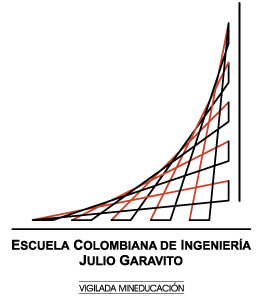
**LABORATORIO CNYT**



**IVAN CAMILO RINCON SAAVEDRA**

**ESCUELA COLOMBIANA DE INGENIERÍA JULIO GARAVITO**

**BOGOTÁ D.C. 27 DE ABRIL 2020**

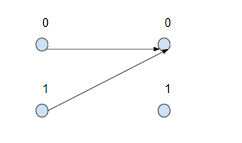
**Implementación de Algoritmo de Deutsch y Deutsch-Jozsa**

**1. Implemente las 4 funciones posibles de {0,1} a {0,1} usando el computador cuántico de IBM.**

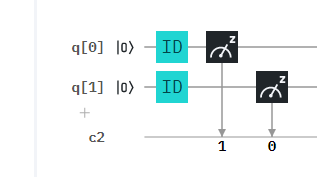
* **Dibujo de función**
* **Matriz correspondiente**
* **Circuito correspondiente**
* **Resultados de las 4 pruebas**

1)

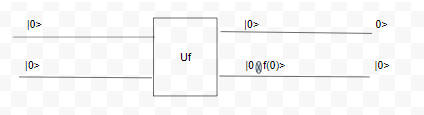
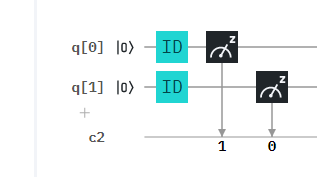
Dibujo de función

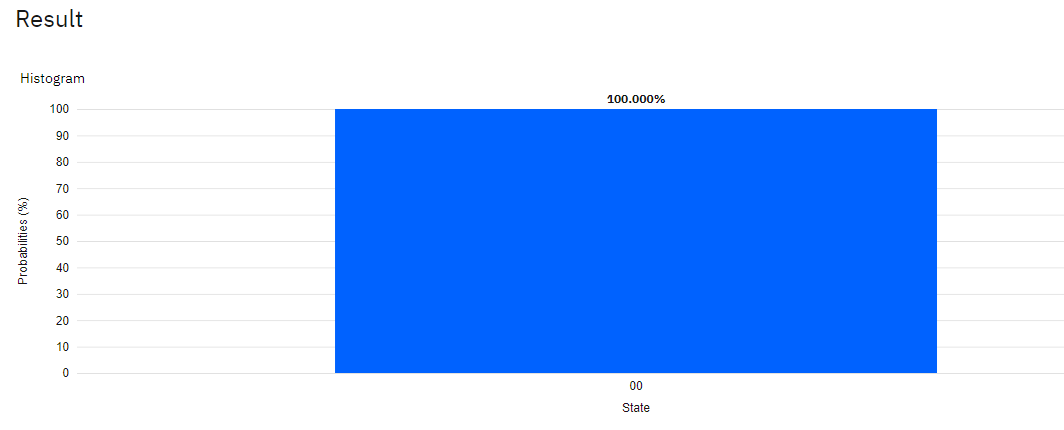


Circuito

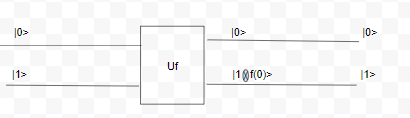


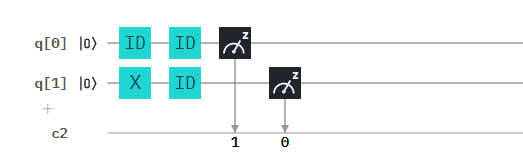
Para 0,0

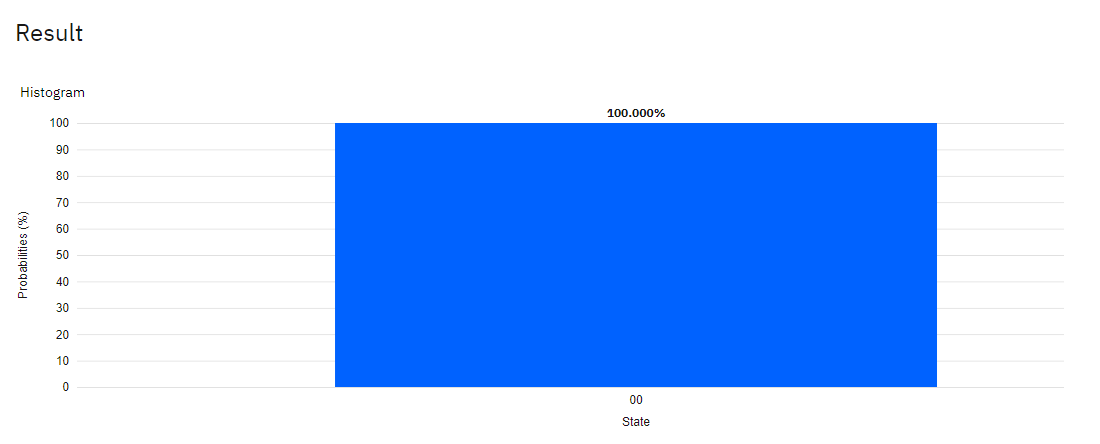




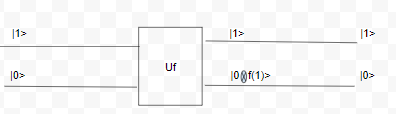
Para 0,1

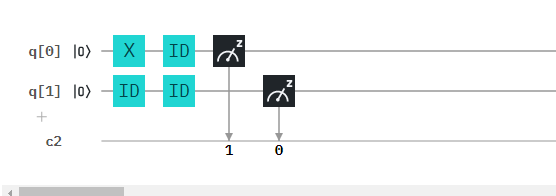


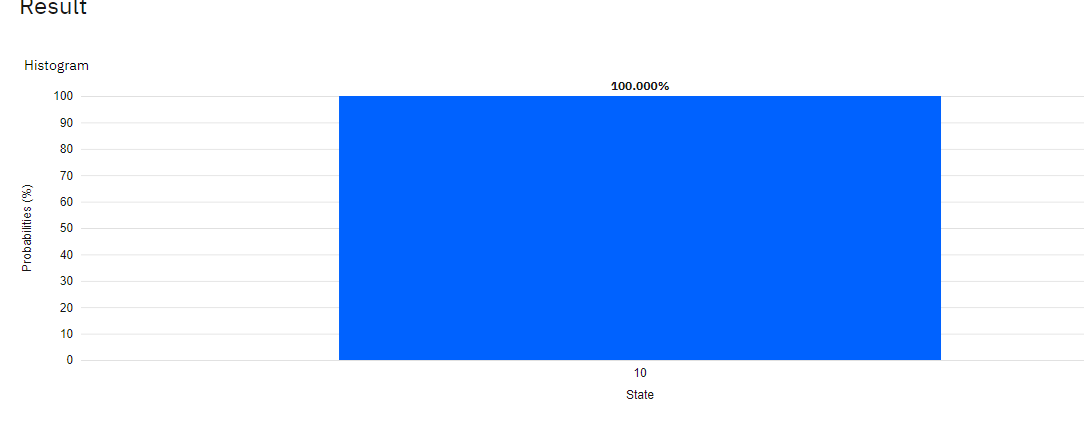




Para 1,0

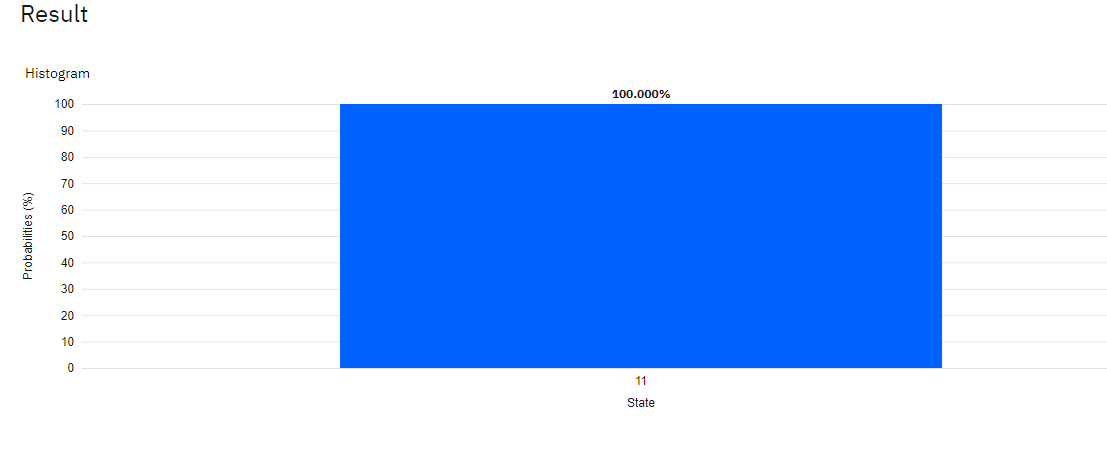
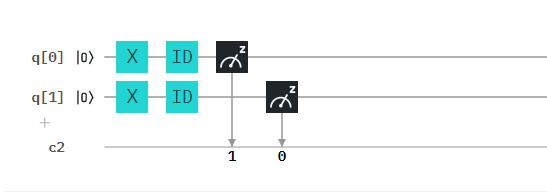




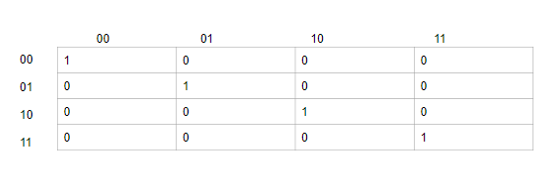


Para 1,1



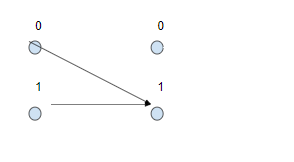


* Matriz correspondiente

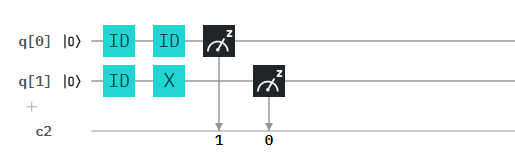


2)

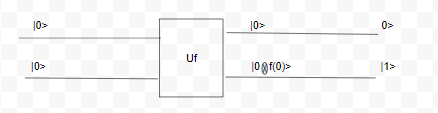
Dibujo de función

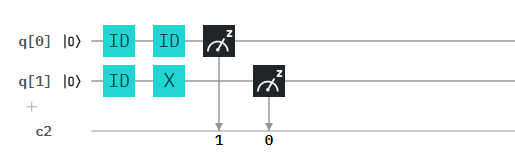


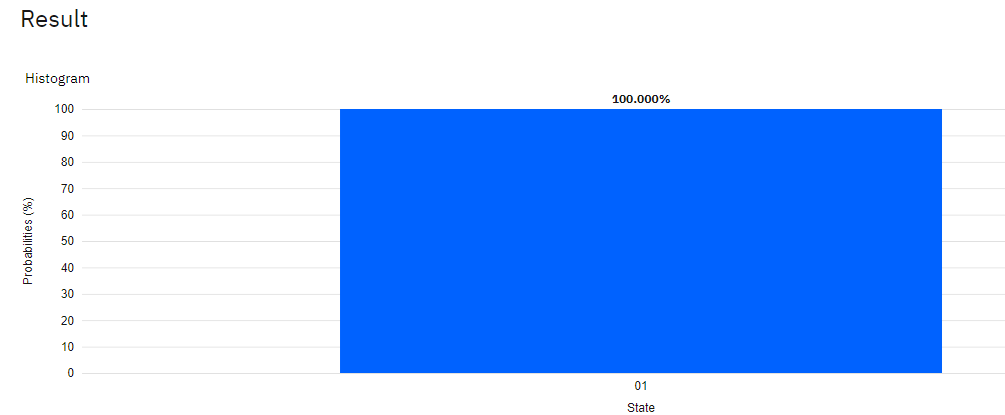
Circuito correspondiente



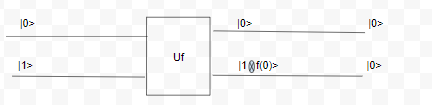
Para 0, 0



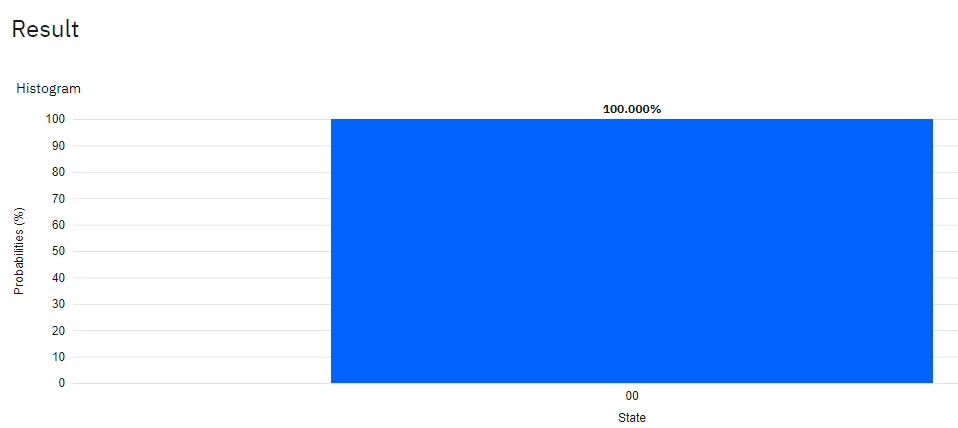




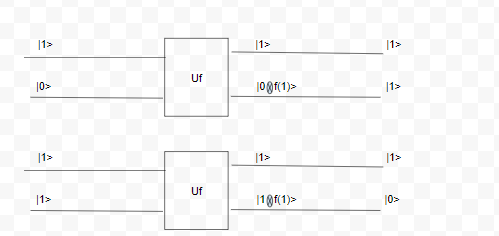
Para 0,1

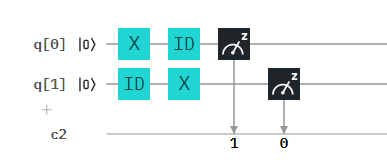


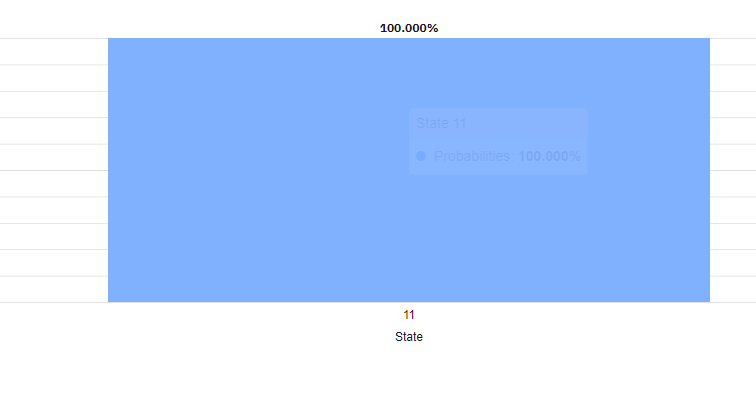




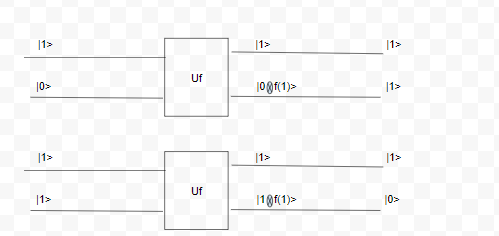
Para 1,0

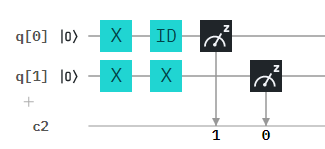


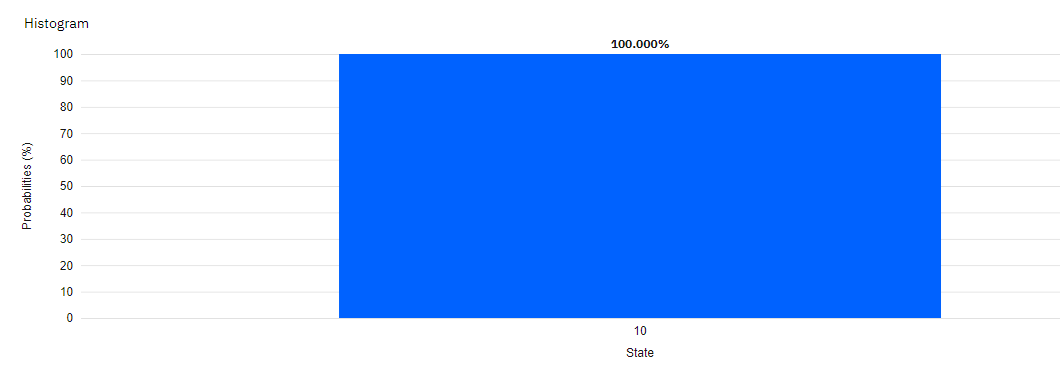




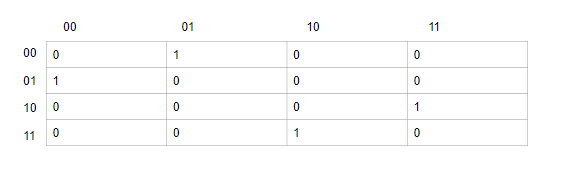
Para 1,1





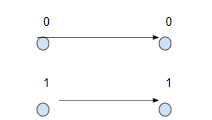


Matriz correspondiente

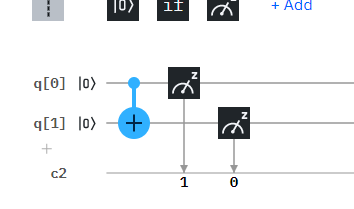


3)

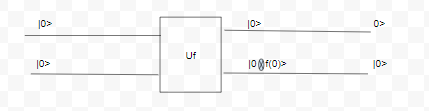
Dibujo de función

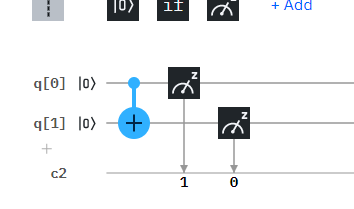


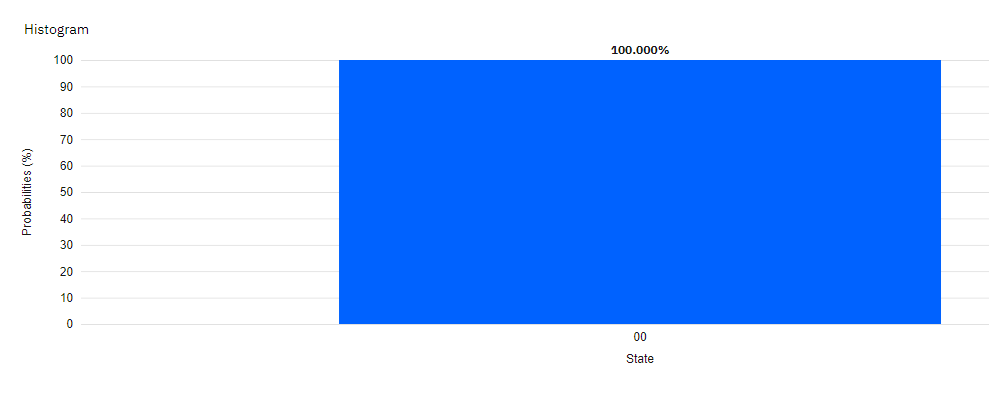
Circuito correspondiente



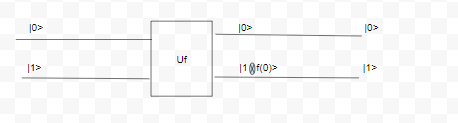
Para 0, 0

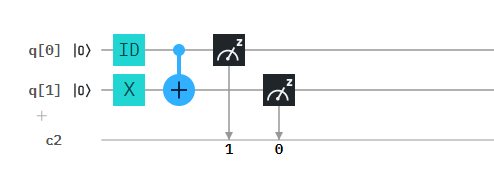


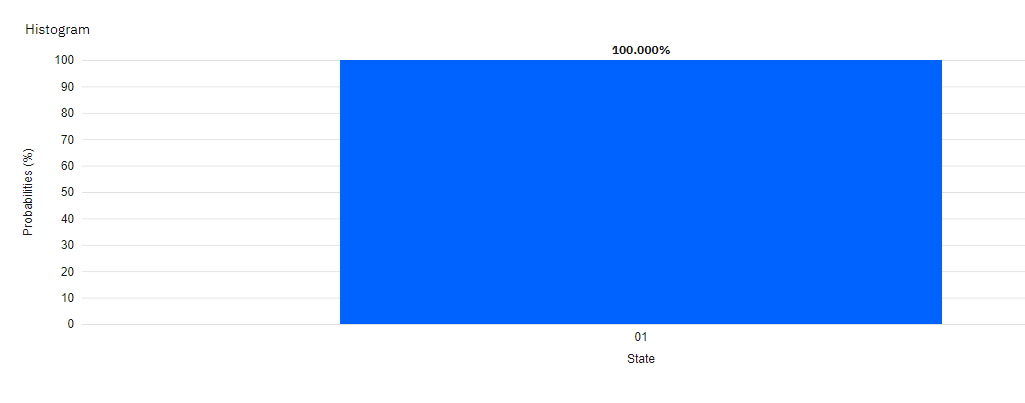




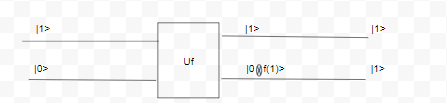
Para 0,1

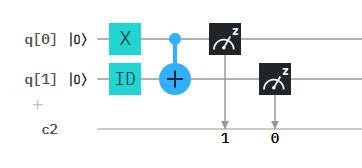


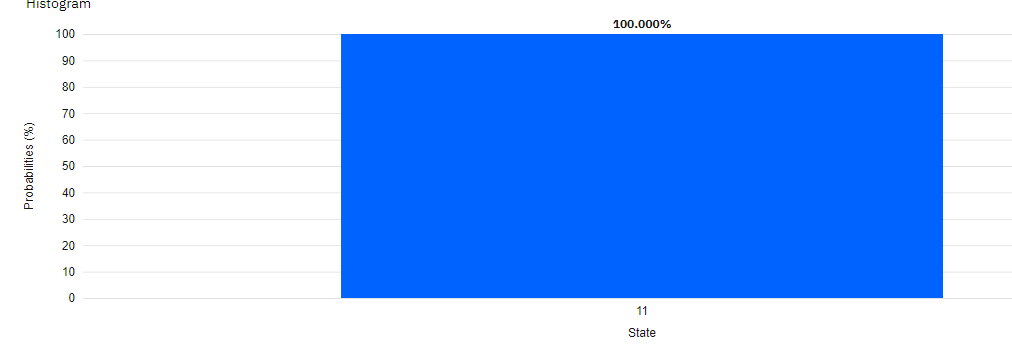




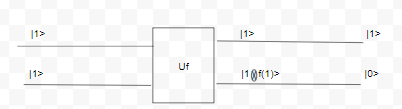
Para 1,0

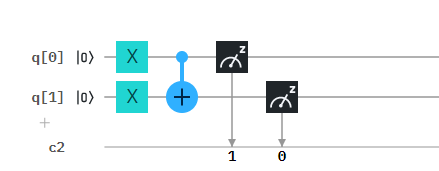


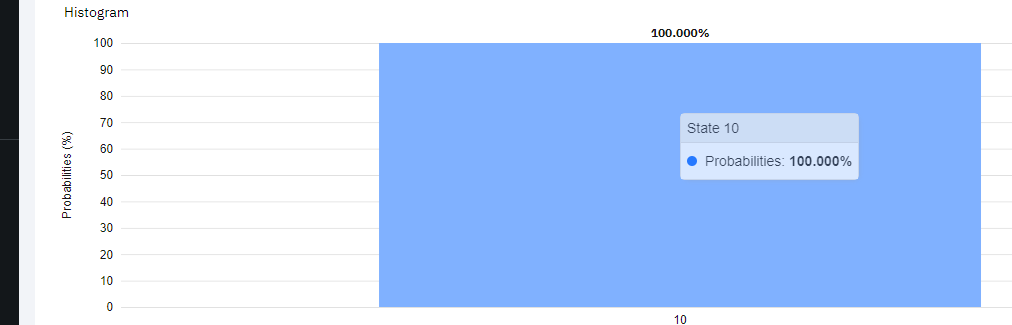




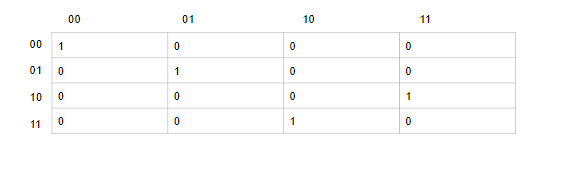
Para 1,1



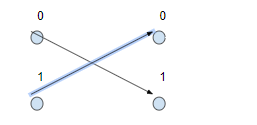




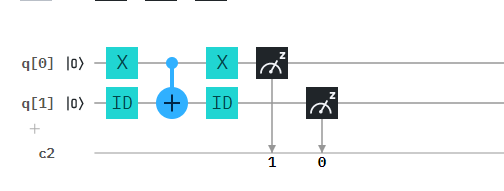
Matriz correspondiente



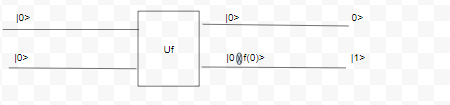
4) Dibujo de función

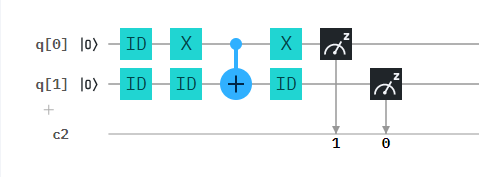


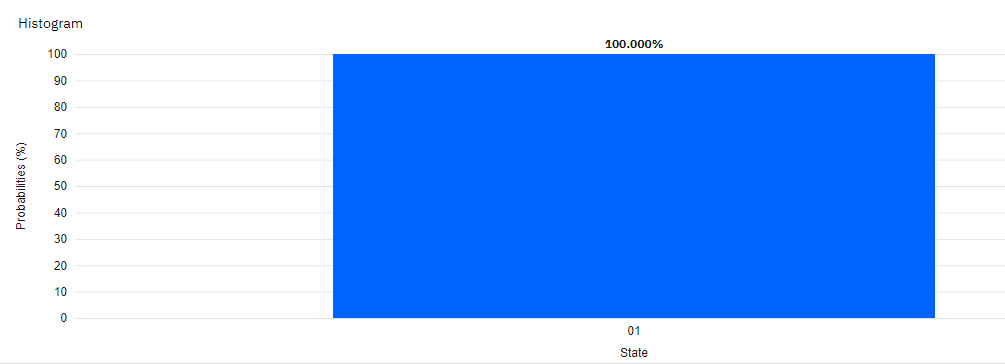
Circuito correspondiente



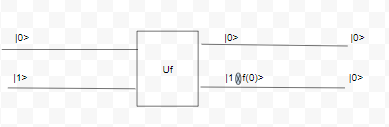
Para 0, 0

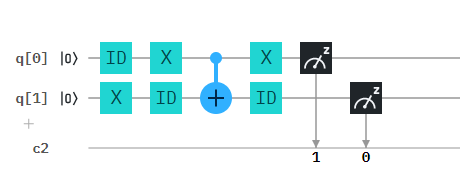


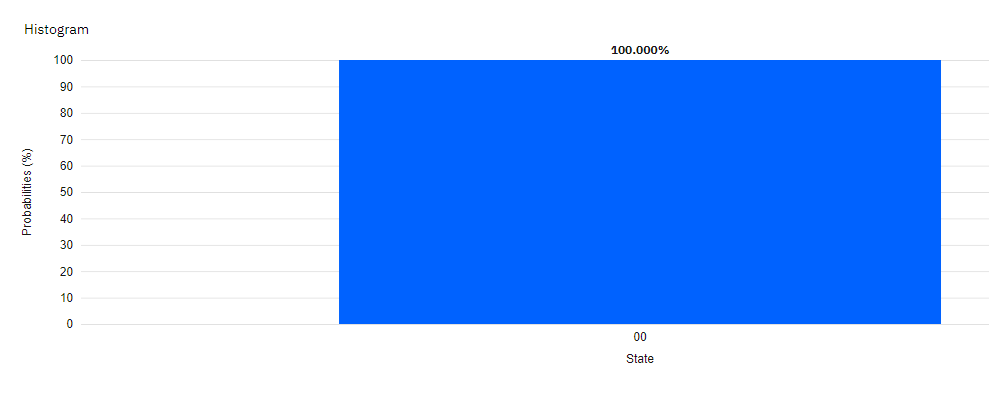




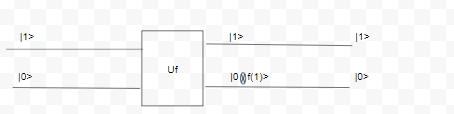
Para 0,1

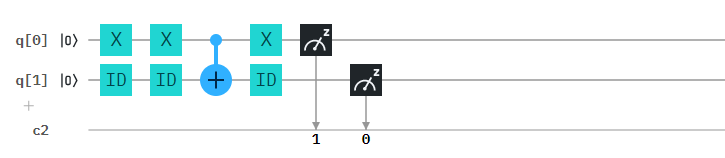


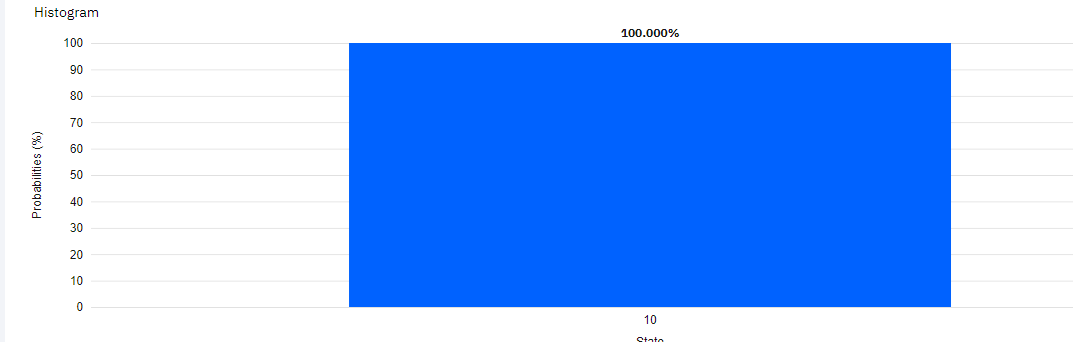




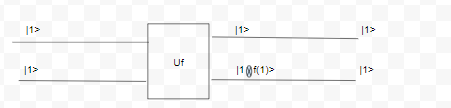
Para 1,0

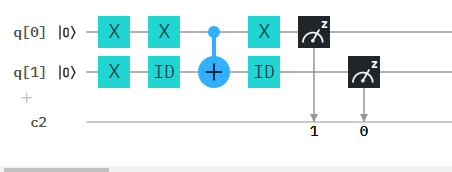


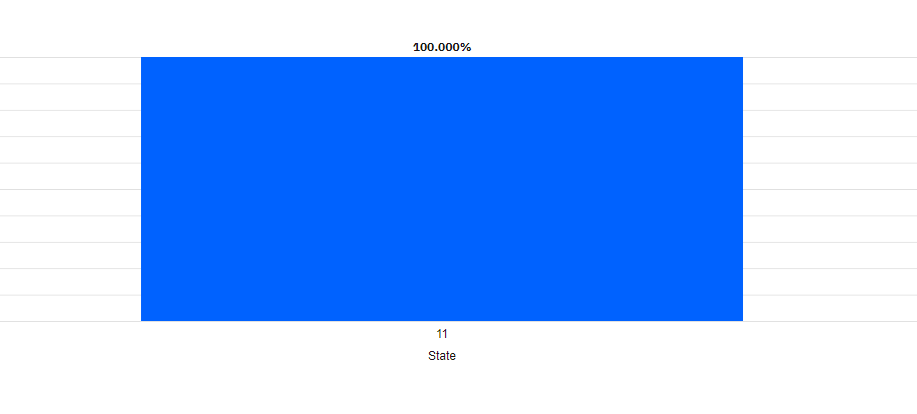




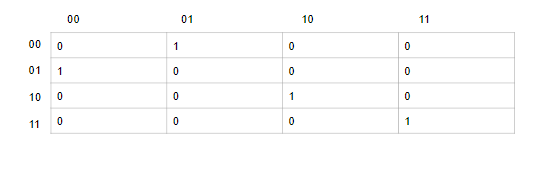
Para 1,1



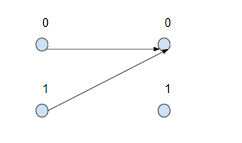




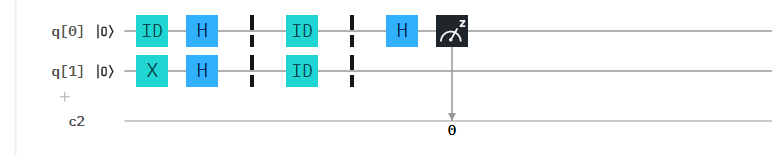
Matriz correspondiente

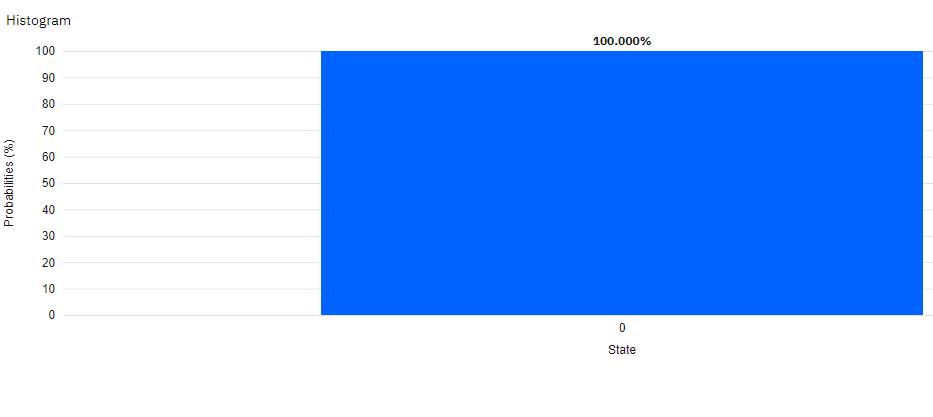


**2. Verifique que el algoritmo de Deutsch funciona para comprobar cuáles de estas funciones son balanceadas o constantes.**

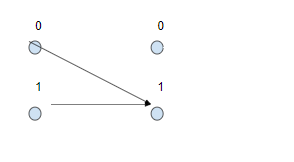
**Primera función**

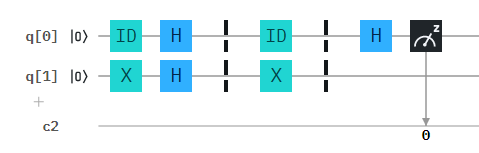
* Circuito

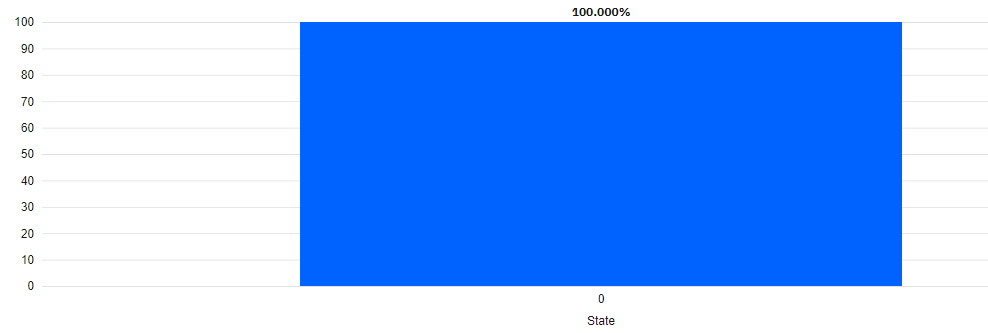


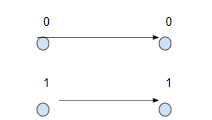
* Resultados
* 

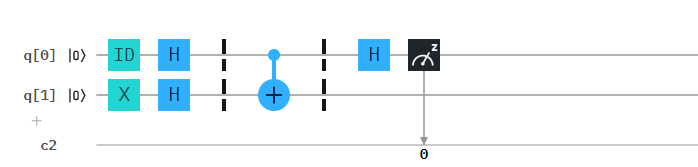
**Segunda función**

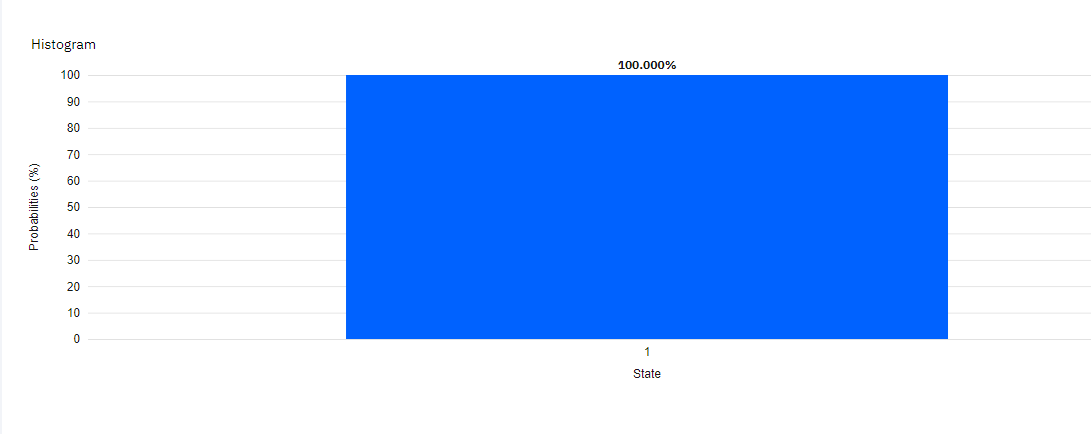


* Circuito
* 
* Resultados

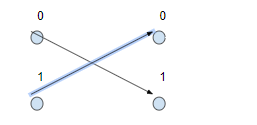


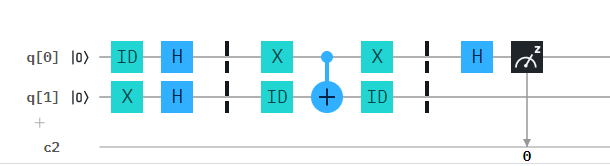
**Tercera función**

* Circuito
* 
* Resultados



**Cuarta función**

* Circuito



* Resultados

