

**Military Institute of Science and Technology**  
**Department of Computer Science & Engineering**  
**Object Oriented Programming Sessional - CSE 206**  
**Assignment - 03**

**Problem Statement:** Write a program that defines a namespace named **“Financial”**. The namespace contains another two namespace named **“Mortgage”** and **“Retirement”**. The **“Mortgage”** namespace contains functions related to mortgage payments, including **monthlyPayment()** and **totalPayments()** with necessary parameters. The **“Retirement”** namespace contains functions related to retirement savings, including **monthlySavings ()** and **totalSavings()** with necessary parameters.

Write a program that takes 'principal\_amount', 'interest\_rate', and 'number\_of\_periods' as inputs from the user, and uses these values to calculate the total payments for a mortgage and the total savings needed for retirement.

**Calculations of given functions**

**monthlyPayment ():**

```
r = r / 12.0  
c = pow (1.0 + r, n) - 1.0  
return (P * r) / c
```

**totalPayments ():**

```
return monthly_payment*n
```

**monthlySavings ():**

```
r= r / 12.0.  
c = pow (1.0 + r, n) - 1.0  
return P / ((pow (1.0 + r, n) - 1.0) / r) * c
```

**totalSavings():**

```
return monthly_savings * n * 12.0
```

[NB: P, r, n represent principal\_amount, interest\_rate, and the number\_of\_periods respectively]

**Sample Input-Output:**

```
Enter Principal Amount: 200000  
Enter Interest Rate: 0.06  
Enter Number of Periods: 30  
Total mortgage payment: 185874  
Total retirement savings: 360000  
  
Process returned 0 (0x0)   execution time : 10.094 s  
Press any key to continue.
```