Example similar to Prisoners Dilemma:

Market:

2 competing Firms

— set high price (H)

— set low price (L)

if both set a high price, both get a profit or utility of 500 each.

if both set low (L) price, then both get a lower payoff of 250 each.

if one firm sets high (H) while other sets a low (L) price, Firm which sets a high prices gets 0 while firm with low price gets 750 since it captures the entire market.

Game Table:

Best Responses Intersect

F_1 \ F_2	H	L
H	500, 500	0, 750
L	750, 0	250, 250

Nash Equilibrium

$BR_1(H) = L$

$BR_1(L) = L$

$BR_2(H) = L$

$BR_2(L) = L$

$BR_1(L) = L$

$BR_2(L) = L$

At outcome (L, L) each firm is playing its Best Response.

Therefore (L, L) is the 'Nash equilibrium' outcome.

Setting low prices is indeed a Nash Equilibrium!

'Nash-Equilibrium' is a 'Self Enforcing' agreement

'Price-war'

F_1 \ F_2	H	L
H	500, 500	0, 750
L	750, 0	250, 250

L, L is the only 'self enforcing' agreement.

F_1 \ F_2	H	L
H	500, 500	0, 750
L	750, 0	250, 250

... NOT 'Pareto Optimal'.

Given any outcome, if there is NO other outcome such that both players can SIMULTANEOUSLY improve their payoff, it is known as a PARETO optimal outcome.

(H, H) – Pareto Optimal

(H, L) – Pareto Optimal

(L, H) – Pareto Optimal

(L, L) – NOT Pareto Optimal.