In the previous chapter we have learnt about Spreadsheet and its several features that can be used in business applications. Now we are going to study the preparation of Payroll Accounting, Asset Management and Loan Repayment Schedule using the spreadsheet.

Payroll Accounting

Every employee is paid salary at the end of a period as per the agreements made between the employer and employee and in accordance with the policy in force from time to time in an organization. The computation of salary is based on the Rate of Basic Pay, No. of days worked and Rate of applicable allowances and deductions.

A Payroll Accounting should have the following features

- Maintain employee related data such as Employee No, Name of employee, Basic Pay, Applicable allowances, deductions etc
- Periodic calculation of the payments based on Basic Pay, No of days worked, Applicable allowances, deductions etc.
- Preparation of salary statements and individual salary slips.
- Generation of advice to bank comprising of net salary to be transferred to individual account of employees and other statutory payments such as Provident Fund, Tax etc.

Payroll Component

Following are the essential components for the preparation of a Payroll.

1) Current Payroll Period (The period for which the payroll is prepared. Eg. Jan 2015)
2) Earnings :-
   a. Basic Pay: It is the pay in the pay scale plus Grade Pay, but doesn’t include special pay.
   b. Grade Pay (GP): It is the pay to be added to Basic Pay according to the designation of the employee and applicable pay band or scale of pay.
   c. Dearness Pay (DP): It is the portion of Dearness Allowance which has been declared and deemed to have been merged with Basic Pay.
   d. Dearness Allowance (DA): It is the compensation for reduction in the purchasing power of money due to price rise. It is granted by Govt. periodically as a percentage of Basic Pay + Dearness Pay.
   e. House Rent Allowance (HRA): It is an amount paid to facilitate employee in acquiring on lease of residential accommodation.
   f. Transport Allowance (TA): Transport allowance granted to employee for the purpose of travelling between place of duty and residence
   g. Any other Earnings: Such as Education Allowance, Medical Allowance, Washing Allowance etc.
3) Deductions: -
   a. Professional Tax (PT): It is a statutory deduction according to the legislature of State Governments.
   b. Provident Fund (PF): It is a statutory deduction as a part of social security. It is deducted as certain percentage of Basic Pay + Dearness Pay.
   c. Tax Deductions at Source (TDS): It is a statutory deduction. It is the monthly installment of total Income Tax payable during the year.
   d. Recovery of Loan Installment (LOAN): Deduction towards loan provided by the employer to the employee.
   e. Any other Deductions: Any other deductions made towards ‘Advance against Salary’, ‘Food Grains Advance’, ‘Festival Advance’ etc

Elements Used in Payroll Calculation

**Basic Pay Earned (BPE)**

It is the basic pay calculated with reference to the number of Effective Days Present (NOEDP) during the month.

\[ BPE = BP \times \left( \frac{\text{NOEDP}}{\text{NODM}} \right) \]

BP = Basic Pay

NODM = No. of Days in the Month

NOEDP (No. of Effective Days Present) =

No. of Days in the Month – Leave Without Pay – Unauthorized Absents

---

E.g.: The basic pay of an employee is ₹30,000. During the month of June 2015, he has not attended the work for 3 days. His Basic Pay Earned (BPE) is calculated as follows:-

\[ BPE = 30,000 \times \left( \frac{27}{30} \right) = 27,000 \]

**Dearness Allowance (DA)**

\[ DA = BPE \times \text{Applicable Rate of DA for the Month} \]

**House Rent Allowance (HRA)**

\[ HRA = BPE \times \text{Rate of HRA for the Month} \]

**Travelling Allowance (TRA)**

\[ TRA = \text{Fixed Amount or On a percentage basis} \]

**Total Earnings (TE)**

\[ TE = BPE + DA + HRA + TRA \]

**Provident Fund (PF)**

\[ PF = BPE \times \text{Rate of PF} \]

**Tax Deduction at Source (TDS)**

\[ TDS = \text{It is usually a Fixed Amount.} \]

**Recovery of Loan Installment (LOAN)**

\[ LOAN = \text{It is usually a Fixed Amount.} \]
**Template Design**

Template in Excel means a spreadsheet having a preset format, used as a base for a particular application so that the format does not have to be recreated each time it is used. Payroll Statements are needed in every month. So instead of designing the payroll statement afresh every month, we can create a template only at once and the same can be used in the following months. While designing a template first we have to decide, in which columns data are entered directly and in which columns formulas should be entered to automate the calculations.

**Illustration**

The details of 10 employees of a concern for the month of January 2015 are given below:

<table>
<thead>
<tr>
<th>Emp. No</th>
<th>Emp. Name</th>
<th>Emp. Type</th>
<th>Deduction Days</th>
<th>Basic Pay</th>
<th>TDS</th>
<th>Loan Repayment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1001</td>
<td>RAHULCHAND</td>
<td>Senior</td>
<td>2.00</td>
<td>40000</td>
<td>500</td>
<td>0</td>
</tr>
<tr>
<td>1002</td>
<td>NIKHIL</td>
<td>Senior</td>
<td>1.00</td>
<td>34000</td>
<td>480</td>
<td>0</td>
</tr>
<tr>
<td>1003</td>
<td>DEEPTHI</td>
<td>Senior</td>
<td>0.00</td>
<td>32000</td>
<td>480</td>
<td>2000</td>
</tr>
<tr>
<td>1004</td>
<td>VISHNU</td>
<td>Senior</td>
<td>2.00</td>
<td>30000</td>
<td>500</td>
<td>0</td>
</tr>
<tr>
<td>1005</td>
<td>ABIN</td>
<td>Senior</td>
<td>2.00</td>
<td>28000</td>
<td>400</td>
<td>0</td>
</tr>
<tr>
<td>1006</td>
<td>RUGMA</td>
<td>Junior</td>
<td>3.00</td>
<td>24000</td>
<td>350</td>
<td>0</td>
</tr>
<tr>
<td>1007</td>
<td>KARTHIK</td>
<td>Junior</td>
<td>1.00</td>
<td>22000</td>
<td>350</td>
<td>1800</td>
</tr>
<tr>
<td>1008</td>
<td>ATHULYA</td>
<td>Junior</td>
<td>4.00</td>
<td>22000</td>
<td>350</td>
<td>0</td>
</tr>
<tr>
<td>1009</td>
<td>ISMAIL</td>
<td>Asst</td>
<td>2.00</td>
<td>18000</td>
<td>280</td>
<td>1500</td>
</tr>
<tr>
<td>1010</td>
<td>KIRAN BOSE</td>
<td>Asst</td>
<td>1.00</td>
<td>14000</td>
<td>250</td>
<td>0</td>
</tr>
</tbody>
</table>

In addition the following details are also given:

a) Dearness allowance is 80% of Basic Pay  
b) HRA: For Seniors - 40%, For Juniors – 30%, For Assistants-Nil  
c) Travelling Allowance: For Seniors – ₹.1000, For Juniors – ₹.500, For Assistants- ₹.300  
d) PF Deduction: 10% of Basic + DA

**Solution**

Let us now examine how a payroll can be created with the above details.

Step.1: The common factors can be arranged on the top of the payroll for easy reference and easy manipulation, when a change is occurred.

No. of working days in the month is given in E1  
DA Rate is given in E2
HRA Rate for Senior is given in E3
HRA Rate for Junior is given in E4
TRA Rate for Senior is given in E5
TRA Rate for Junior is given in E6
TRA Rate for Assistant is given in E7
PF Rate is given in E8

Now let us use these cell references for our calculations. One of the important fact to be remembered is that while giving reference to these cells, we should make it absolute reference by giving ‘$’ symbols. Otherwise the references will be changed, when the formula is copied to the remaining rows.

Step.2: Next you have to arrange the different elements of payroll in a meaningful way. Here the table headings are given from the cell A11 to P11.

Step.3: This is the most important part of payroll preparation. Here we have to decide the columns to which data are entered directly and columns to which formulas are to be entered for automatic calculations. The formulas are to be entered in the first row of the table and then it can be copied to the remaining rows. Below is given a table showing the data to be entered in different columns of the table:

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Column Heading</th>
<th>Cell</th>
<th>Data / Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Emp. No</td>
<td>A12</td>
<td>Data to be entered directly</td>
</tr>
<tr>
<td>2</td>
<td>Emp. Name</td>
<td>B12</td>
<td>Data to be entered directly</td>
</tr>
<tr>
<td>3</td>
<td>Emp. Type</td>
<td>C12</td>
<td>Data to be entered directly</td>
</tr>
<tr>
<td>4</td>
<td>Deduction Days</td>
<td>D12</td>
<td>Data to be entered directly</td>
</tr>
<tr>
<td>5</td>
<td>Basic Pay</td>
<td>E12</td>
<td>Data to be entered directly</td>
</tr>
<tr>
<td>6</td>
<td>No. of Effective Days</td>
<td>F12</td>
<td>No. of days in the month – Deduction Days</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Formula : =$E$1 – D12</td>
</tr>
<tr>
<td>7</td>
<td>Basic Pay Earned(BPE)</td>
<td>G12</td>
<td>BPE = BP*(NOEDP/NODM)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Formula : =E12*(F12/$E$1)</td>
</tr>
<tr>
<td>8</td>
<td>DA</td>
<td>H12</td>
<td>DA = BPE*Rate of DA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Enter Formula : =G12*$E$2</td>
</tr>
<tr>
<td>9</td>
<td>HRA</td>
<td>I12</td>
<td>HRA = BPE*Rate of HRA applicable for different categories</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Enter Nested if formula :</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>= if(C12=&quot;Senior&quot;,G12*$E$3, if(C12=&quot;Junior&quot;,G12*$E$4,0))</td>
</tr>
<tr>
<td>10</td>
<td>TRA</td>
<td>J12</td>
<td>TRA = Rates applicable to different categories</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Enter Nested if formula :</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>= if(C12=&quot;Senior&quot;,$E$5, if(C12=&quot;Junior&quot;,E$6,$E$7))</td>
</tr>
<tr>
<td>11</td>
<td>Total Earnings</td>
<td>K12</td>
<td>TE = BPE + DA + HRA + TRA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Enter formula : =Sum(G12:J12)</td>
</tr>
<tr>
<td>12</td>
<td>PF</td>
<td>L12</td>
<td>PF = Basic Pay * Rate of PF</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Enter formula : =G12*$E$8</td>
</tr>
</tbody>
</table>
Step 4: Now select the cells in which formulas are entered and copy it down up to the required row. The final result will look as follows

### Asset Accounting

Assets are the properties of a business which are acquired for the purpose of earning income. Assets can be classified into Fixed Assets and current Assets. Fixed Assets are long-term assets and provide productive capability of the business. It includes both tangible and intangible assets. Buildings, Land, Plant, Machinery, Furniture, Goodwill etc are examples of Fixed Assets.

Depreciation should be charged on fixed assets so as to recoup the amount spent on fixed assets. Depreciation is charged on fixed assets as per the policy of the organization. Normally there are two methods for charging depreciation; they are Straight Line Method and Written Down Value method.
**Straight Line Method**

Under this method fixed amount of depreciation is charged on asset every year. The following is the formula for computation of depreciation under this method.

Acquisition Cost = Purchase Value + Other Expenses such as Transportation charges, installation charges, Pre-operating expenses etc

Total Depreciable Amount = Acquisition Cost – Salvage value

Salvage Value = Value realisable at the end of useful life of Asset.

Annual /Straight Line Depreciation = \[
\frac{\text{Total Depreciable Value}}{\text{Expected Useful Life}}
\]

Rate of Depreciation = \[
\frac{\text{Annual /Straight Line Depreciation}}{\text{Total Depreciable Value}}
\]

**SLN()**

In excel there is a simple function called SLN() to calculate depreciation under Straight Line Method. The syntax of SLN Function is

=SLN(cost,salvage,life)

Where

- cost = Acquisition cost of asset
- Salvage = Salvage value at the end of asset’s life
- Life = Useful life of the asset

Eg. An asset purchased for ₹.9,000 and its installation cost is ₹.1,000. The useful life of the asset is 10 years, at the end of which it will bring salvage value of ₹.2,000.

These details can be applied in SLN Function to calculate Straight Line Depreciation as follows:-

=SLN(10000,2000,10)

Then we will get the result as ₹.800

**Illustration**

Below is given the details of various assets in a concern. Calculate the Straight Line Depreciation by using SLN() function in excel.

<table>
<thead>
<tr>
<th>Name of Asset</th>
<th>Cost of Purchase</th>
<th>Installation Charges</th>
<th>Transportation Charges</th>
<th>Pre-operating Expenses</th>
<th>Salvage Value</th>
<th>Life in Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machinery</td>
<td>20000</td>
<td>2000</td>
<td>4600</td>
<td>1200</td>
<td>12000</td>
<td>10</td>
</tr>
<tr>
<td>Furniture</td>
<td>40000</td>
<td>3500</td>
<td>1500</td>
<td>500</td>
<td>3000</td>
<td>8</td>
</tr>
</tbody>
</table>
The given details arranged in a worksheet as follows. We have added only two columns to the given details. One is to calculate the Total Acquisition Cost of Assets and other is to calculate the Depreciation.

<table>
<thead>
<tr>
<th>Name of Asset</th>
<th>Cost of Purchase</th>
<th>Installation Charges</th>
<th>Transport Charges</th>
<th>Pre-operating Expenses</th>
<th>Salvage Value</th>
<th>Life in Years</th>
<th>Acquisition Cost of Asset</th>
<th>Straight Line Depreciation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machinery</td>
<td>20000</td>
<td>2000</td>
<td>4600</td>
<td>1200</td>
<td>12000</td>
<td>10</td>
<td>7800</td>
<td>1580.00</td>
</tr>
<tr>
<td>Furniture</td>
<td>40000</td>
<td>3500</td>
<td>1500</td>
<td>500</td>
<td>3000</td>
<td>8</td>
<td>45500</td>
<td>5312.50</td>
</tr>
<tr>
<td>Land</td>
<td>450000</td>
<td>0</td>
<td>0</td>
<td>60000</td>
<td>15000</td>
<td>15</td>
<td>510000</td>
<td>33000.00</td>
</tr>
<tr>
<td>Building</td>
<td>300000</td>
<td>0</td>
<td>0</td>
<td>80000</td>
<td>20000</td>
<td>20</td>
<td>308000</td>
<td>14400.00</td>
</tr>
</tbody>
</table>

In the cell H2 enter the formula =sum(B2:E2)

In the cell I2 enter the formula =SLN(H2,F2,G2)

And copy down these formulas to the remaining rows

Then the result will be as follows

Written Down Value (WDV) Method

Written Down Value method uses the current book value as the base for calculating depreciation for the next period. It is also called Declining Balance method or Diminishing Balance method. In excel the DB() function is used to calculate depreciation under Written Down Value method. The syntax of DB() function is as follows:-

\[
\text{DB( cost, salvage, life, period, [number\_months] )}
\]
Where as

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>The original cost of the asset.</td>
</tr>
<tr>
<td>Salvage</td>
<td>The salvage value after the asset has been fully depreciated.</td>
</tr>
<tr>
<td>Life</td>
<td>The useful life of the asset or the number of periods that you will be depreciating the asset.</td>
</tr>
<tr>
<td>Period</td>
<td>The period that you wish to calculate the depreciation</td>
</tr>
<tr>
<td>number_months</td>
<td>Optional. It is the number of months in the first year of depreciation. If this parameter is omitted, the DB function will assume that there are 12 months in the first year.</td>
</tr>
</tbody>
</table>

Example-1

An asset that costs ₹1,00,000. The salvage value is ₹8,000. It has an effective life of 10 years. The depreciation for the first year, assuming that there are 12 months in first year (i.e.; the asset was purchased on the opening day of the financial year) is calculated by the following formula

=DB(100000,8000,10,1,12)

Example-2

An asset that costs ₹50,000. The salvage value is ₹2,000. It has an effective life of 8 years. The depreciation for the second year, assuming that there are 12 months in first year (i.e.; the asset was purchased on the opening day of the financial year) is calculated by the following formula

=DB(50000,2000,8,2,12)

Example-3

An asset that costs Rs20,000. The salvage value is ₹1000. It has an effective life of 5 years. The depreciation for the third year, assuming that there are 4 months in first year (i.e.; the asset was purchased after 8 months of current year) is calculated by the following formula

=DB(2000,1000,5,3,4)

**Calculation of Number of Months and Period**

In the above three examples, all the parameters are directly entered in the formula. But we can automate the calculation of *Number of months* in the beginning year and *Period* for which depreciation is calculated by using some additional formulas.

Consider the following table. In this only the Asset Installation date (in B1) and Current Year ending date (in B2) are given. Let us examine how No. of months in the beginning year and Period elapsed is calculated.
No. of months in the beginning year means the no. of months from the installation date to the closing date of the beginning year. So first we have to calculate the ending date of the first year. If the accounting year ends on 31st Dec each year, it needs a simple formula to calculate the ending date of first year. In the Cell B3, we can give the following formula in such a case

\[ \text{Date}(\text{Year}(\text{B1}),12,31) \]

In the given example, the above formula brings the result as 31/12/2008.

But if the accounting year overlaps between two calendar years (E.g. - From 1st April to 31st March), it requires some more large formula to calculate the exact ending date of first year as follows:

\[ \text{IF}(\text{AND}(\text{MONTH}(\text{B1})>0,\text{MONTH}(\text{B1})<4),\text{DATE}(\text{YEAR}(\text{B1}),3,31),\text{DATE}(\text{YEAR}(\text{B1})+1,3,31)) \]

Or

\[ \text{IF}(\text{MONTH}(\text{B1})>3, \text{DATE}(\text{YEAR}(\text{B1})+1,3,31),\text{DATE}(\text{YEAR}(\text{B1}),3,31)) \]

After finding the year end date of first year, next step is find out the number of months between installation Date and End date of First year. When a date is subtracted from another, excel gives the result as the number of days between these two dates.

E.g.: The formula =“30/06/2015” – “01/01/2015” will give the result as 180. That means there are 180 days between these two dates.

In the given example, the year ending date of beginning year is calculated in the cell B3 and installation date is given in the cell B1. Let us use the formula =B3-B1 to calculate the difference between these two days. This will give result as 292 days. Since we require number of months instead of days, we can divide the answer by 30 and the formula can be changed as follows. =\((\text{B3-B1})/30\). This will give result as 9.7333 months. Again in order to avoid the fractions, we can enclose the above formula in a Round function and the final formula will be as follows:-

\[ \text{Round}((\text{B3-B1})/30,0) \]

Now let us look how to calculate the period for which depreciation is calculated, i.e. the number of years elapsed from the date of installation. It can be simply calculated as subtracting the year of installation from the current year. E.g. If the asset is purchased on 01/02/2008 and current year end date is 31/12/2015 the simple formula =\(\text{Year}(“31/12/2015”) – \text{Year}(“01/02/2008”)\) will give the result as 7 years i.e.; 2015 – 2008.

But as we state earlier, if the accounting year overlaps between two calendar years, we need some more large formula. In the example given, the installation date is given in B1 and Current year ending date is given in B2. Since the accounting year ends on 31st march, we have to give the following formula in the cell B5 to calculate the number of years elapsed from the date of installation.

\[ \text{IF}(\text{MONTH}(\text{B1})>3,\text{YEAR}(\text{B2})-\text{YEAR}(\text{B1}),\text{YEAR}(\text{B2})-\text{YEAR}(\text{B1})+1) \]
Illustration

We are given the following details regarding the various assets of a company. Calculate the depreciation under Written Down Value Method by using DB Function.

<table>
<thead>
<tr>
<th>Asset Name</th>
<th>Installation Date</th>
<th>Purchase Cost</th>
<th>Installation Cost</th>
<th>Salvage Value</th>
<th>Life in Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machinery</td>
<td>10-05-2012</td>
<td>250000</td>
<td>50000</td>
<td>20000</td>
<td>10</td>
</tr>
<tr>
<td>Furniture</td>
<td>01-01-2009</td>
<td>40000</td>
<td>10000</td>
<td>6000</td>
<td>8</td>
</tr>
<tr>
<td>Plant</td>
<td>04-08-2007</td>
<td>180000</td>
<td>20000</td>
<td>45000</td>
<td>20</td>
</tr>
</tbody>
</table>

\[
\text{G4 (Total Cost)} := \text{sum(C4:D4)}
\]

\[
\text{H4 (Year end of 1st Year)} := \text{IF(AND(MONTH(B4)>0,MONTH(B4)<4),DATE(YEAR(B4),3,31),DATE(YEAR(B4)+1,3,31))}
\]

\[
\text{I4 (Period)} := \text{IF(MONTH(B4)>4, YEAR($C$1)-YEAR(B4)+1, YEAR($C$1)-EAR(B4))}
\]

\[
\text{J4 (No. of months in beginning)} := \text{ROUND((H4-B4)/30,0)}
\]

\[
\text{K4 (Depreciation)} := \text{DB(G4,E4,F4,I4,J4)}
\]

Then select the cell G4:K4 and copy down to the remaining three rows. The resultant table will look as follows:
In companies the Balance sheet is accompanied by statement showing the Gross Block and Net Block of different types of Assets.

Gross Block is the total value of all of the assets that a company owns. Value is determined by the amount of costs to acquire these assets, and it does not decrease the depreciation. Net block is the gross block less accumulated depreciation on assets. Net block is actually what the assets are worth to the company. Below is given a sample of Schedule of Asset Blocks:

<table>
<thead>
<tr>
<th>Asset Name</th>
<th>Installation Date</th>
<th>Purchase Cost</th>
<th>Installation Cost</th>
<th>Salvage Value</th>
<th>Life in Years</th>
<th>Total Cost</th>
<th>Year end of 1st year</th>
<th>Depreciation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machinery</td>
<td>10-05-2012</td>
<td>250000</td>
<td>50000</td>
<td>20000</td>
<td>10</td>
<td>300000</td>
<td>31-03-2013</td>
<td>32400</td>
</tr>
<tr>
<td>Furniture</td>
<td>01-01-2009</td>
<td>40000</td>
<td>10000</td>
<td>6000</td>
<td>8</td>
<td>50000</td>
<td>31-03-2009</td>
<td>3797</td>
</tr>
<tr>
<td>Plant</td>
<td>04-08-2007</td>
<td>180000</td>
<td>20000</td>
<td>45000</td>
<td>20</td>
<td>200000</td>
<td>31-03-2008</td>
<td>8125</td>
</tr>
</tbody>
</table>

Here Gross Block as on 31st Mar 2015 is calculated as:

**Gross Block as on 1st Apr 2014 + Additions – Deduction**

Depreciation as on 31st Mar 2015 is calculated as:

**Depreciation as on 1st Apr 2014 + Additions – Deduction**

Additions of depreciation means depreciation of current year.

Net Block as on 1st Apr 2014 is calculated as:

**Gross Block as on 1st April 2014 – Accumulated Depreciation as on 1st April 2014**

Net Block as on 31st Mar 2015 is calculated as:

**Gross Block as on 31st Mar 2015 – Accumulated Depreciation as on 31st Mar 2015**
**Loan Repayment Schedule**

Loan is a sum borrowed for a specified period at specified rate of interest. The loan is repaid through a number of periodic installments (normally in monthly installments) along with interest over the loan repayment period.

Computation of repayment installments is a tedious task. But excel’s built in PMT function can be used to compute monthly installments of repayments of loan. This function is already discussed in the previous chapter ‘Spreadsheet’.

<table>
<thead>
<tr>
<th>Syntax</th>
<th>=PMT( rate, nper, pv, [fv], [type] )</th>
</tr>
</thead>
</table>

Where as

- **rate** = interest rate per period for the loan
- **Nper** = number of payments for the loan. The unit must be the same as of interest rate
- **Pv** = Present Value ie; the loan amount
- **Fv** = Future Value, the value of loan at the end, which is taken as zero
- **Type** = Whether the payment is made at the beginning(Value-0) or at the end (Value-1)

A bank has given an Housing Loan of ₹.5,00,000 to a customer on 1st April 2005. The loan carries interest @ 10% p.a and the loan is to be repaid over 10 years. Here the monthly installments are calculated by the following formula assuming that the installments are paid at the end of each month.

\[
\text{=PMT (10%/12,10*12,500000,0,1) = ₹. -6553.}
\]

Here the interest rate is divided by 12 to convert to monthly rate and the year is multiplied by 12 to get number of monthly payments. The monthly answer is shown as minus figure since it is an outflow.