Multiplication Program in Hack Assembly

Solution:

1. I'm going to implement multiplications first by adding the R0 to itself by R1 times
2. The times will be counted down from R1 so when it reaches 0, we'll have to jump to the end
3. By implementing D=M we copy R1 into D and by saying M=D, we now change M[times] = R1
4. The sum will be the cumulative sum of the R0's, so at the end of the program it will copy into R2
5. By using M-=0 it initializes the sum to 0
6. I used loop because within the loop, if times is equal to 0 it will need to break out
7. D=M will make D = times
8. D; means that if times is equal to 0 then, break
9. If we are still looping then it is required to decrement times and increment the sum
10. @1 D=D-A which means that d = times - 1
11. @times M=D which will now make times=times-1
12. @2 D=M and A0 D=D+M will make d = to R0 + SUM
13. And then @2 M=D again to make the sum = sum+R0
14. Reloop and make 0, JMP and End. This will end the infinite loop to the hack program.
15. Arrive to solution