Q.2 write a programme that calculate the simple interest and compound interest. The principal amount, rate of interest and time are entered through the keyboard.

Step-1

p = 100
r = 5
t = 3
n = 2

si = p*r*t/100
ci = (p(1 + (r/n))^n*t) - p

step-2

```
int p = 100;
int t = 3;
int n = 2;
float r = 5;
float si = p*r*t/100;
float ci = (p(1+(r/n)^n*t)-p;
```

```c
//STEP 3
#include <stdio.h>
#include <math.h>

int main()
{
    int p = 100;
    int t = 3;
    float r = 5;
    int n = 2;

    float si = (p * t * r) / 100;
    printf("Simple Interest after %d years: %.2f\n", t, si);
    float a = p + si;
    printf("Amount after %d years: %.2f\n", t, a);


    float ci = p * (pow((1 + r / (n * 100)), n * t) - 1);
    printf("Compound Interest after %d years: %.2f\n", t, ci);
    float b = p + ci;

    return 0;
}

```

```c
//STEP 4
#include <stdio.h>
#include <math.h>

int main()
{
    int principle_amount = 100;
    int yearsofLoan = 3;
    float rateofInterst = 5;
    int timePeriodofInterest = 2;

    float simpleInterest = (principle_amount *  yearsofLoan* rateofInterst) / 100.0;

    printf("Simple Interest after %d years: %.2f\n",  yearsofLoan, simpleInterest);

    float totalAmount_si = principle_amount + simpleInterest;

    printf("Amount after %d years: %.2f\n",  yearsofLoan, totalAmount_si);


    float compoundInterest = principle_amount*(pow((1 + rateofInterst/(100*timePeriodofInterest)),timePeriodofInterest*yearsofLoan) - 1);

    printf("Compound Interest after %d years: %.2f\n",  yearsofLoan, compoundInterest);

    float totalAmount_ci = principle_amount + compoundInterest;

    printf("Amount after %d years: %.2f\n",  yearsofLoan, totalAmount_ci);

    return 0;
}

```

//step 5

```c
#include <stdio.h>
#include <math.h>

int main()
{
    int principle_amount, yearsofLoan, timePeriodofInterest, rateofInterst;
    printf("Enter the principle amount: ");
    scanf("%d", &principle_amount);

    printf("Enter the number of years: ");
    scanf("%d", &yearsofLoan);

    printf("Enter the rate of interest: ");
    scanf("%f", &rateofInterst);

    printf("Enter the time period of interest (in months): ");
    scanf("%d", &timePeriodofInterest);

    float simpleInterest = (principle_amount *  yearsofLoan* rateofInterst) / 100.0;
    float totalAmount_si = principle_amount + simpleInterest;

    float compoundInterest = principle_amount*(pow((1 + rateofInterst/(100*timePeriodofInterest)),timePeriodofInterest*yearsofLoan) - 1);
    float totalAmount_ci = principle_amount + compoundInterest;

    printf("Simple Interest after %d years: %.2f\n",  yearsofLoan, simpleInterest);
    printf("Amount after %d years: %.2f\n",  yearsofLoan, totalAmount_si);

    printf("Compound Interest after %d years: %.2f\n",  yearsofLoan, compoundInterest);
    printf("Amount after %d years: %.2f\n",  yearsofLoan, totalAmount_ci);

    return 0;
}
```

//step 6

```c
#include <stdio.h>
#include <math.h>

int main() {
    int principal_amount, yearsofloan, rateofinterest, timeperiodofinterest;
    float simpleInterest, totalAmount_si, compoundInterest, totalAmount_ci;

    printf("Enter the principal amount: ");
    scanf("%d", &principal_amount);

    printf("Enter the number of years of loan: ");
    scanf("%d", &yearsofloan);

    printf("Enter the rate of interest: ");
    scanf("%d", &rateofinterest);

    printf("Enter the time period of interest: ");
    scanf("%d", &timeperiodofinterest);

    simpleInterest = (principal_amount * yearsofloan * rateofinterest) / 100.0;
    totalAmount_si = principal_amount + simpleInterest;

    compoundInterest = principal_amount * (pow((1 + rateofinterest / 100.0), timeperiodofinterest) - 1);
    totalAmount_ci = principal_amount + compoundInterest;

    printf("Simple Interest: %.2f\n", simpleInterest);
    printf("Total Amount with Simple Interest: %.2f\n", totalAmount_si);
    printf("Compound Interest: %.2f\n", compoundInterest);
    printf("Total Amount with Compound Interest: %.2f\n", totalAmount_ci);

    return 0;
}
```