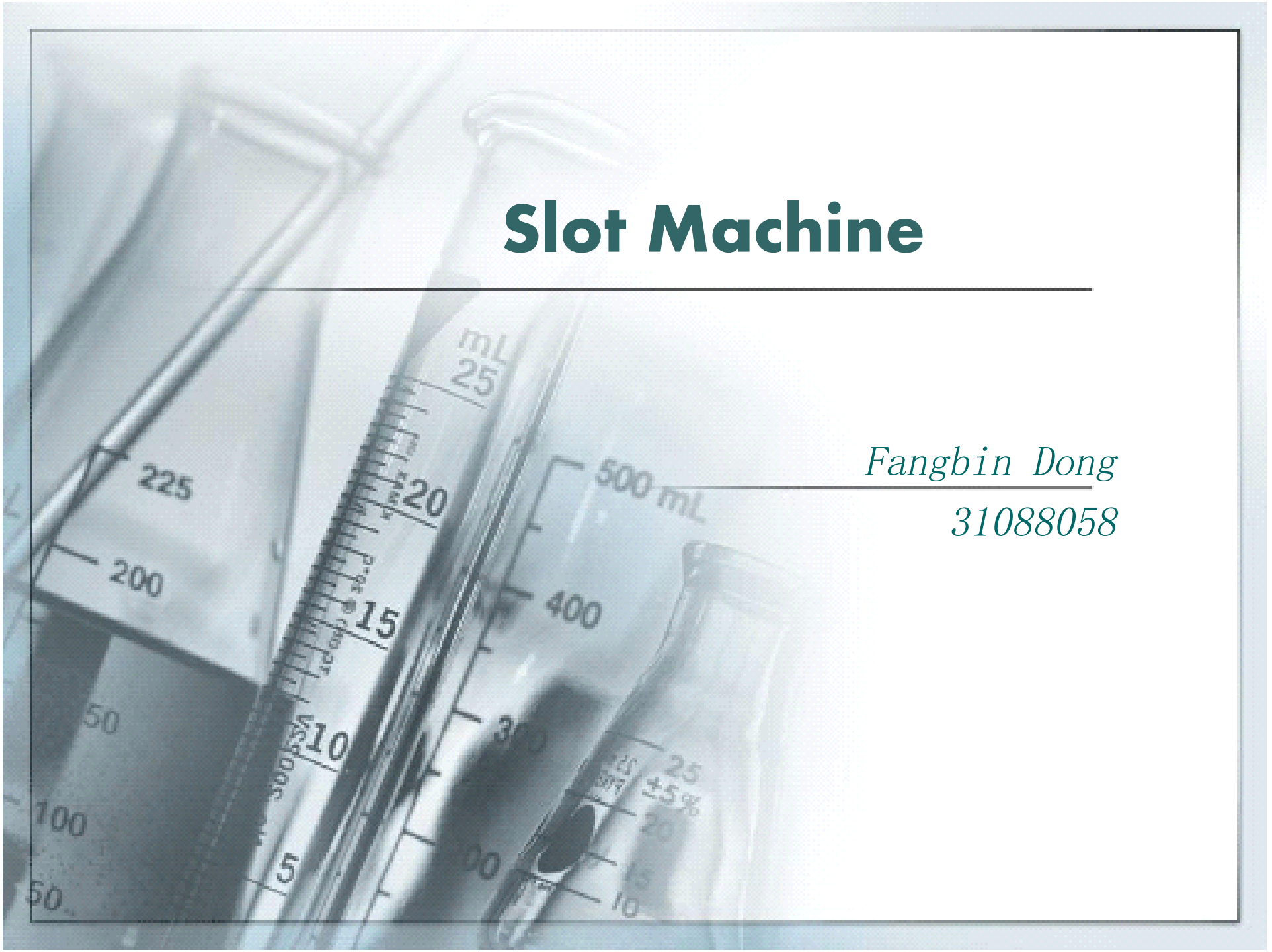
Slot Machine

Fangbin Dong

31088058



Whate is a slot machine?



How to design it with DE2-70

- 1.Use three numbers
- 2.Each number changes in different frequency
- 3.When stop signal received, each number
- will slow down in different paces
- 4.After slowing down, every number will stop one by one.
- 5.Some fancy effects

Most important component

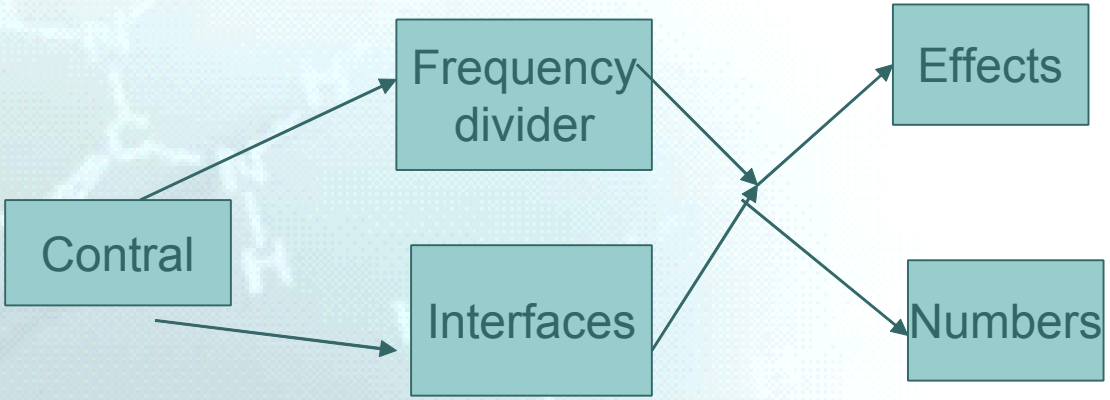
- Frequency divider
- 1.3 different numbers use 3 different frequency dividers with different periods
- 2.After stop signal received, the periods of frequency dividers will change which cause the change of the frequency
- 3.When the frequency equals a certain number, it will stop

Other effects

- Different effects for different stats
- 1.GO GO for stand by
- 2.Rolling led for running
- 3.FAIL for three numbers not matching with each other
- 4.GOAL for winning

Block diagram

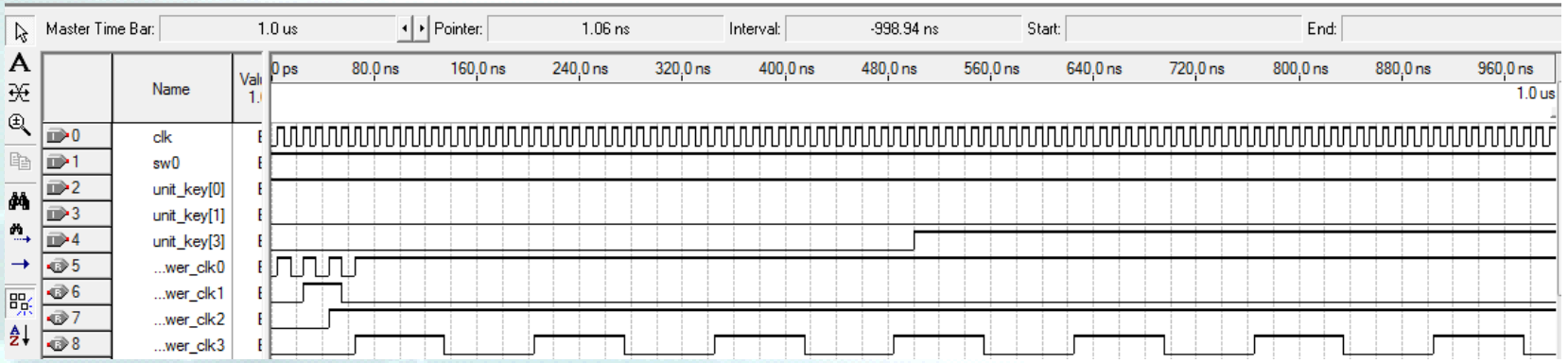
- How it works



Pin assignment

- 1 switch for turn on/off
- 1 key for start
- 1 key for stop
- 1 key for reset
- 3 7-seg leds for 3 numbers
- 4 7-seg leds for GOGO FAIL and GOAL

Simulation result



In the application, time units we use are all seconds. That's too long for quartusII to simulate.

So I change the period into us, just to show how the frequency changes.