HOMEWORK 3

COMP3121 - ALGORITHM DESIGN

QUESTION 2

PUNEETH KAMBHAMPATI

z5164647

SOLUTION

The aim of the game is, Win when you can and settle for a draw otherwise. To maximise the points, we have to choose the best possible move at a given point, which overall gives us an optimal point for our given combination of hands.

Since we know that the opponent uses all of their rocks first, we want to win as many points as we can by using ALL of our papers first. At every turn where a Rock is thrown we pick the best move from our hand. If we have papers left then we use paper. If not, we use rocks and then scissors if we're unlucky. Basically, each type of hand has a priority list,

	[Win, Draw, Loss]
Opponent	**Counter Priority**
Rock	[Paper, Rock, Scissors]
Paper	[Scissors, Paper, Rock]
Scissors	[Rock, Scissors, Paper]

At every given move, we anticipate the opponent's move and then pick the appropriate priority list and pick the first available item from the list.

When we know a Rock is about to be thrown, we use any papers we have left, then move down the priority list. This is similar for every hand. This will ensure that we can win as many points as possible and try for draws when we can't win.

:wq