

The Free Rider Problem on Team Projects--A Prisoner's Dilemma Model

Joe and Sally are working together on a team project for a management course. If either one works hard on the project, they will both get an A in the course. If neither does any work, they will both fail this course, but they could do better in other courses by spending less time on this one. There is a temptation to let the other person do all the work on the project and spend more time getting better grades in the other courses. If one person does all the work, then the effort required would put that person behind in other courses. Taking all this into account, here is a table showing probable semester grade point averages for different combinations of strategies.

Joe controls rows. His grades are shown in the upper left.

Sally controls columns. Her grades are in the lower right

Please note that each party wants to MAXIMIZE the value of their grade point averages.

<i>Semester average for Joe and Sally depending on effort distribution</i>				
Joe / Sally	Let Joe do it	moderate effort	work hard on project	Sally's best average
let Sally do it	2.67 / 2.67	3.33 / 2.33	3.67 / 2.33	
moderate effort	2.33 / 3.33	3.0 / 3.0	3.33 / 2.67	
work hard on project	2.33 / 3.67	2.67 / 3.33	3.33 / 3.33	
Joe's best average				

Use squares for Joe and circles for Sally to show which strategies would prevail if each party only chose to maximize their semester grade point average without considering a cooperative approach. What is the stable solution from this inconsiderate behavior? (Big hint to keep you from doing it backwards: The answer is NOT that they would both work hard on the project!)

Joe would:

Sally would:

Show, by drawing lines through those rows and columns, which strategie(s) are dominated and wouldn't be pursued in any case.

What would be a better solution for them both? What might they consider to allow them to come to a stable agreement on that better solution?

Semester averages for Joe and Sally

Joe / Sally	Let Joe do it	moderate effort	work hard on project	Sally's best average
let Sally do it	2.67 / 2.67	3.33 / 2.33	3.67 / 2.33	2.67
moderate effort	2.33 / 3.33	3.0 / 3.0	3.33 / 2.67	3.33
work hard on project	2.33 / 3.67	2.67 / 3.33	3.33 / 3.33	3.67
Joe's best average	2.67	3.33	3.67	

Joe would let Sally do it and Sally would let Joe do it. "Everybody's responsibility is nobody's responsibility" and both would flunk the course. work hard-work hard gives the best result. They should consider longer term relationship, effect on future reputations and collaborations, and use mechanisms to enforce dividing the work.