In this assignment, you are expected to design a Dynamic Programming (DP) approach that plans an optimal investment strategy in Java.

Explanation of the Expected Optimal Investment Strategy

Consider you have money in amount of **M** and you decide to invest it in a company for **Y** years. The company has ***n*** different investment options numbered ***1*** to ***n*** and each year (*j*), investment option *i* provides a return of rate r_{ij}. In other words, if you have M dollars in the investment *i*, you will have $M*r_{ij}$ dollars at the end of year *j*. At the end of each year, you can put your money in another investment or you can use the same investment. You make investment decisions only once per year. At the end of each year, you can leave the money earnt in the previous year *in the same investment, or you can shift money to another investment*. If you do not move your money between two consecutive years, you pay a fee in rate of f1 over total earnt money, whereas if you switch your money to another investment option, you will pay a fee in rate of *f2* over total earnt money, where *f2 > f1*.

Design a DP algorithm that plans your optimal investment strategy and code it in Java. What is the running time of your algorithm?

Note: You will get the rate of each investment from the "input.xlsx" file. In the first matrix, columns represent years, rows are the investment identifiers. In the second matrix, rows show the f1 and f2 rates, columns show the consecutive years (1-2, 2-3, 10-11 etc.). You are allowed to convert .xlsx file into corresponding .txt files before reading in Java.

A sample screenshot of the running of your code;

//This parameters will be taken from the user.
Number of the investments: 4
Enter the amount of money you will invest: 10.000
How many years will you invest: 4

Enter the id of the first investment: 3
Enter the id of the second investment: 7
Enter the id of the third investment: 11
Enter the id of the fourth investment: 12

The best investment option for the 1st year is 11. investment -> your money will be 11.300
The best investment option for the 2nd year is 7. investment -> your money will be 12.626
The best investment option for the 3rd year is 3. investment -> your money will be 14.066
The best investment option for the 4th year is 3. investment -> your money will be 15.775

Total investment after 4 years is : 15.775

//The best investment option for each year
Best investment options are: 11-7-3-3

//End of the sample screen