Suppose a jar contains $R$ red marbles and $B$ blue marbles, where $R > B$. The marbles are well mixed, then removed from the jar by selecting one marble at a time, at random, without replacement, until all the marbles are removed. What is the probability that the total number of Red marbles removed will always be strictly greater than the total number of Blue marbles removed after every selection? Remember, ties are not allowed.

In the spirit of UPSC, you should not use the internet or look up the solution in a book. Please include your name, student ID number, and email address on your solution. Grading will proceed more quickly if your final answer is written clearly at the beginning of the first page of your solution, followed by your work and justification.