**Understanding and Analysis**

1. **Understanding recursive algorithm:**

Recursion is when a function calls it to solve a problem. It breaks down a big problem into smaller parts solving them individually for the generation of the final output.

In this program, recursion is used to calculate the compound interest for the loan amount taken. The interest to pay grows over time. Instead of doing a big whole calculation, the program calculates it for 9 years(say time is 10 years), then for 8 years and until the amount is calculated for 1 year and then the final output is returned.

1. **Analysis:**

Time Complexity: O(n)

Using a single for loop can solve the same problem with no extra space. It is efficient on storage and also fail-proof. Hence the program can be optimized by using **for loop.**