity Gate: 1750
Job Status: job has successfully run
{'0': 87, '1': 913}
No of identity Gate: 1800
Job Status: job has successfully run
{'0': 101, '1': 899}
No of identity Gate: 1850
Job Status: job has successfully run
{'0': 99, '1': 901}
No of identity Gate: 1900
Job Status: job has successfully run
{'0': 97, '1': 903}
No of identity Gate: 1950
Job Status: job has successfully run
{'0': 78, '1': 922}
No of identity Gate: 2000
Job Status: job has successfully run
{'0': 74, '1': 926}
```

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