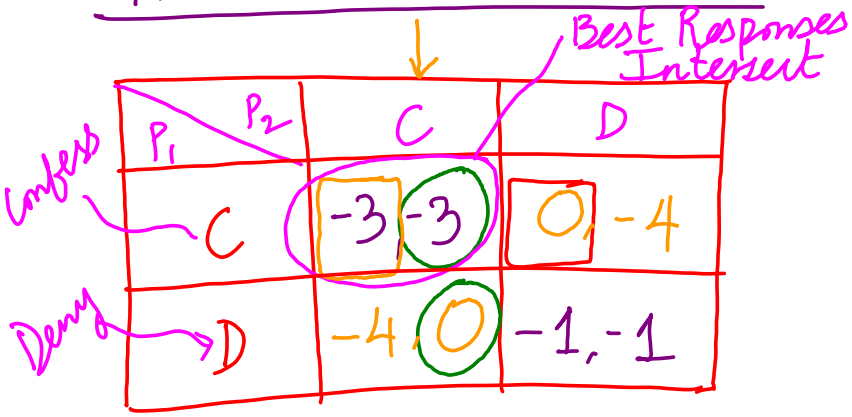
Prisoners Dilemma:



`Best Response' (BR)

$$BR_i(a_{-i})$$

BR_i: of player i

a_{-i}: given fixed action of all other players.

$BR_1(C) = C$

$BR_1(D) = C$

$BR_2(C) = C$

$BR_2(D) = C$

Best Response Dynamic

BR_2 — Player 2

(D) — Player 1 Denies

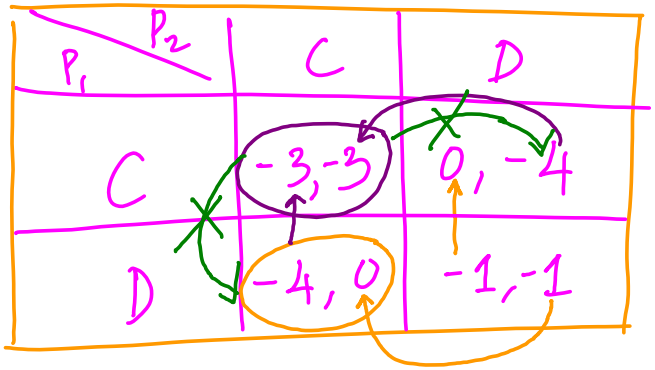
'Nash Equilibrium'
(NE)

Intersection of best Responses.

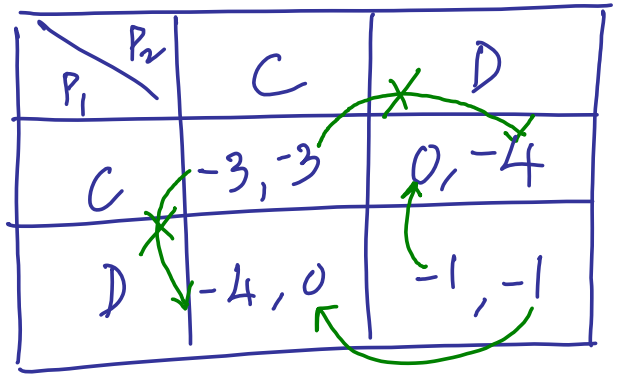
NE — each player is playing his best response to the actions of all the other players.

NE has interesting implications:

NE is a 'SELF ENFORCING' Agreement

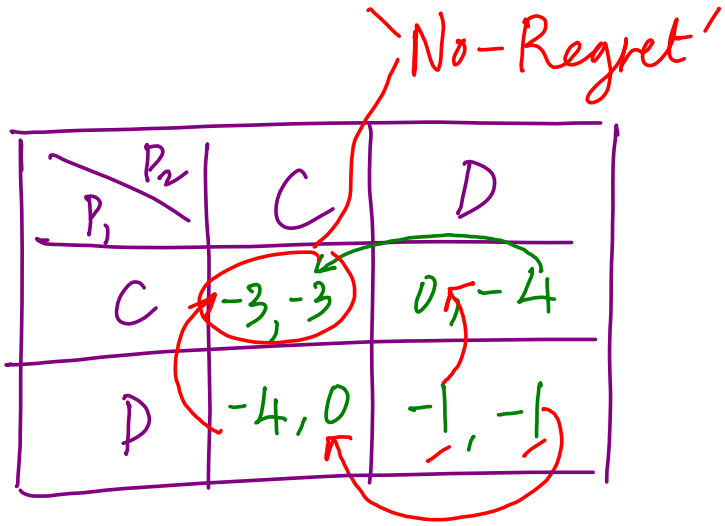


Nash equilibrium is also a 'self enforcing' agreement.



Nash equilibrium –
outcome from which
no player has an
incentive to deviate 'unilaterally'.

Nash Equilibrium
is a 'No-Regret'
outcome



Nash Equilibrium:

$a_1^* \; a_2^* \; \dots \; a_N^*$ — NE

N player

if for each player i

$$u_i(a_i^*, a_{-i}^*) \geq u_i(a_i, a_{-i}^*)$$

- how to hold for
  each player i
- each action i