BUY versus LEASE EXAMPLE
Example CND

INTRODUCTION

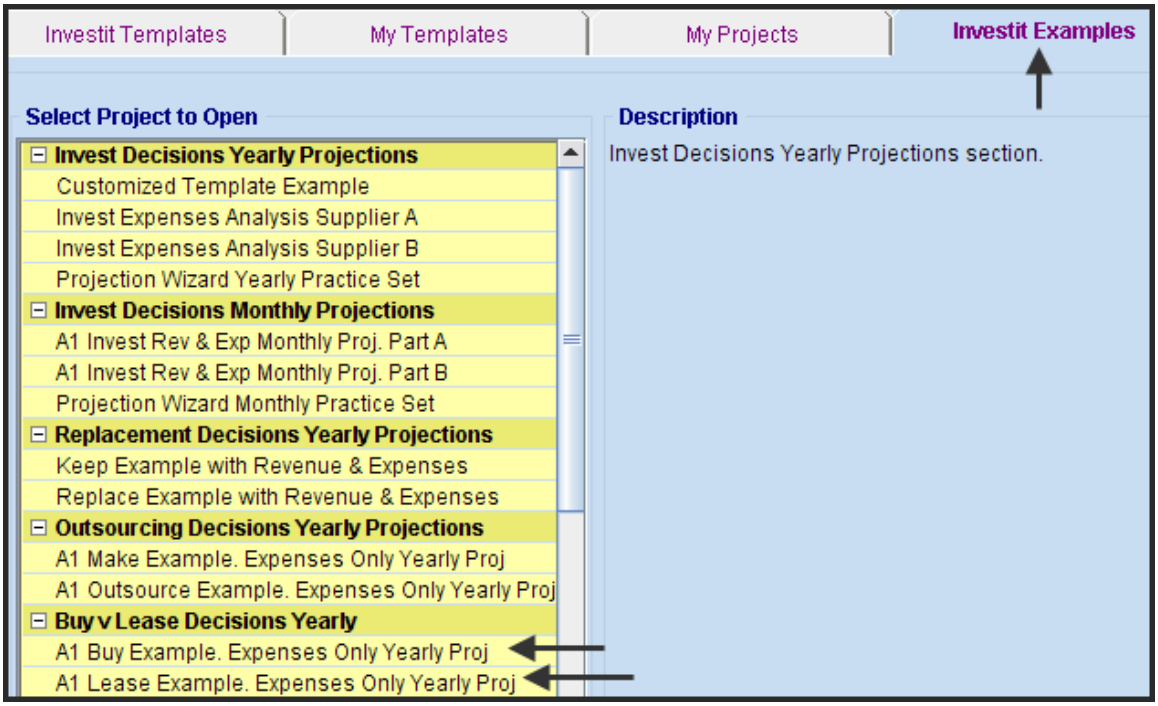
This example uses the “Buy Expenses Only Yearly” and “Lease Expenses Only Yearly” templates

Note: Buy versus lease decisions should always be made “After Tax” because of the different tax treatments. The exception would be for non profit organizations where the buy versus lease analysis would be done before tax.

VERIFYING YOUR ANALYSIS

You can compare your analysis against the two Investit Decisions Examples;

1. A1 Buy Example. Expenses Only Yearly Proj.
2. A1 Lease Example. Expenses Only Yearly Proj.



EXAMPLE

An organization is evaluating whether they should buy or lease their new “Super X” high volume color printer.

General Information

Analysis Period: 6 Years
Investor’s Marginal Tax Rate: 33.00%
Discount Rate (Before Tax): 12.00%

BUY ANALYSIS

Project Info Folder

Project Name: Super X Printer. Buy Analysis
Project Description: Example
Analysis Period: 9 years

Investor Folder

Investor’s Marginal Tax Rate: 33.00%
Discount Rate (Before Tax): 12.00%

Investment Folder

Description: Super X Printer
Amount: $250,000
CCA Class: Equipment/Machinery

Working Capital Folder

Working Capital: None

Expenses Folder

Service Contract: $3,000 per month for one year increasing at 3.00% per year compounded

Insurance: $5,000 per year increasing at 3.00% compounding

Financing Folder

Start Date: Year 1 January
Type: Standard Mortgage
Amount: $100,000
Time Period: 6 years
Interest Rate: 8.00% per year
Payments: Monthly
Compounding Period: Monthly

Salvage Value Folder

Disposition Costs
  Selling Expenses: None
  Removal Costs: None
Salvage Value:
  Super X Printer: $75,000

LEASE ANALYSIS

Project Info Folder

Project Name: Super X Printer Lease Analysis
Project Description: Example
Analysis Period: 6 years

Investor Folder

Investor's Marginal Tax Rate: 33.00%
Discount Rate (Before Tax): 12.00%

Investment Folder

Description: Investment (Down Payment)
Amount: $50,000
CCA Class: Equipment/Machinery

Working Capital Folder

Working Capital: None

Expenses Folder

Leasing Cost: $4,300 per month for 6 years

Service Contract: $2,500 per month for one year increasing at 3.00% compounding per year

Financing Folder

No financing

Salvage Value Folder

Disposition Costs:
Removal Costs: None
Salvage Value:
Super X Printer: $0

Steps

Using the Buy and Lease Expenses Only Yearly projections templates;

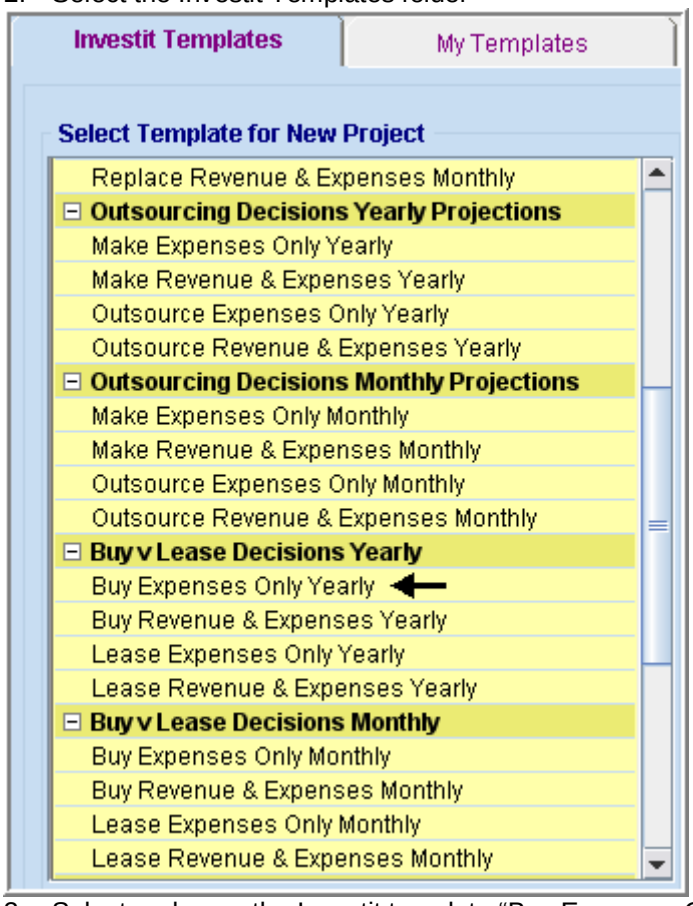
1. Enter the Analysis for buying the "Super X" high volume color printer.
2. Enter the Analysis for leasing the "Super X" high volume color printer.
3. Use the "Project Comparison Report" or the "Incremental Cash Flow Report" to compare the two options

INSTRUCTIONS FOR ENTERING THE BUY ANALYSIS

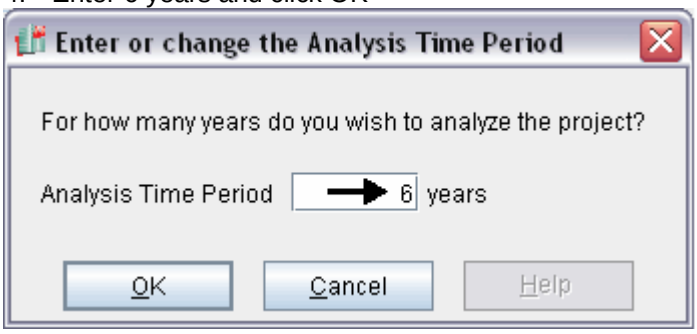
Getting started

The first step is to open the Investit Decisions Template "Buy Expenses Only Yearly" as follows:

1. Open Investit Decisions.
2. Select the Investit Templates folder



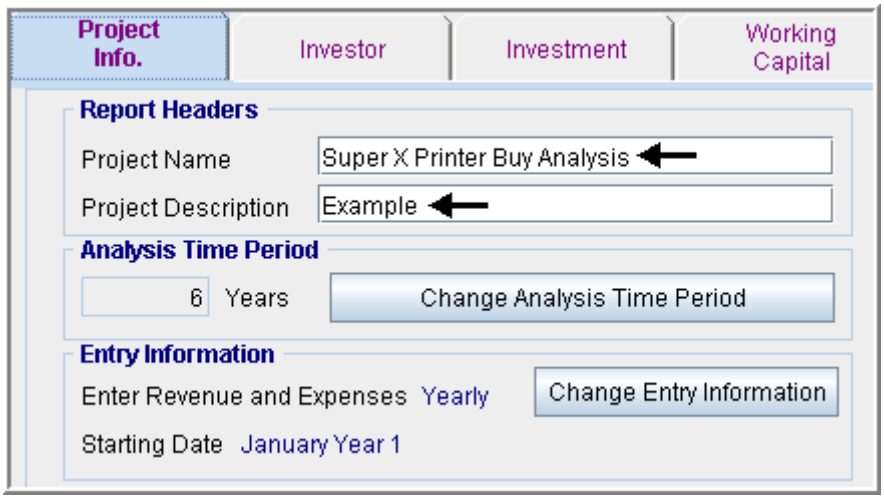
3. Select and open the Investit template "Buy Expenses Only Yearly". The analysis period dialog will open at this point.
4. Enter 6 years and click OK



Entering the project data and information

Project Info Folder

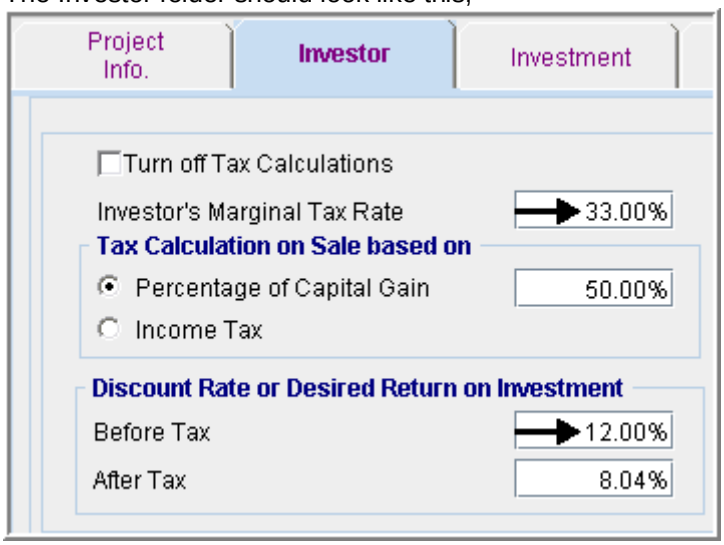
Project Name: Super X Printer. Buy Analysis
Project Description: Example
Analysis Period: 9 years



Investor Folder

Investor's Marginal Tax Rate: 33.00%
Discount Rate (Before Tax): 12.00%

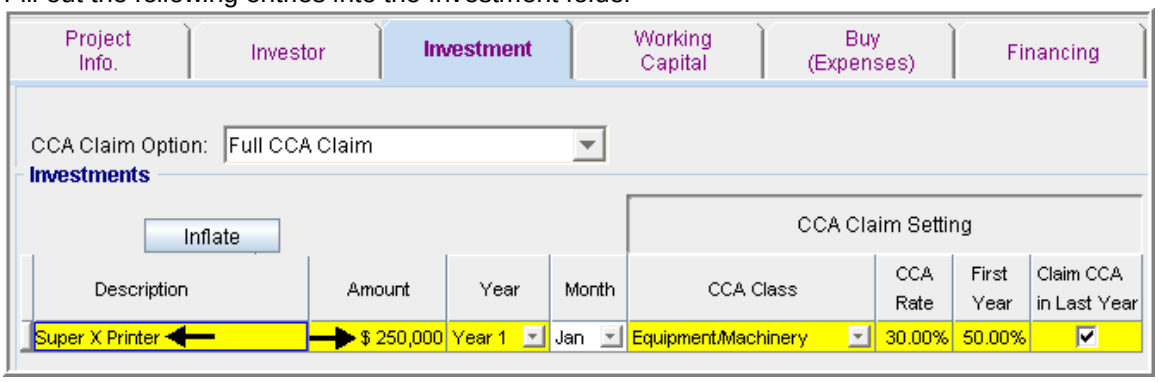
The Investor folder should look like this;



Investment Folder

Description: Super X Printer
Amount: $250,000
CCA Class: Equipment/Machinery

Fill out the following entries into the Investment folder



Working Capital Folder

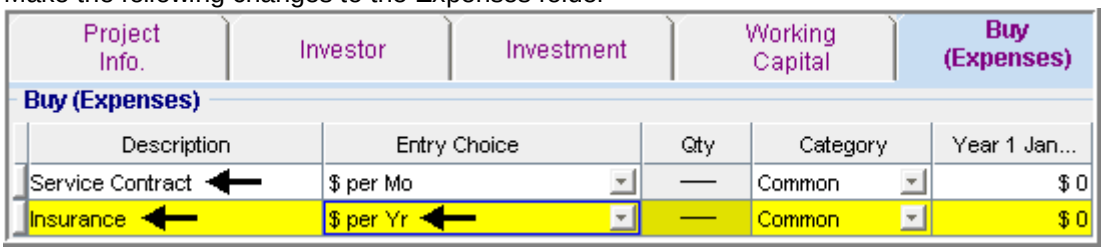
Working Capital: None

Expenses Folder

Service Contract: $3,000 per month for one year increasing at 3.00% per year compounded

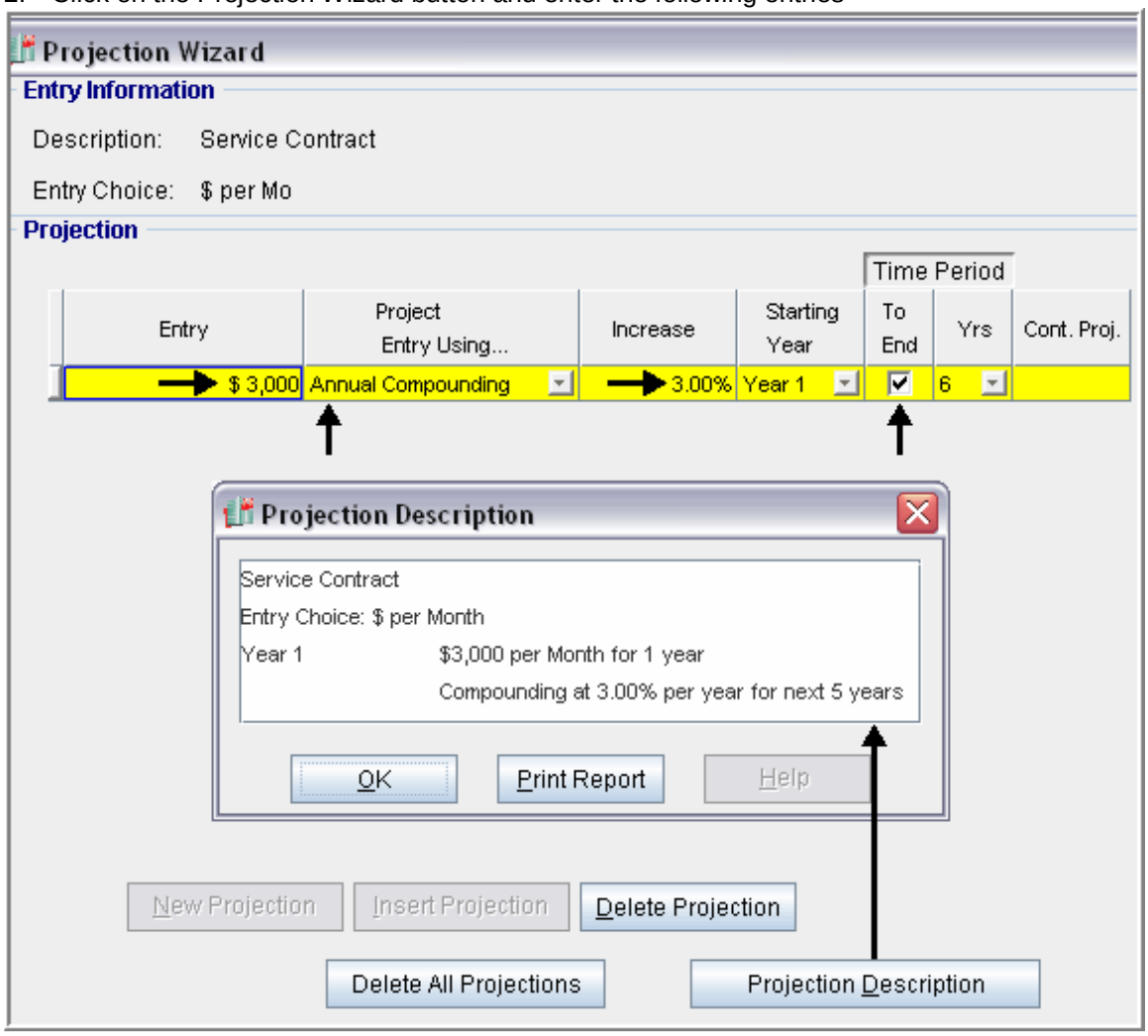
Insurance: $5,000 per year increasing at 3.00% compounding

Make the following changes to the Expenses folder



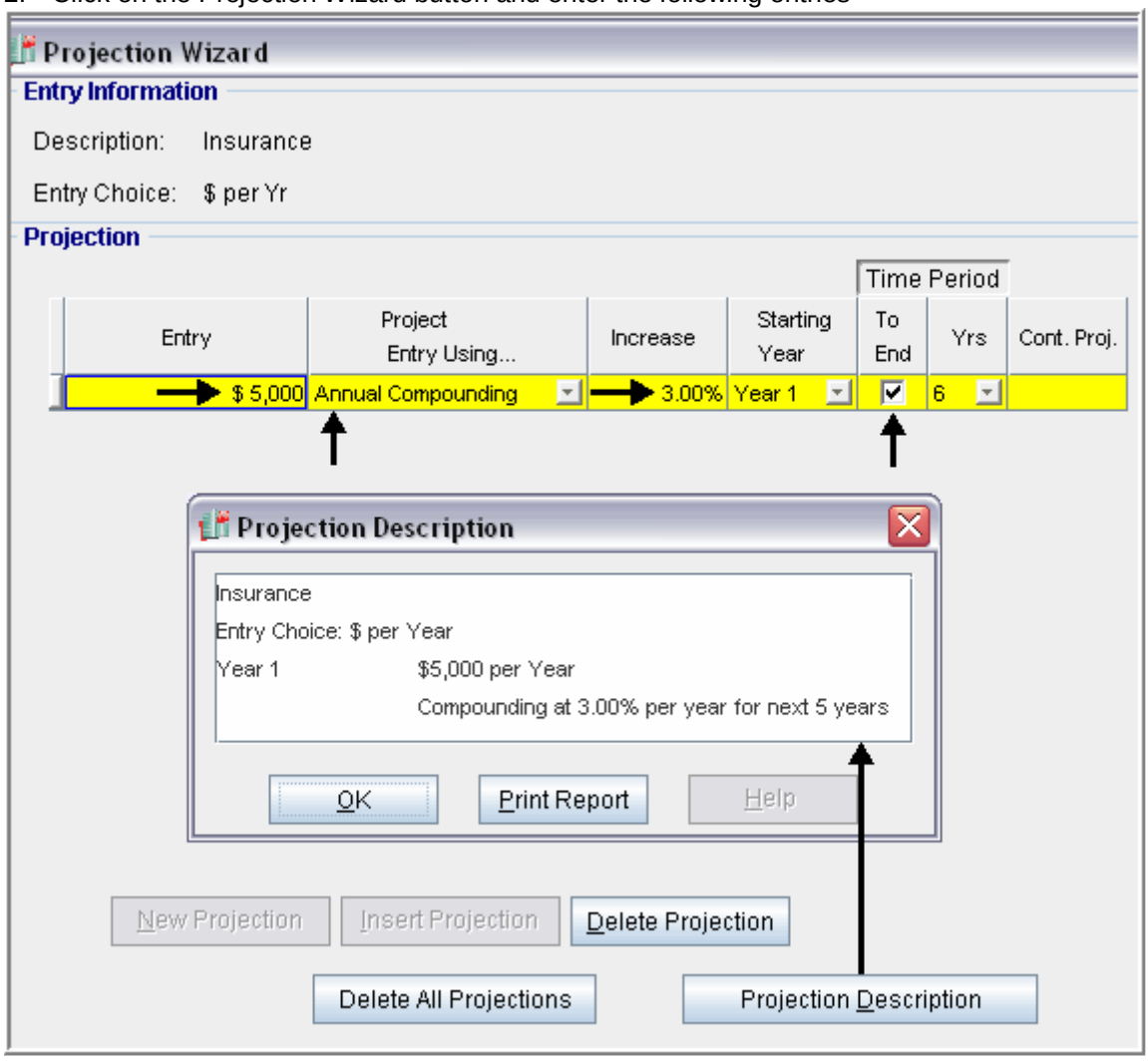
Setting up the Service Contract

1. Select row 1 'Service Contract'
2. Click on the Projection Wizard button and enter the following entries



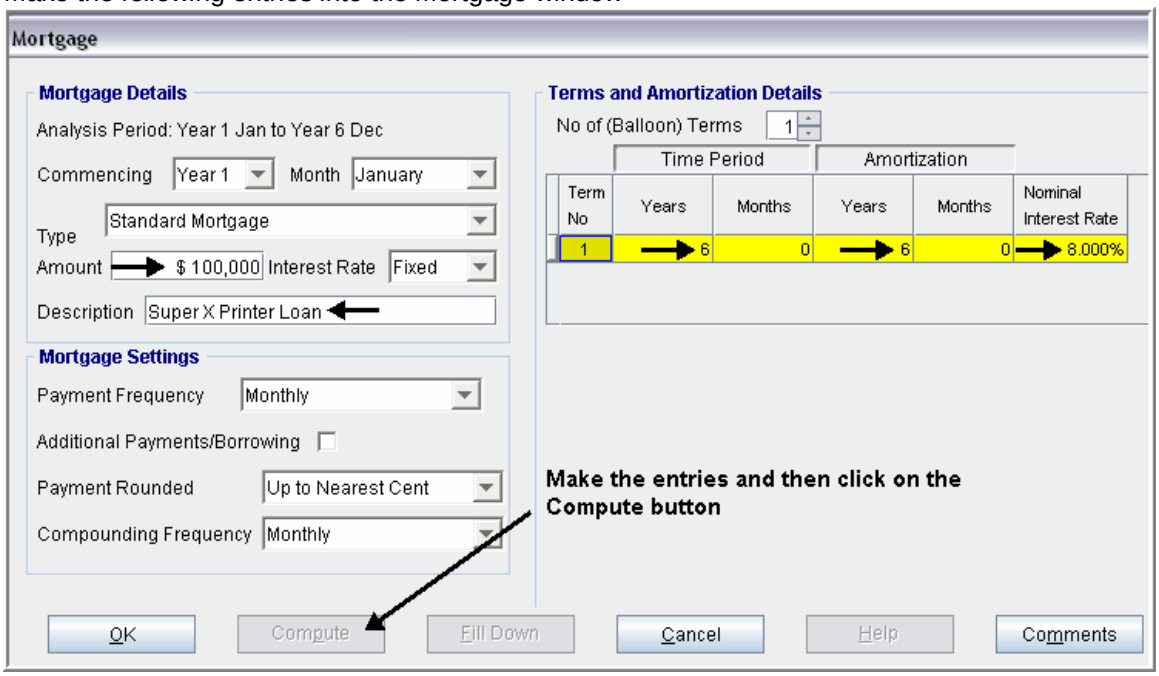
Setting up the Insurance

1. Select row 2 'Insurance'
2. Click on the Projection Wizard button and enter the following entries



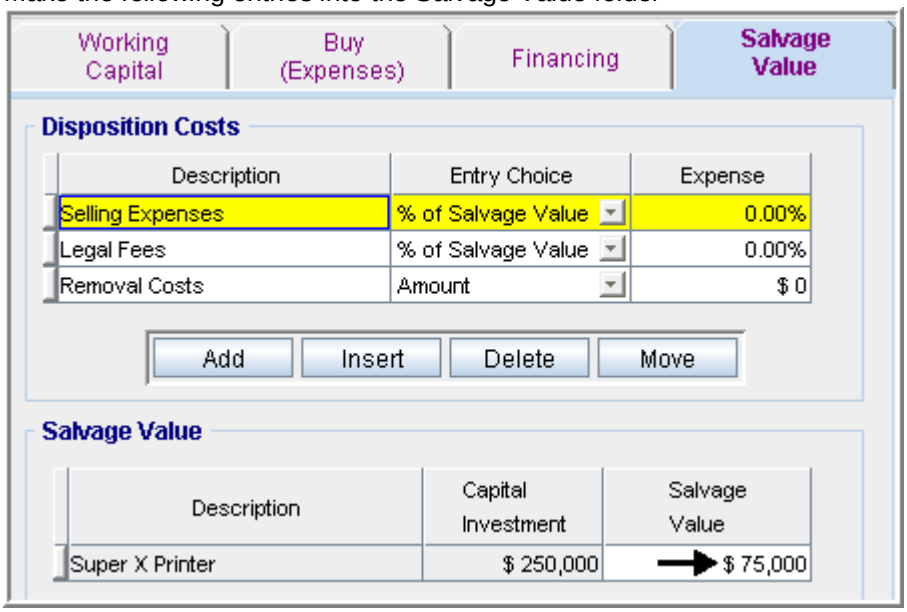
Financing Folder
Start Date: Year 1 January
Type: Standard Mortgage
Amount: $100,000
Time Period: 6 years
Interest Rate: 8.00% per year
Payments: Monthly
Compounding Period: Monthly

Make the following entries into the Mortgage window



Salvage Value Folder
Disposition Costs
Selling Expenses: None
Removal Costs: None
Salvage Value:
Super X Printer: $75,000

Make the following entries into the Salvage Value folder



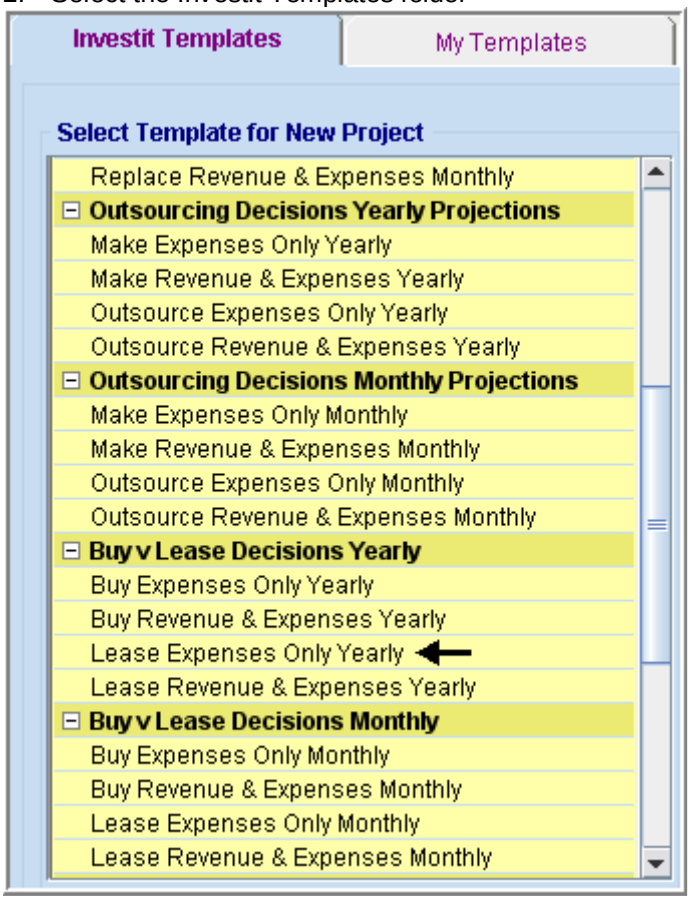
SAVE YOUR PROJECT

INSTRUCTIONS FOR ENTERING THE LEASE ANALYSIS

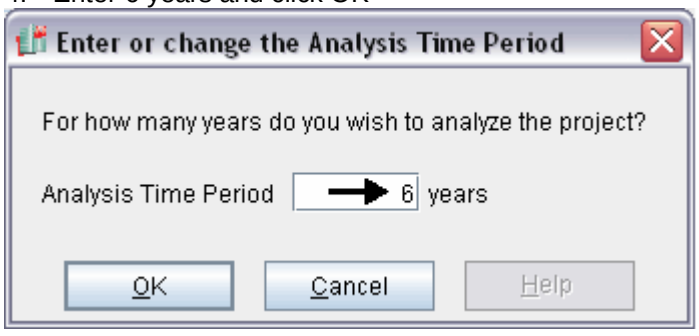
Getting started

The first step is to open the Investit Decisions Template "Lease Expenses Only Yearly" as follows:

1. Open Investit Decisions.
2. Select the Investit Templates folder



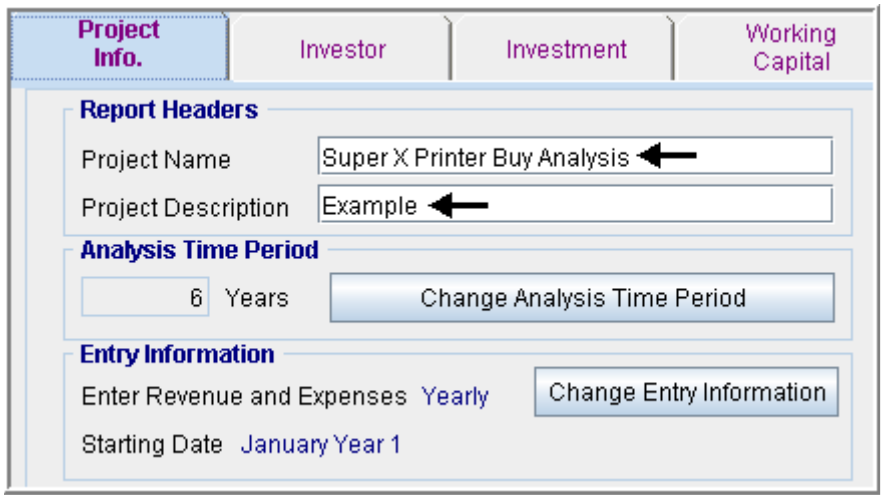
3. Select and open the Investit template "Lease Expenses Only Yearly". The analysis period dialog will open at this point.
4. Enter 6 years and click OK



Entering the project data and information

Project Info Folder

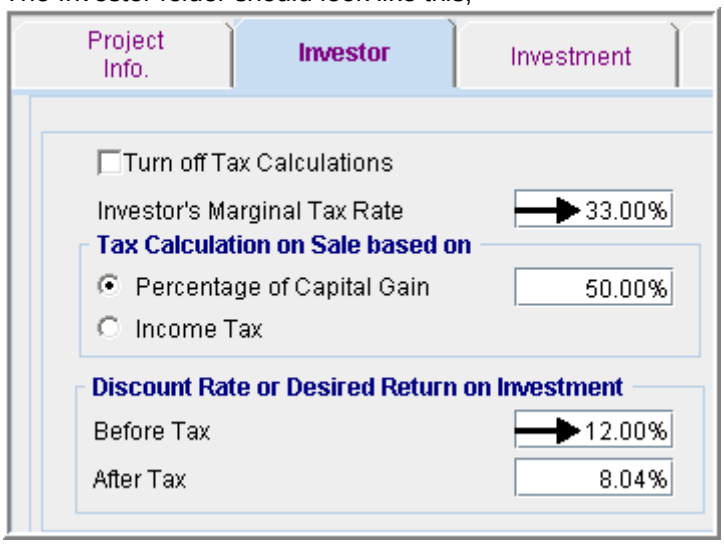
Project Name: Super X Printer Lease Analysis
Project Description: Example
Analysis Period: 6 years



Investor Folder

Investor's Marginal Tax Rate: 33.00%
Discount Rate (Before Tax): 12.00%

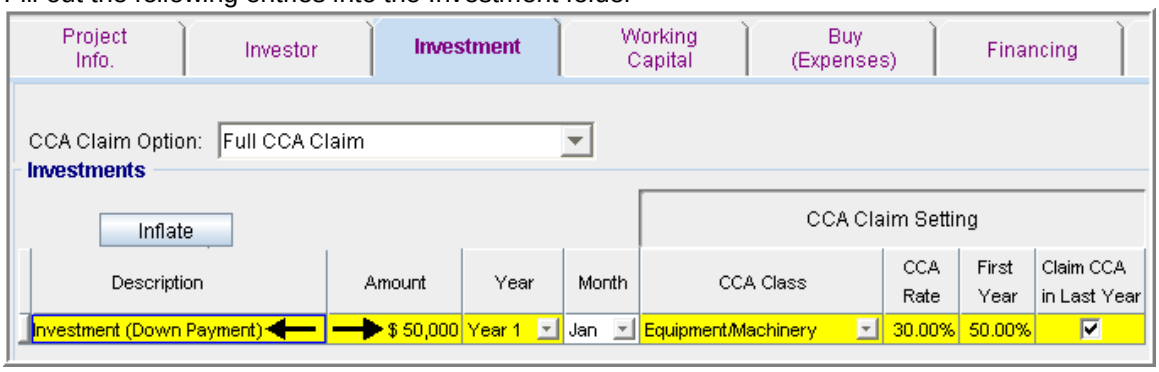
The Investor folder should look like this;



Investment Folder

Description: Investment (Down Payment)
Amount: $50,000
CCA Class: Equipment/Machinery

Fill out the following entries into the Investment folder



Working Capital Folder

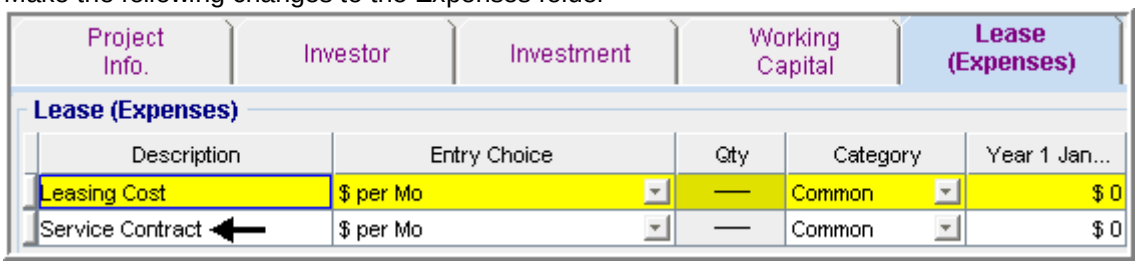
Working Capital: None

Expenses Folder

Leasing Cost: $4,300 per month for 6 years

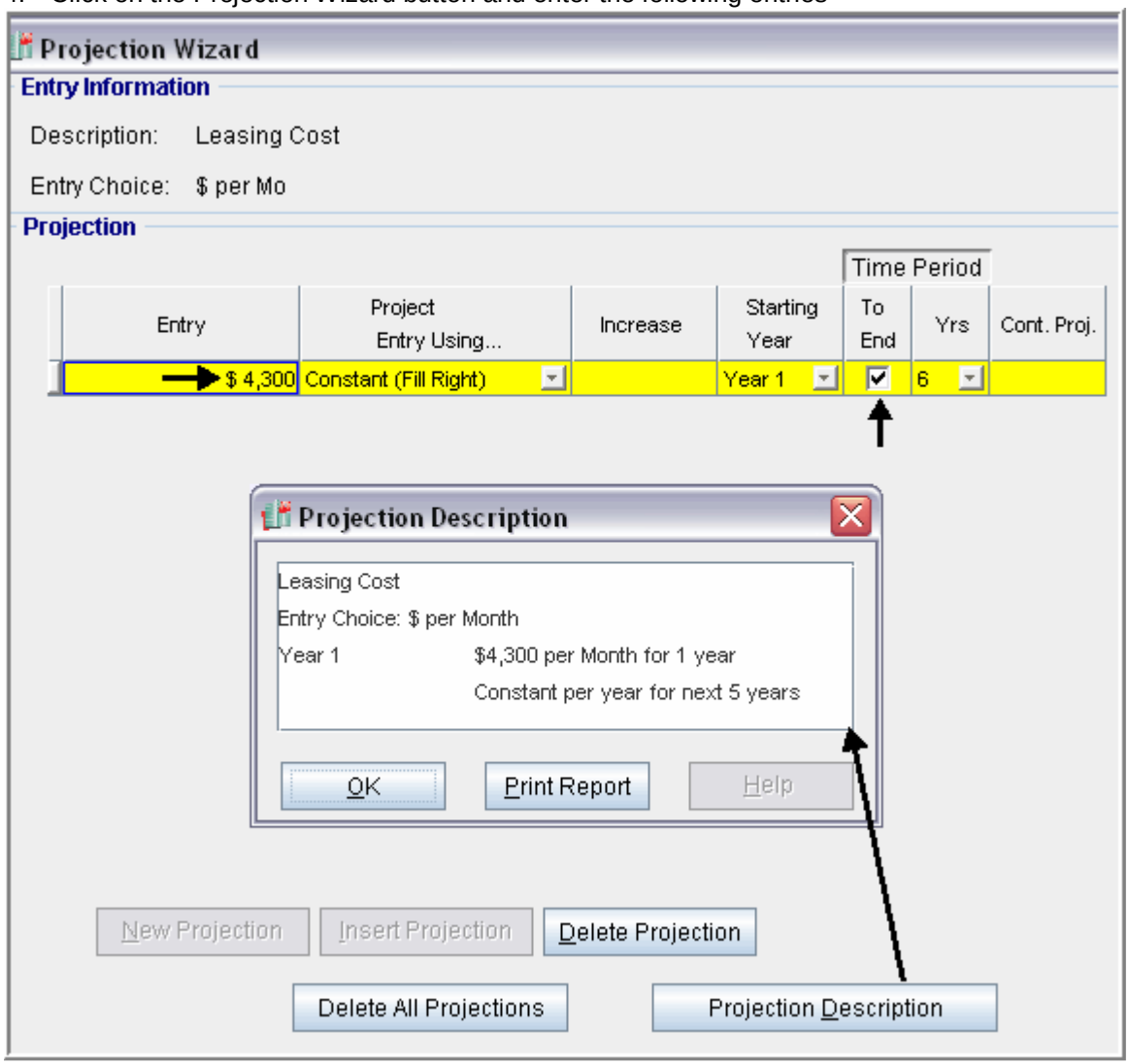
Service Contract: $2,500 per month increasing at 3.00% compounding per year

Make the following changes to the Expenses folder



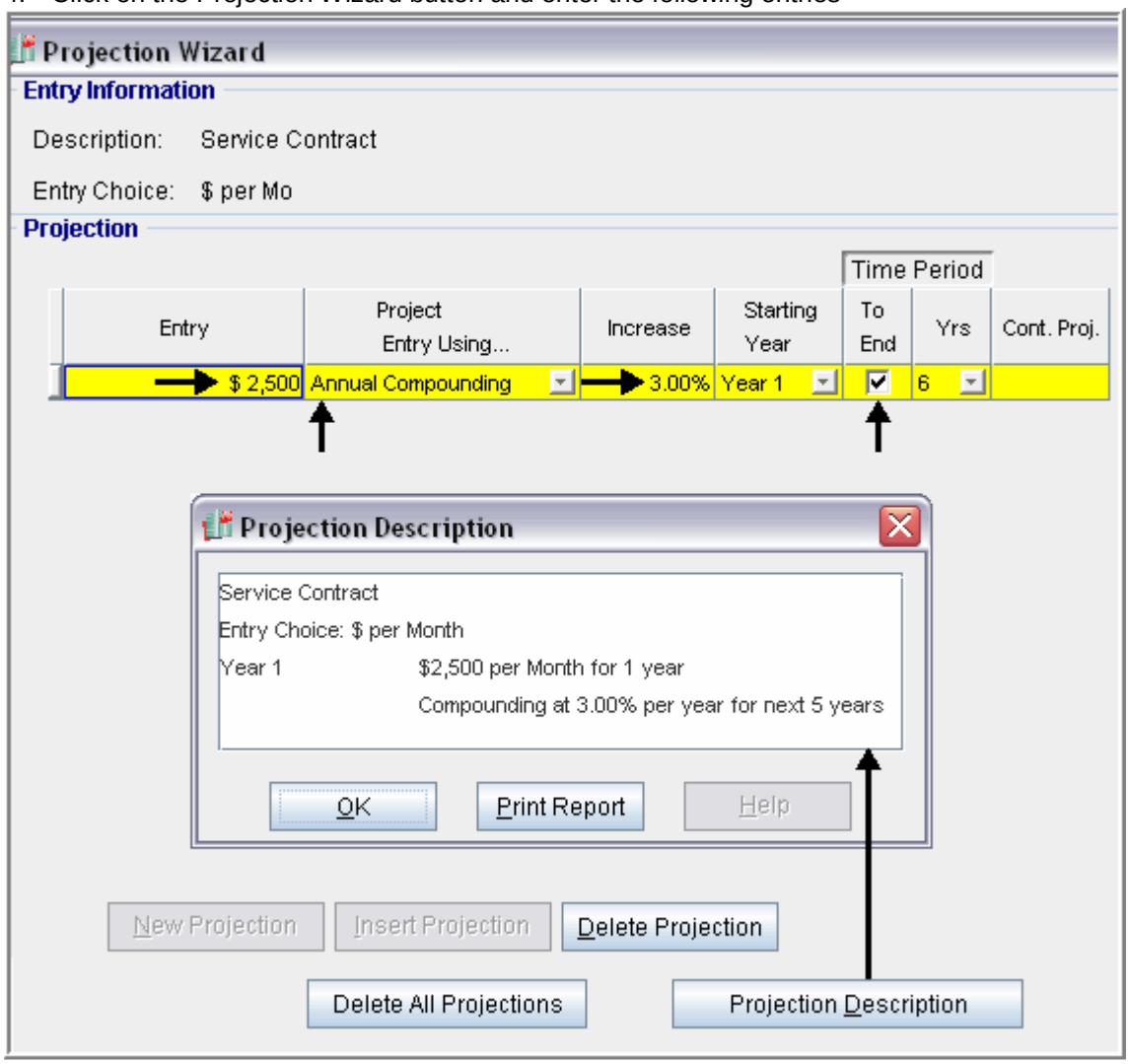
Setting up the Leasing Cost

3. Select row 1 'Leasing Cost'
4. Click on the Projection Wizard button and enter the following entries



Setting up the Service Contract

3. Select row 1 'Service Contract'
4. Click on the Projection Wizard button and enter the following entries



Financing Folder

No financing

Salvage Value Folder

Disposition Costs:
  Removal Costs: None
Salvage Value:
  Super X Printer: $0

No entries need to be made in the Salvage Value folder

SAVE YOUR PROJECT

DECIDING BETEEN "BUY" OR "LEASE"

The Buy versus Lease choice should be always be made after tax because of the different tax treatments for buying versus leasing.

To decide between the two options use;

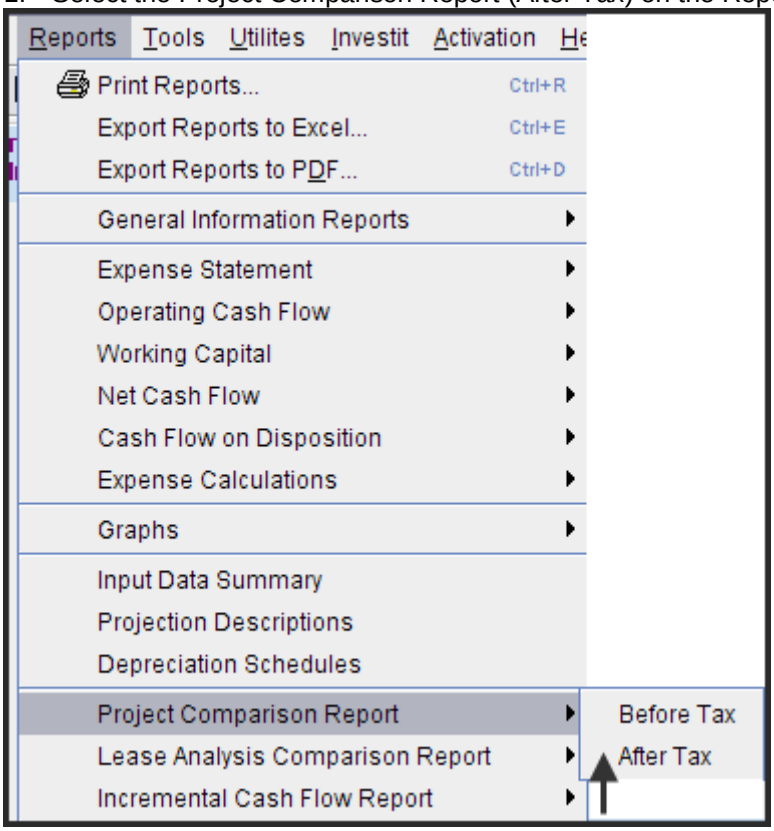
a) The Project Comparison Report (After Tax) and
b) The Incremental Cash Flow Report (After Tax)

Project Comparison Report

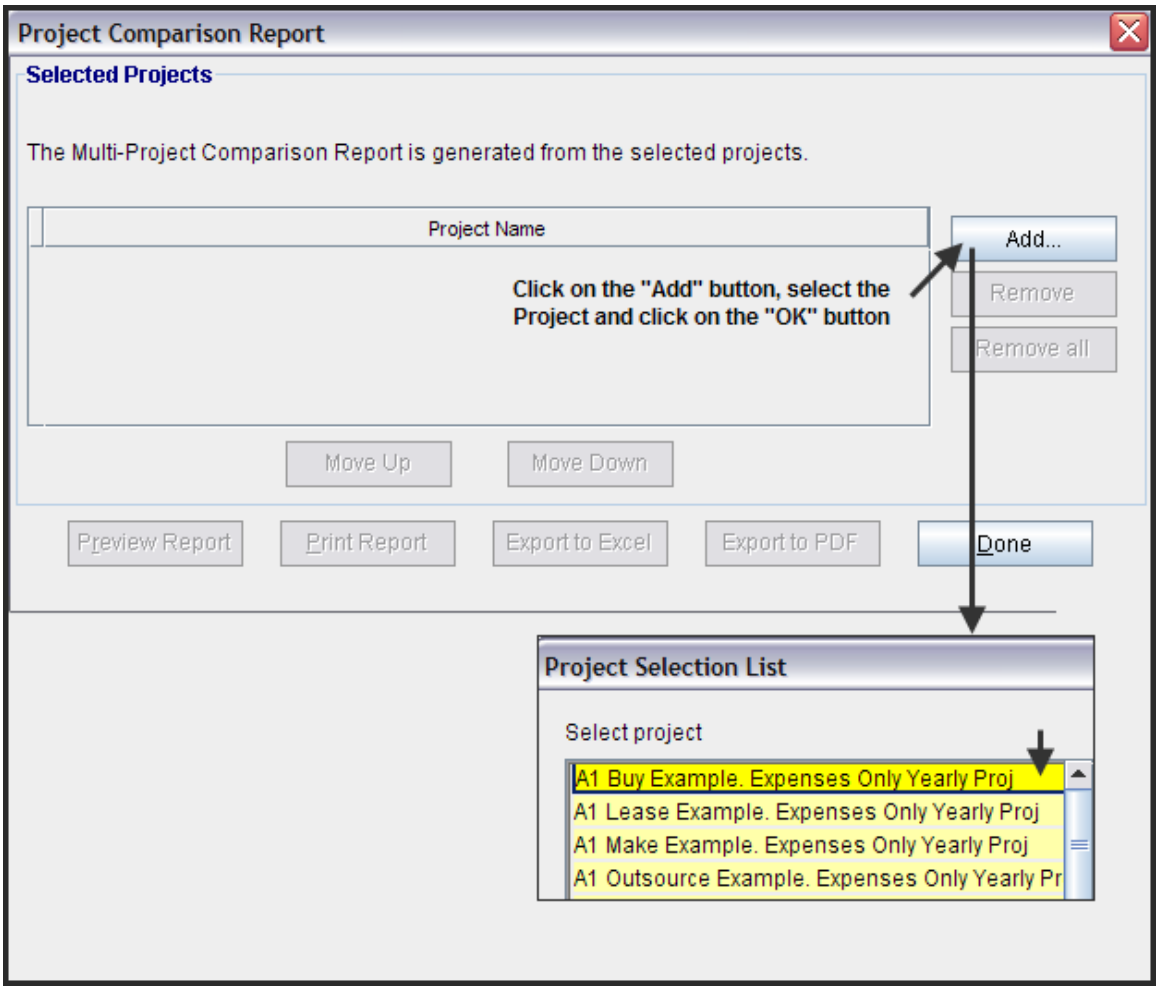
Up to four projects can be compared side by side.

Step involved in selecting the projects for the Project Comparison Report.

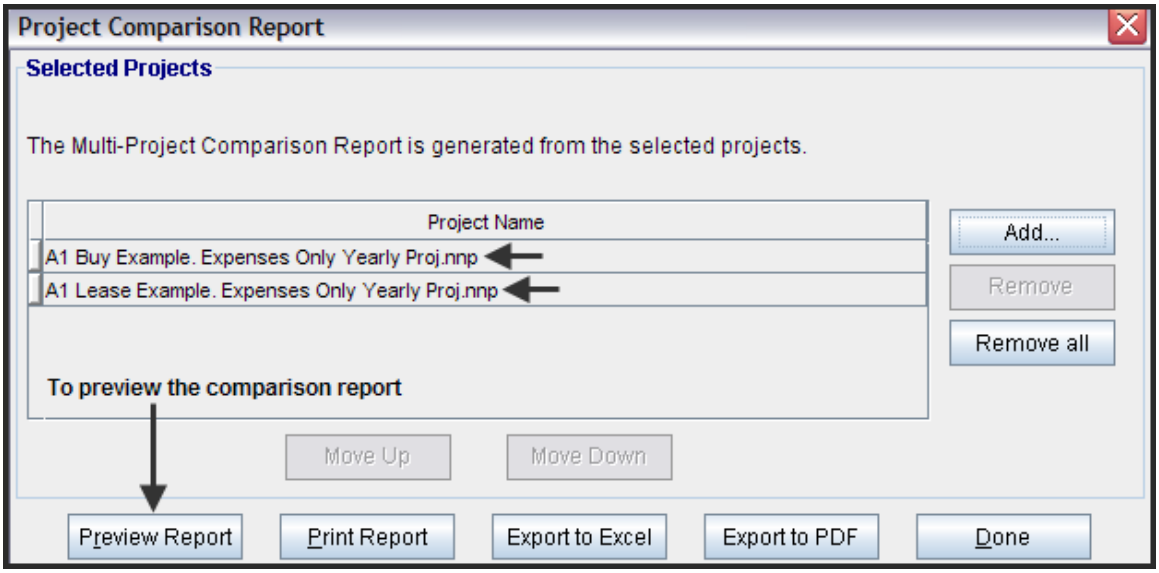
1. Select the Project Comparison Report (After Tax) on the Reports menu



2. On the Project Comparison Report dialog click on the "Add" button to display the Report Selection List. Select the Project and click 'Ok". Repeat the process to add another project as shown below.



3. The diagram below shows the selected projects to be displayed in the “Project Comparison Report”



Project Comparison Report

Project Comparison Report (After Tax)

Net Cash Flow(After Tax)

		A1 Buy Example. Expenses Only Yearly Proj	A1 Lease Example. Expenses Only Yearly Proj
Year	0	(150,000)	(50,000)
	1	(31,936)	(52,197)
	2	(23,941)	(51,068)
	3	(31,887)	(52,949)
	4	(37,877)	(54,475)
	5	(42,536)	(55,753)
	6	14,982	(54,505)
	Total	(303,195)	(370,947)

Financial Return After Tax

Marginal Tax Rate:	35.00%	33.00%
Internal Rate of Return (IRR)	N/A	N/A
MIRR	N/A	N/A
Short term financing rate		
Short term reinvestment rate		
Net Present Value (NPV)	→ ($ 273,401) at 7.80%	→ ($ 298,000) at 7.80%
Annual Equivalency	($ 58,783) at 7.80%	($ 64,071) at 7.80%
Payback Period (Years)	N/A	N/A
Discounted Pay Back Period (Years)	N/A	N/A

Note
Unable to calculate the IRR and MIRR because all the Cash Flows are negative.

Interpretation and decision using the “Comparison Report”

The “Buy” option is the best choice because the ”Buy” option has the lowest Net Present Value (NVP) at 7.80% after tax which is <$273,401> compared to <$298,000> for the Lease option.

Incremental Cash Flow Report

When carrying out “Incremental Cash Flow Analysis” the largest investment goes first for the Incremental Cash Flow Report. In this case it is the “Buy” option

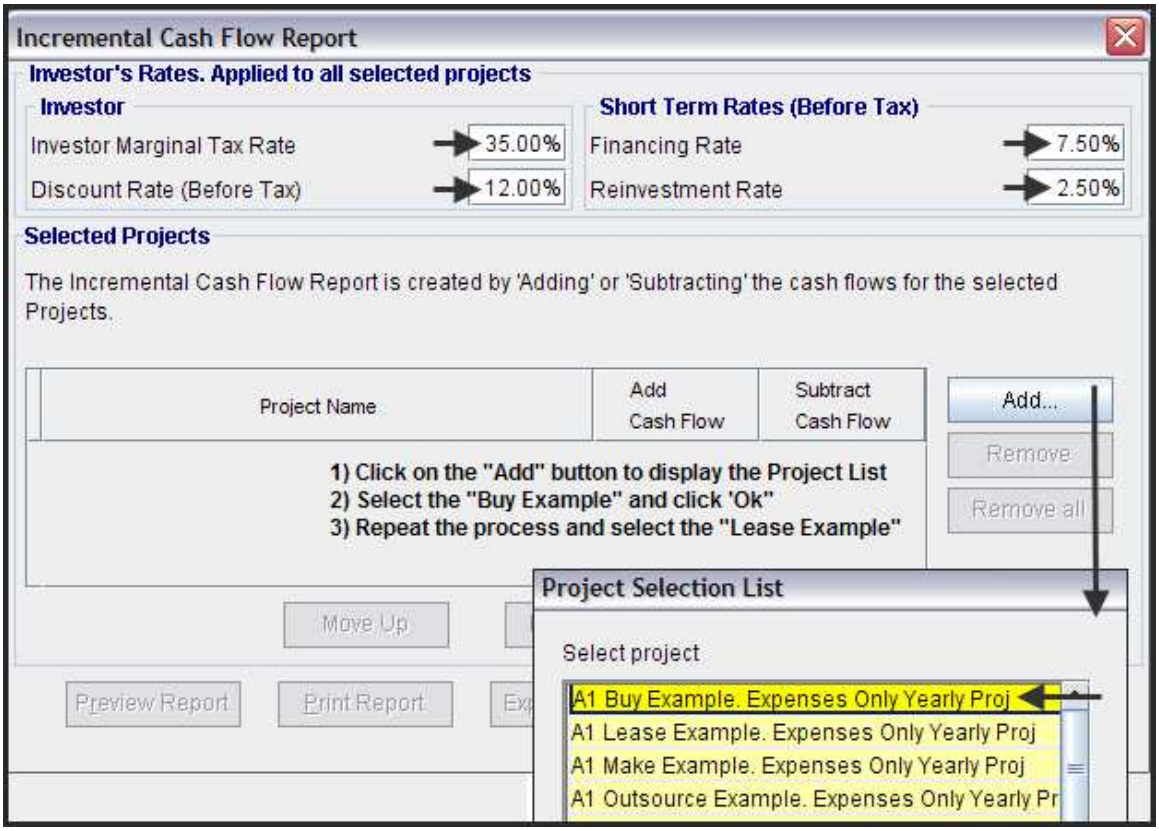
Steps

Select the Incremental Cash Flow (After Tax) on the Report menu

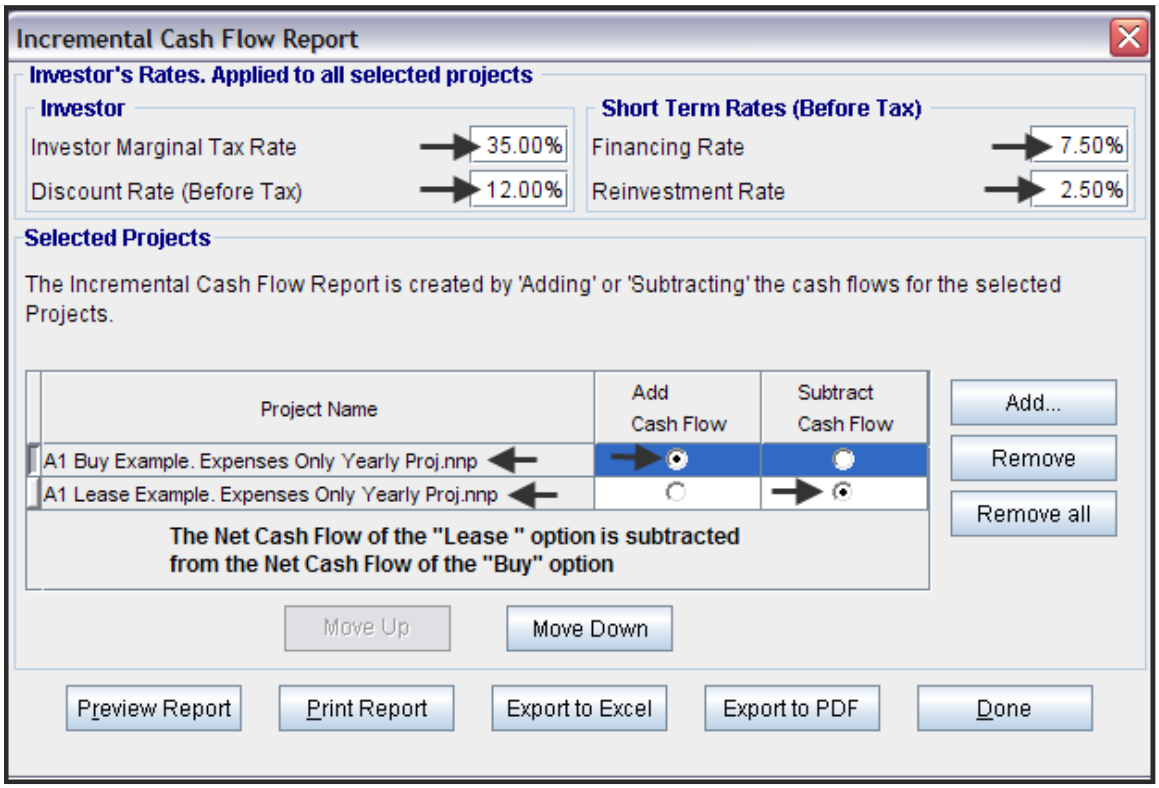
Enter the following;

Investor's Marginal Tax Rate: 35%
Discount Rate: 12.00%
Short Term Rates: Financing Rate 7.50%
Reinvestment Rate 2.50%

On the "Incremental Cash Flow Report" dialog click on the "Add" button to display the Report Selection List. Select the "Buy Example" and click 'Ok". Repeat the process and select the "Lease Example". The "Buy Example" was selected because it involves the larger investment.



The selected projects for the Incremental Cash Flow Report are:



Click on the “Preview Report” button to display the “Incremental Cash Flow Report”

Incremental Cash Flow Report (After Tax) Buy versus Lease

Incremental Cash Flow Report (After Tax)

Net Cash Flow(After Tax)

Incremental Cash Flow Buy Vs. Lease

	Plus A1 Buy Example. Expenses Only Yearly Proj	Minus A1 Lease Example. Expenses Only Yearly Proj	Incremental Net Cash Flow (After Tax)
Year 0	(150,000)	(50,000)	(100,000)
1	(31,936)	(50,415)	18,479
2	(23,941)	(49,163)	25,221
3	(31,887)	(51,102)	19,215
4	(37,877)	(52,663)	14,785
5	(42,536)	(53,959)	11,423
6	14,982	(52,573)	67,555
Total	(303,195)	(359,874)	56,679
After Tax Financial Return			
Marginal Tax Rate:	35.00%	35.00%	35.00%
Internal Rate of Return (IRR)	N/A	N/A	12.12%
Net Present Value (NPV) at 7.80%	($ 273,401)	($ 289,428)	$ 16,026
Modified Internal Rate of Return (MIRR)	N/A	N/A	8.32%
Short term financing rate	4.88%	4.88%	4.88%
Short term reinvestment rate	1.63%	1.63%	1.63%
Annual Equivalency at 7.80%	($ 58,783)	($ 62,228)	$ 3,446
Payback Period	N/A	N/A	5.16 years
Discounted Pay Back Period at 7.80%	N/A	N/A	5.63 years

Note

Unable to calculate the IRR and MIRR because all the Cash Flows are negative.

Interpretation and decision using the "Incremental Cash Flow Report"

The Internal rate of Return (IRR) of "Buying" compared to "Leasing" is 13.05% after tax which exceeds the minimum acceptable return (IRR) of 7.80% after tax

The "Buy" option is the best choice because the "Buy" option has the lowest Net Present Value (NVP) at 7.80% after tax which is <$273,401> compared to <$298,000> for the Lease option.

Both the 'Incremental Cash Flow" approach or choosing the option with the highest Net Present Value (NPV) will result in the same choice when dealing with mutually exclusive investments.