

S Q C S

Sungkyunkwan university Quantum Computing & Science

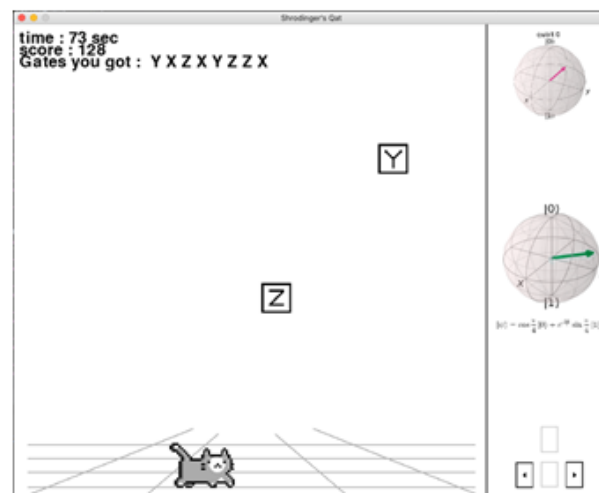
Inspiration

“Quantization of SUBERUNKER”



Simple Classics games

“Avoid my poop!”



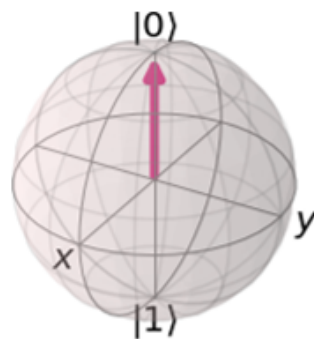
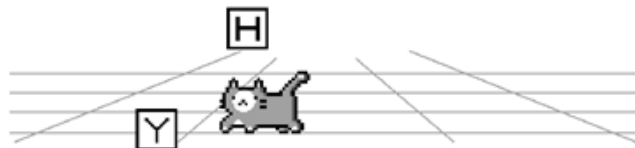
Simple Quantum games

“Get proper Q-gates!”

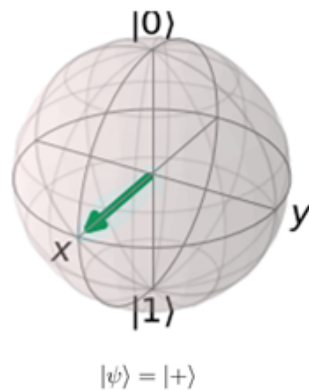
How to play

“Get proper Q gates to make target states”

time : 41 sec
score : 62
Gates you got : H Y Z Z H T S Z S Z Y



“ Present states ”

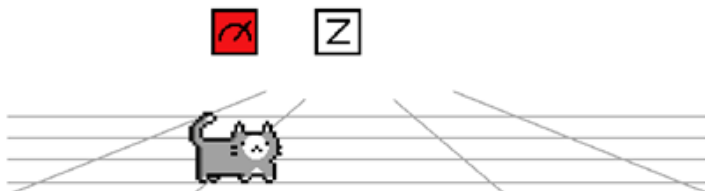


“ Target states ”

How to play

“To 0 or not To 0 that is the problem”

time : 59 sec
score : 92
Gates you got :



$$| \text{cat} \rangle + | \text{cat} \rangle$$



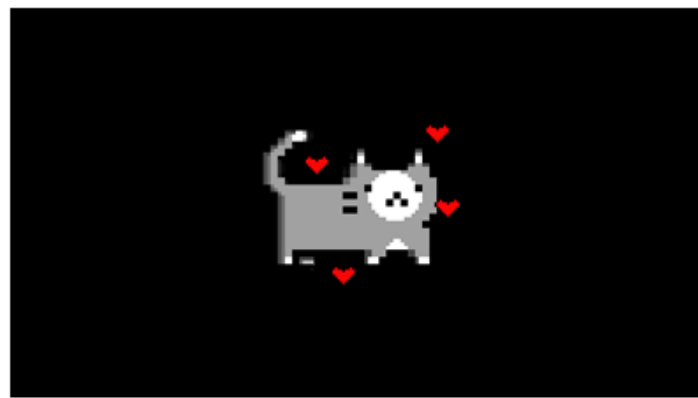
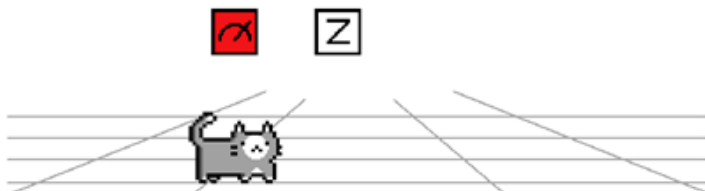
Press any key

“Superposed”

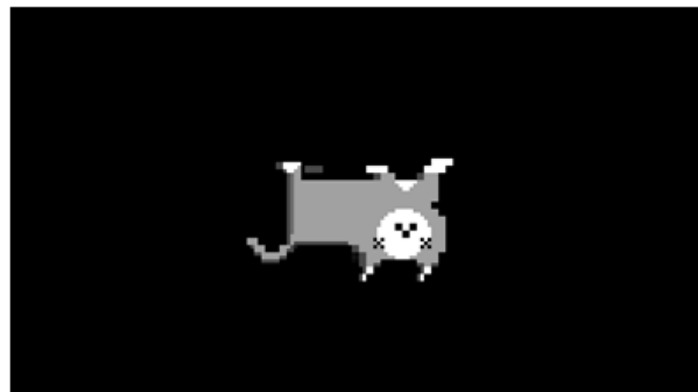
How to play

“To 0 or not To 0 that is the problem”

time : 59 sec
score : 92
Gates you got :

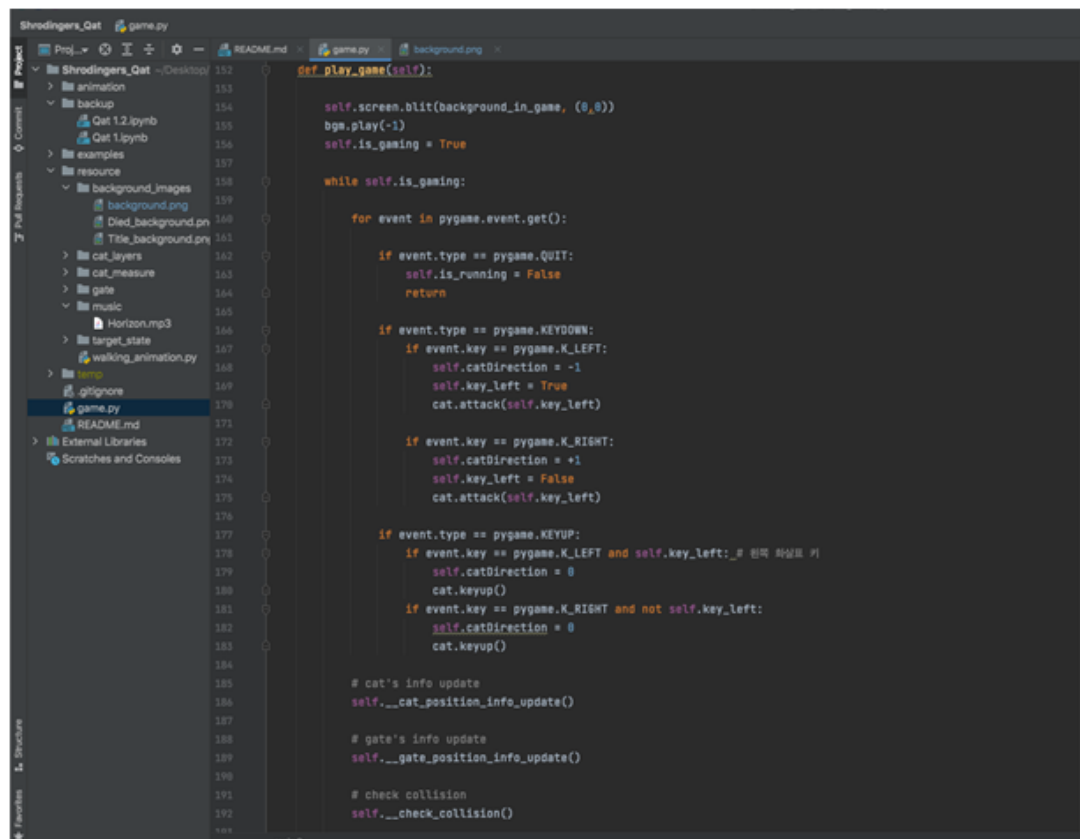


“Collapsed to one of the states”



Materialization

“pygame”

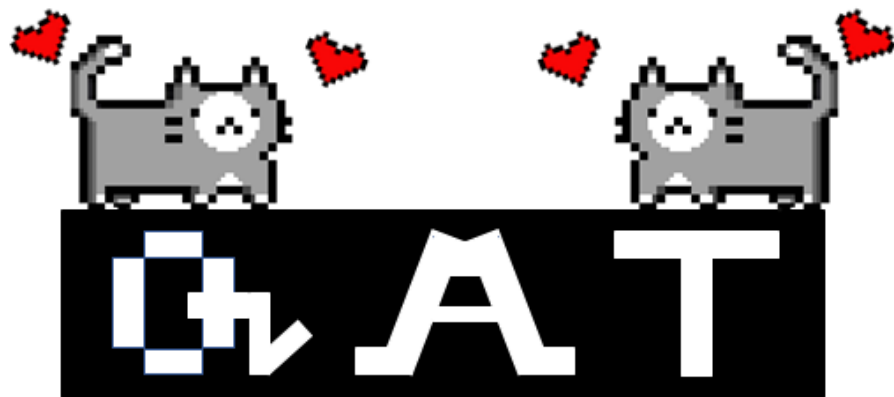


Materialization

“Qiskit”

```
if gate_num == 2:
    if self.gate2_kind == "X":
        self.qc.x(0)
    if self.gate2_kind == "Y":
        self.qc.y(0)
    if self.gate2_kind == "Z":
        self.qc.z(0)
    if self.gate2_kind == "H":
        self.qc.h(0)
    if self.gate2_kind == "S":
        self.qc.s(0)
    if self.gate2_kind == "T":
        self.qc.t(0)
    if self.gate2_kind == "S+":
        self.qc.sdg(0)
    if self.gate2_kind == "T+":
        self.qc.tdg(0)

# print(self.gate_string)
# print(self.qc)
# print(self.gate1_kind, self.gate2_kind)
qc_init = self.qc.copy()
qc_init.save_statevector()
statevector = sim.run(qc_init).result().get_statevector()
```



Thanks