INVESTMENT ANALYSIS YEARLY WITH EXPENSES ONLY COMPARISON
Example USA

INTRODUCTION
This example shows how to compare two investments that;

1. Involves an investment in equipment
2. Incurs operating costs

Uses the “Invest Expenses Only Yearly Projection” template and the “Incremental Cash Flow Report” because revenues are not relevant to the investment decisions.

EXAMPLE
A organization needs to install monitoring equipment to measure the number of units processed per hour and has received proposals from two suppliers and needs to decide which is the most economic alternative over a seven year period.

General Information
Analysis Period: 7 Years
Corporate Marginal Tax Rate (Including State Taxes): 35.00%
Discount Rate (Before Tax): 15.00%
Depreciation: 200% Declining Balance. Recovery Period: 7 years

Supplier A.

Investment: $500,000
Repairs & Maintenance: $35,000 per year increasing at 4.00% per year compounding
Utilities: $250 per month for the first year then increasing at 3.00% per year compounded
Working Capital for spare parts: $30,000
Salvage Value: $15,000

Supplier B

Investment: $400,000
Maintenance Contract: Supplier B will provide a service contract, which includes parts and labor for five years at $4,000 per month for five years and then $5,500 per month for the remaining two years. The service contract excludes overtime calls.
Estimated overtime servicing costs;
Hourly Rate: $60 per hour for the first year then increasing at 3.00% per year compounded
No. of Hours per year: Year 1 - 100 hours increasing at 4.00% compounding per year for the next two years then 7.00% per year compounded
Utilities: $300 per month for the first year then increasing at 3.00% per year compounded
Working Capital: Zero
Salvage Value: $15,000

TEMPLATE SELECTION
The selection of the appropriate template is based on the following;

1. The analysis is not impacted by the revenues, which is the same for both options

2. Projections are Yearly

Template: Invest Expenses Only Yearly projections

STEPS
Using the Invest Expenses Only Yearly projections template;

1. Enter the analysis for Supplier A and save
2. Enter the analysis for Supplier B and save
3. Use the “Project Comparison Report” or the “Incremental Cash Flow Report” to compare the two options

SUMMARY OF THE TEMPLATE INPUT INFORMATION

Supplier A

Project Info Folder
Project Name: Monitor from Supplier A
Project Description: Production Line Measuring System
Analysis Period: 7 years

Investor Folder
Marginal Tax Rate: 35.00%
Discount Rate (Before Tax): 15.00%

Investment Folder
Description: Equipment
Amount: $500,000
Depreciation Method: Personal Property 200% DB
Recovery Period: 7.0 years

Working Capital Folder
Working Capital: Year 1 $30,000

Expenses Folder
Repairs & Maintenance: $35,000 per year increasing at 4.00% per year compounded
Utilities: $250 per month for the first year then increasing at 3.00% per year compounded

Financing Folder
No financing

Salvage Value Folder
Salvage Value: $15,000

Supplier B

Project Info Folder
Project Name: Monitor from Supplier B
Project Description: Production Line Measuring System
Analysis Period: 7 years

Investor Folder
Marginal Tax Rate: 35.00%
Discount Rate (Before Tax): 15.00%

Investment Folder
Description: Equipment
Amount: $400,000
Depreciation Method: Personal Property 200% DB
Recovery Period: 7.0 years

Working Capital Folder
Working Capital: Zero

Expenses Folder
Maintenance Contract: $4,000 per Month for five years then $5,500 for the remaining two years compounding
Overtime Service Costs:
Hourly Rate: $60 per Hour for first year then increasing at 3.00% per year compounded
No. of Hours per Year: 100 for the first year then increasing at 4.00% compounding for the next two years then 7.00% compounding per year for the remaining years
Utilities: $300 per month for the first year then increasing at 3.00% per year compounded

Financing Folder
No financing

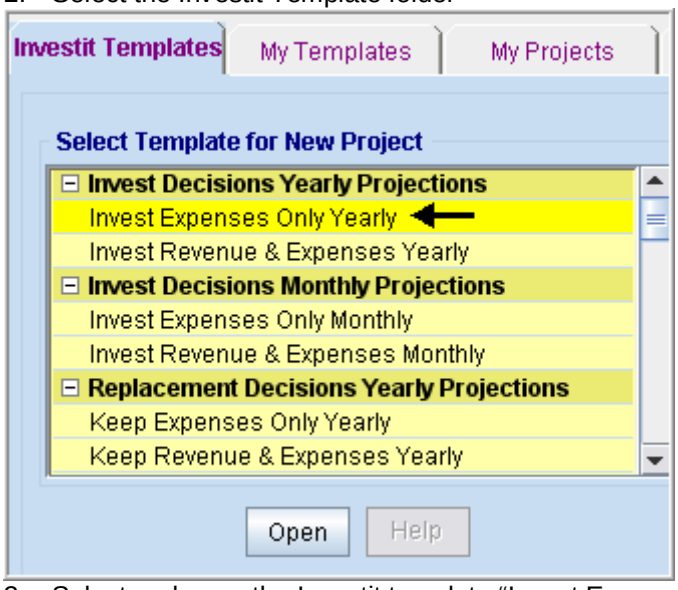
Salvage Value Folder
Salvage Value: $15,000

INSTRUCTIONS OR ENTERING SUPPLIER A

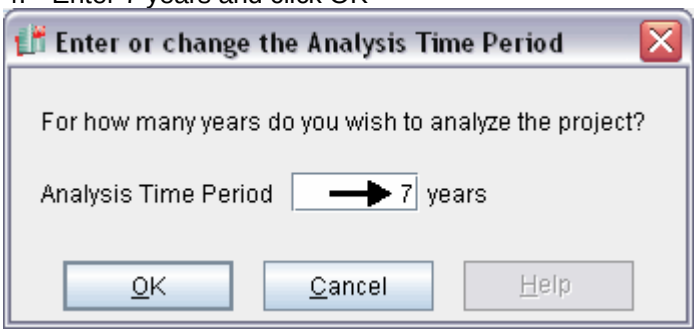
Getting started

The first step is to open the Investit Decisions Template “Invest Expenses Only Yearly” as follows:

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



3. Select and open the Investit template “Invest Expenses Only Yearly”. The analysis period dialog will open at this point.
4. Enter 7 years and click OK

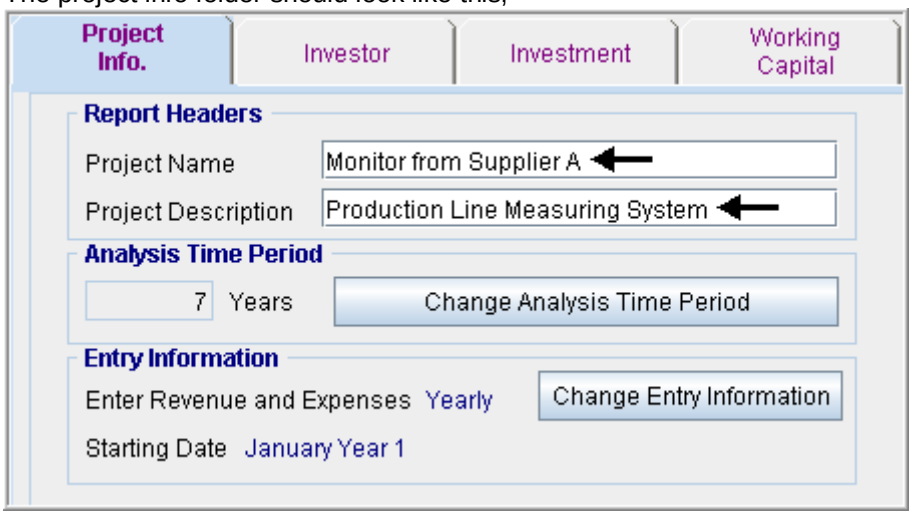


Entering the project data and information

Project Info Folder

1. Enter the Property Name: Monitor from Supplier A
2. Enter Description: Production Line Measuring System

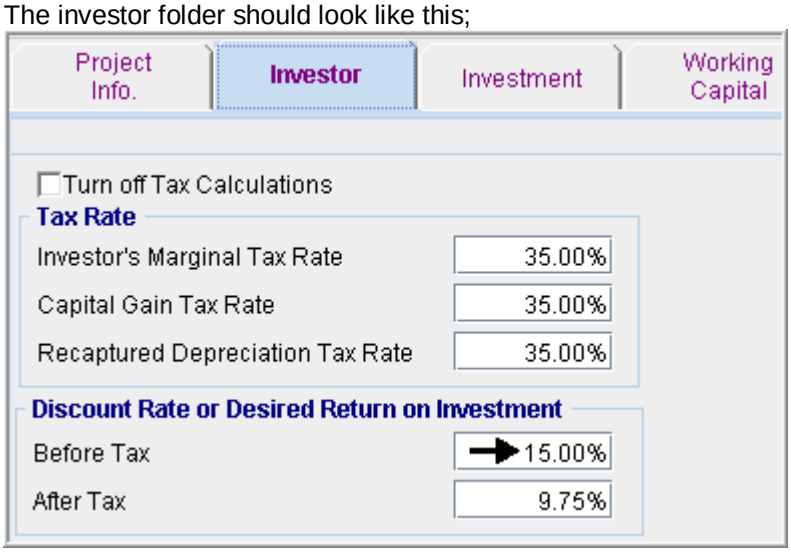
The project info folder should look like this;



Investor Folder

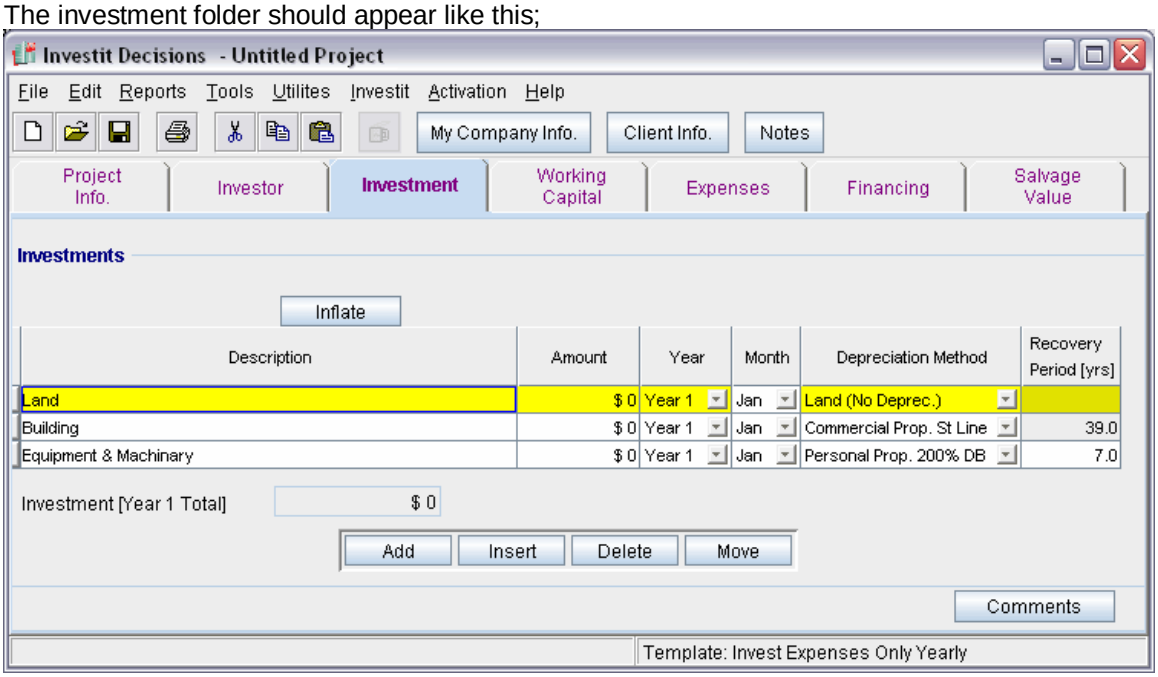
1. Enter the Discount Rate Before Tax: 15.00%

The investor folder should look like this;



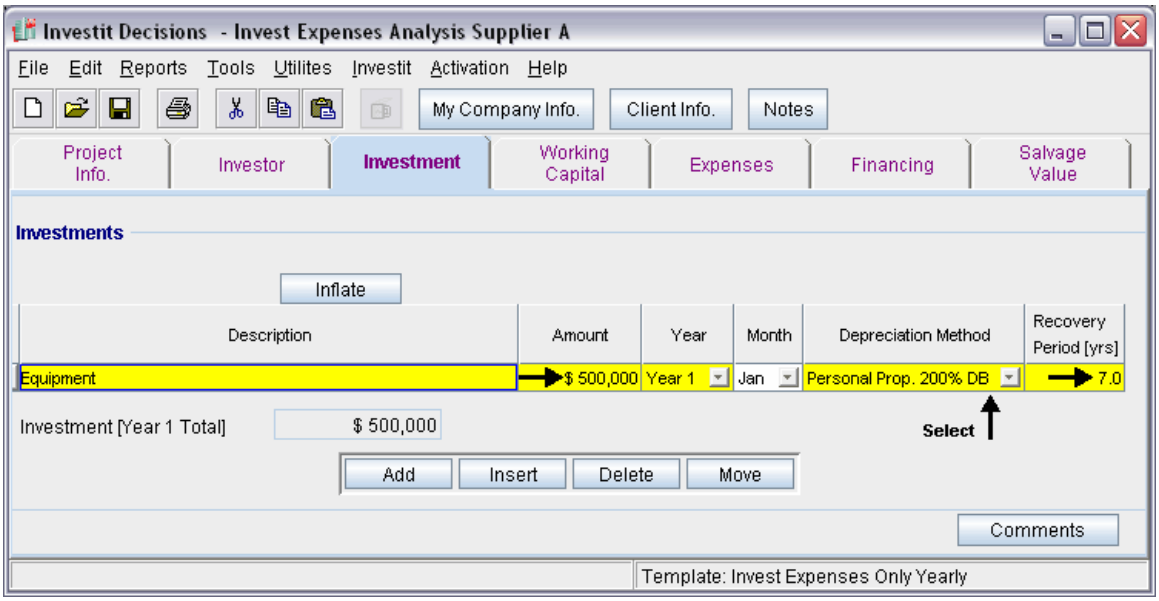
Investment Folder

The investment folder should appear like this;



1. Individually Delete rows ‘Land’ and ‘Building’ by selecting the row and clicking on the “Delete” button.
2. Change ‘Equipment & Machinery’ to ‘Equipment’
3. Complete the Investment folder as follows:

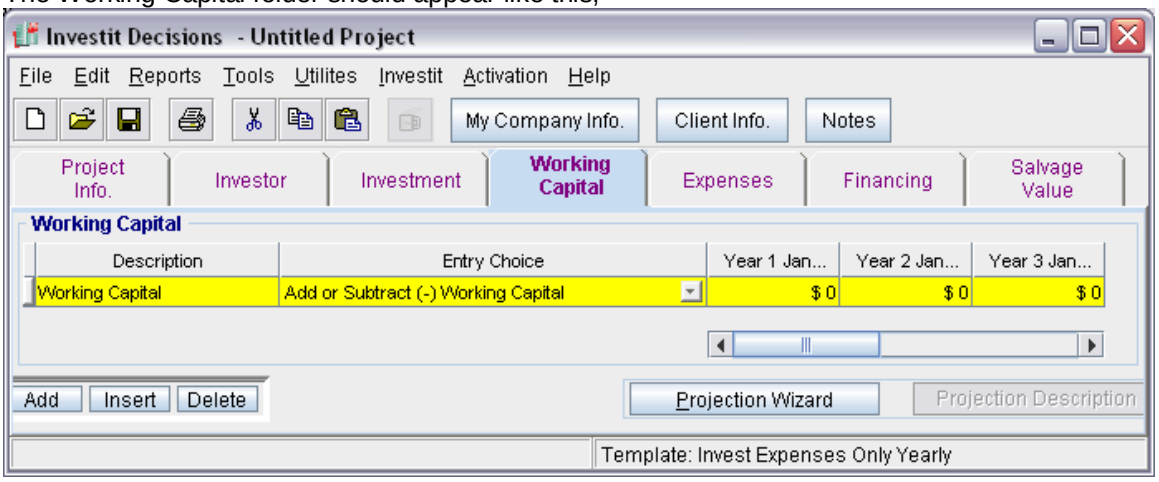
The Investment folder should now look like this



Working Capital Folder

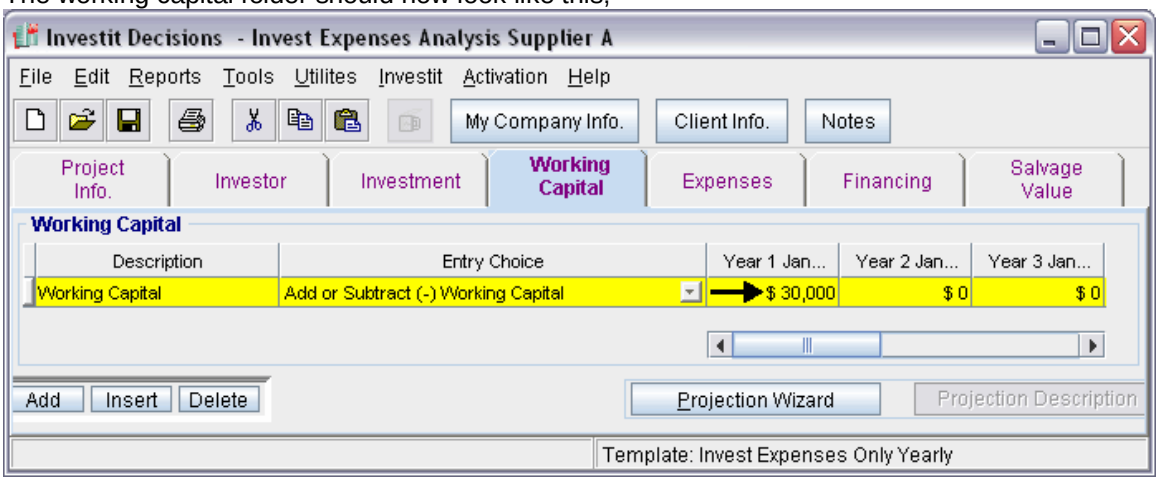
Working Capital: $30,000
Steps for setting up the Working Capital folder

The Working Capital folder should appear like this;



1. Enter $30,000 into the grid for Year 1 Jan

The working capital folder should now look like this;

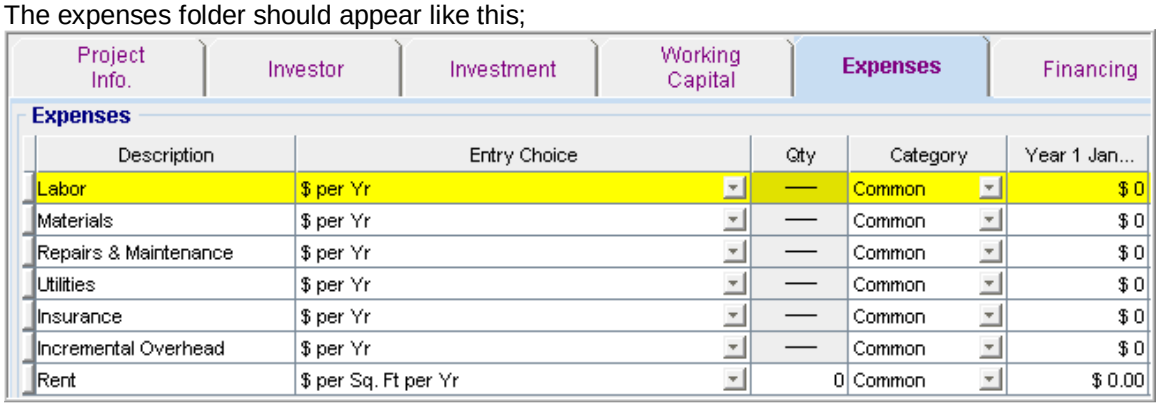


Expenses Folder

Repairs & Maintenance: $35,000 per year increasing at 4.00% per year compounded.

Utilities: $250 per month for the first year then increasing at 3.00% per year compounded.

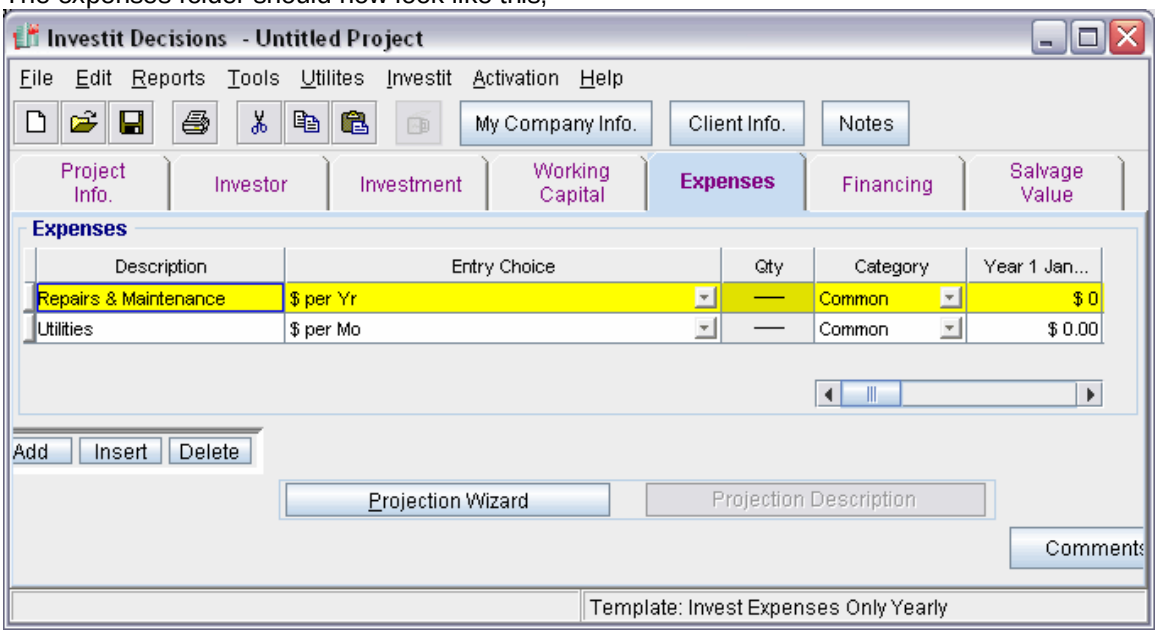
The expenses folder should appear like this;



Steps for setting up the Expenses folder

1. Individually Delete rows ‘Labor’, ‘Materials’, ‘Insurance’, ‘Incremental Overhead’ and ‘Rent’ by selecting the row and clicking on the “Delete” button.
2. Select row with description ‘Utilities’
3. Select the entry choice ‘$ per Mo’

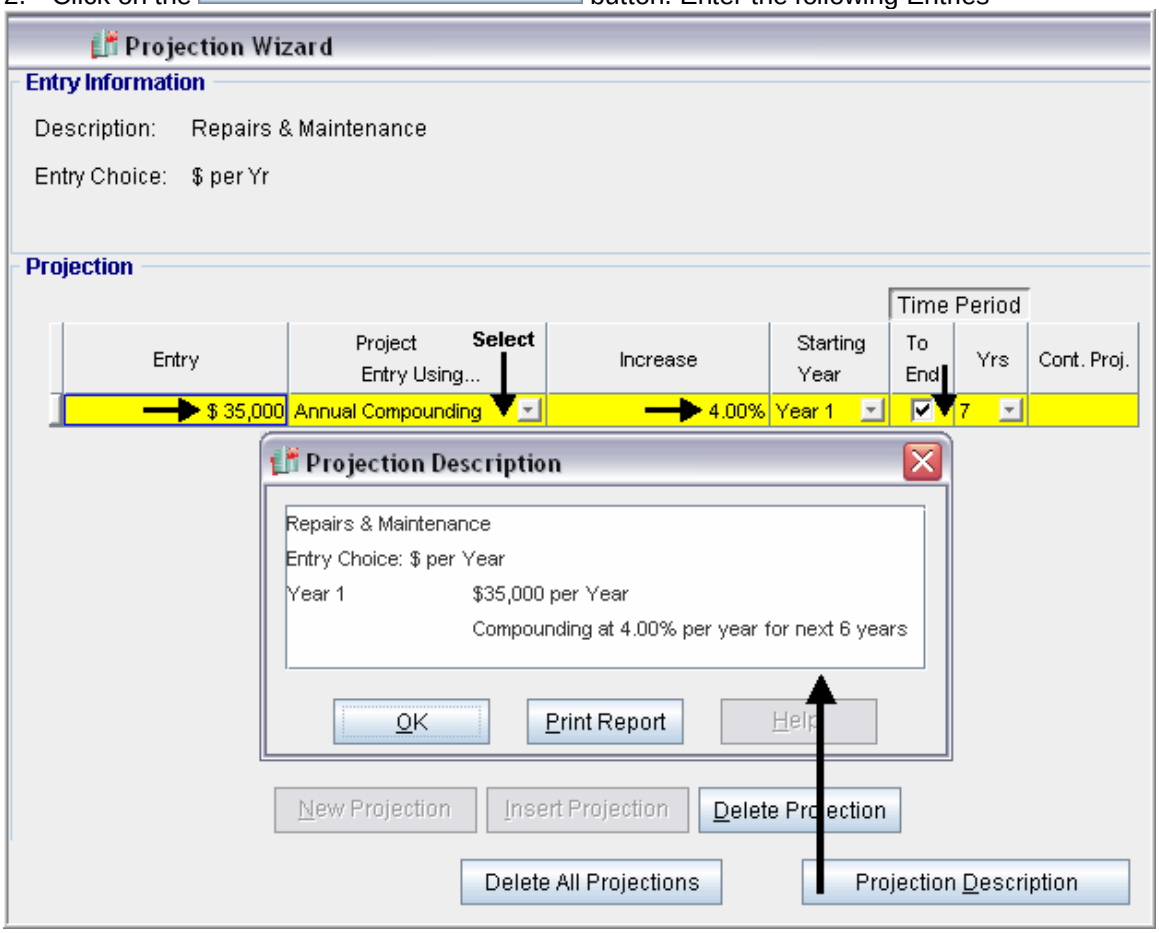
The expenses folder should now look like this;



Steps for setting up the Repairs & Maintenance

1. Select row 1 'Repairs & Maintenance'
2. Click on the 

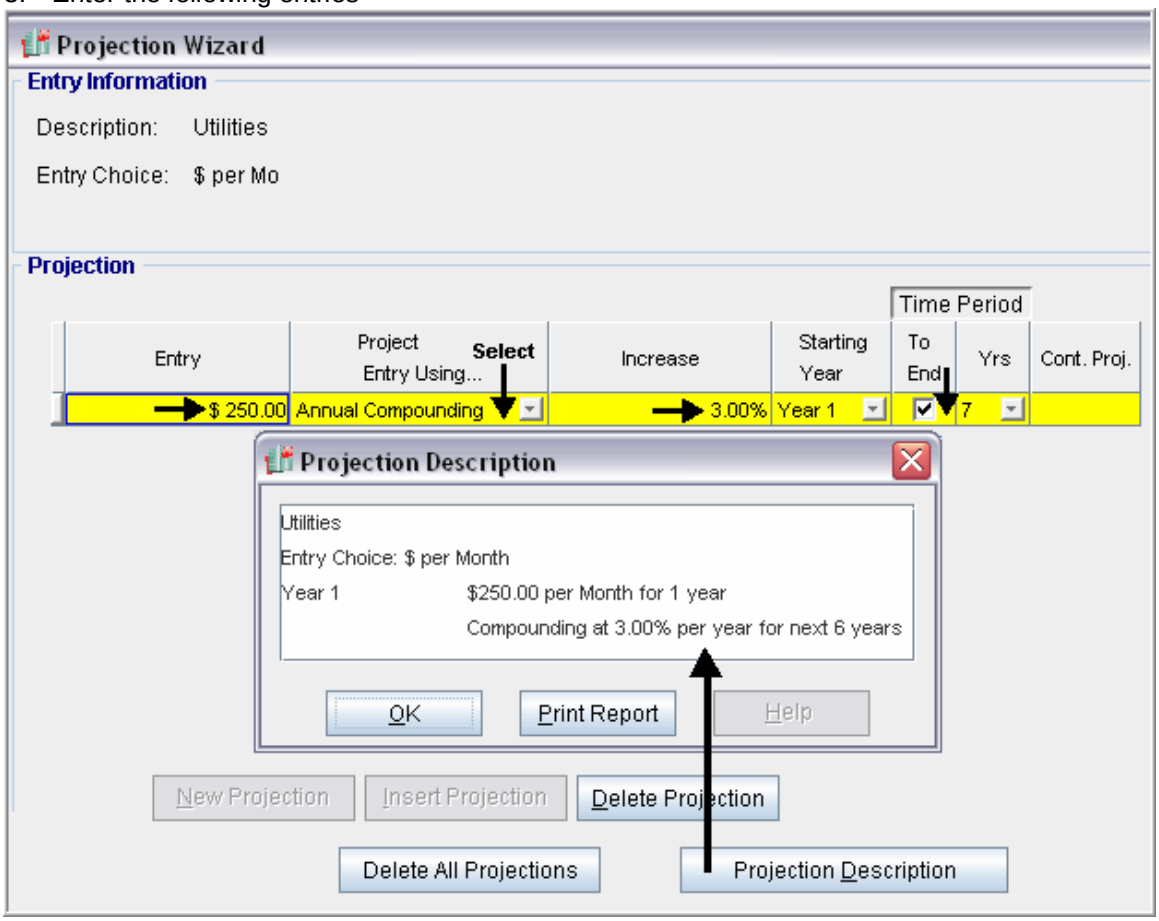
button. Enter the following Entries



Press OK to save your entries and return to the Expenses folder

Steps for setting up the Utilities

1. Select row 1 'Utilities'
2. Click on the Projection Wizard button.
3. Enter the following entries



Press OK to save your entries and return to the Expenses folder

Financing Folder

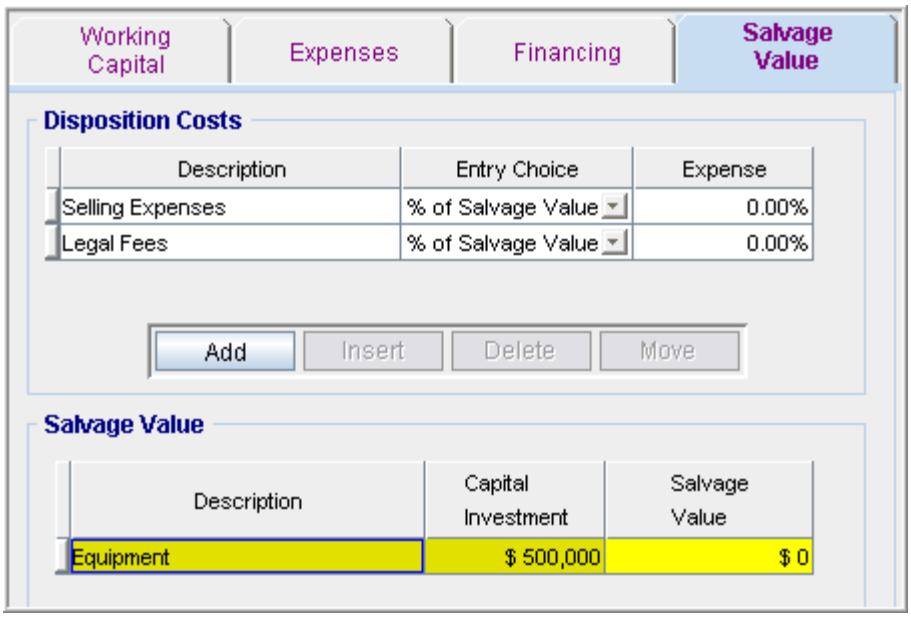
This example does not contain any financing.

Salvage Value Folder

Salvage Value: $15,000

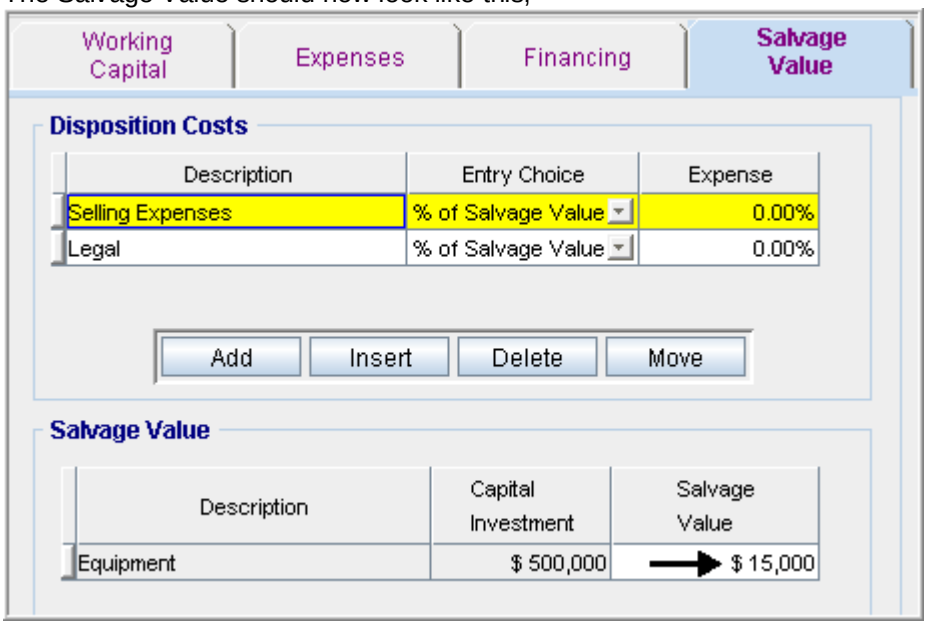
This example does not contain any Disposition Costs so only the Salvage Value needs to be entered.

The Salvage Value should appear like this;



Enter $15,000 into the grid for Equipment

The Salvage Value should now look like this;



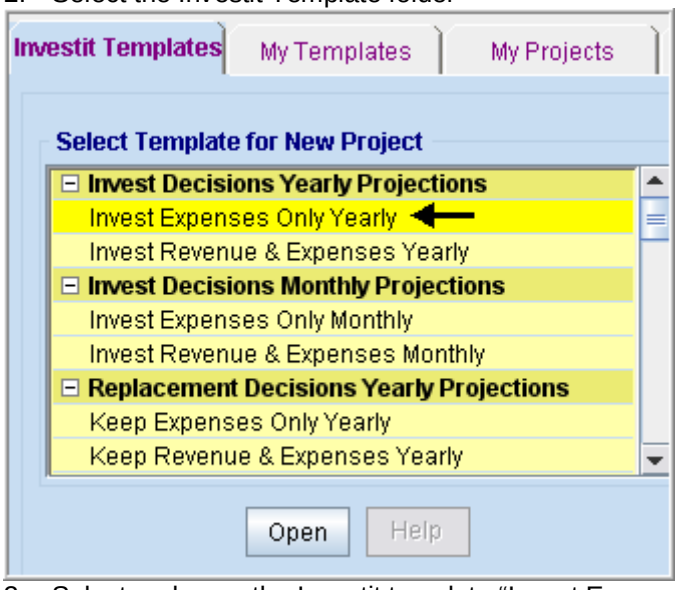
SAVE YOUR PROJECT

INSTRUCTIONS OR ENTERING SUPPLIER B

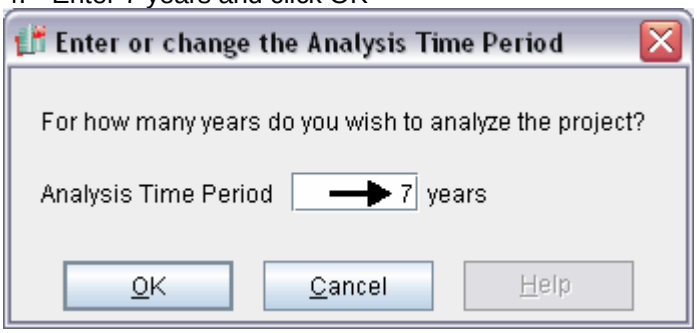
Getting started

The first step is to open the Investit Decisions Template “Invest Expenses Only Yearly” as follows:

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



3. Select and open the Investit template “Invest Expenses Only Yearly”. The analysis period dialog will open at this point.
4. Enter 7 years and click OK

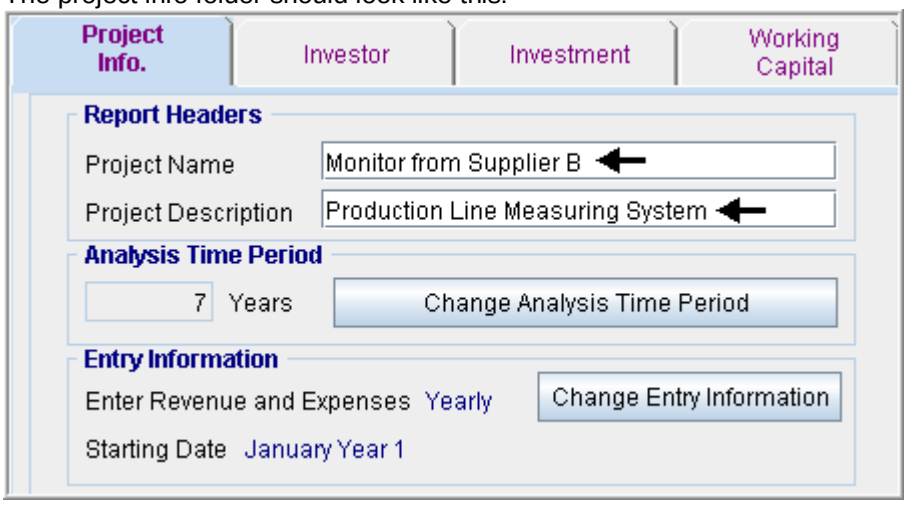


Entering the project data and information

Project Info Folder

1. Enter the Property Name: Monitor from Supplier B
2. Enter Description: Production Line Measuring System

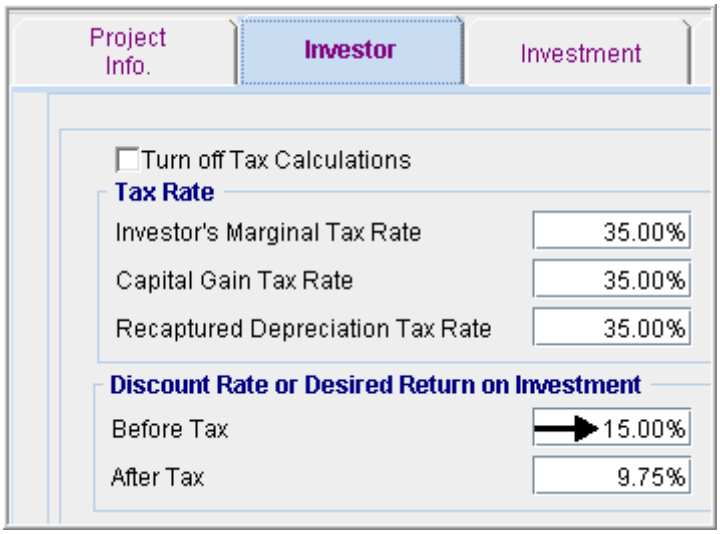
The project info folder should look like this:



Investor Folder

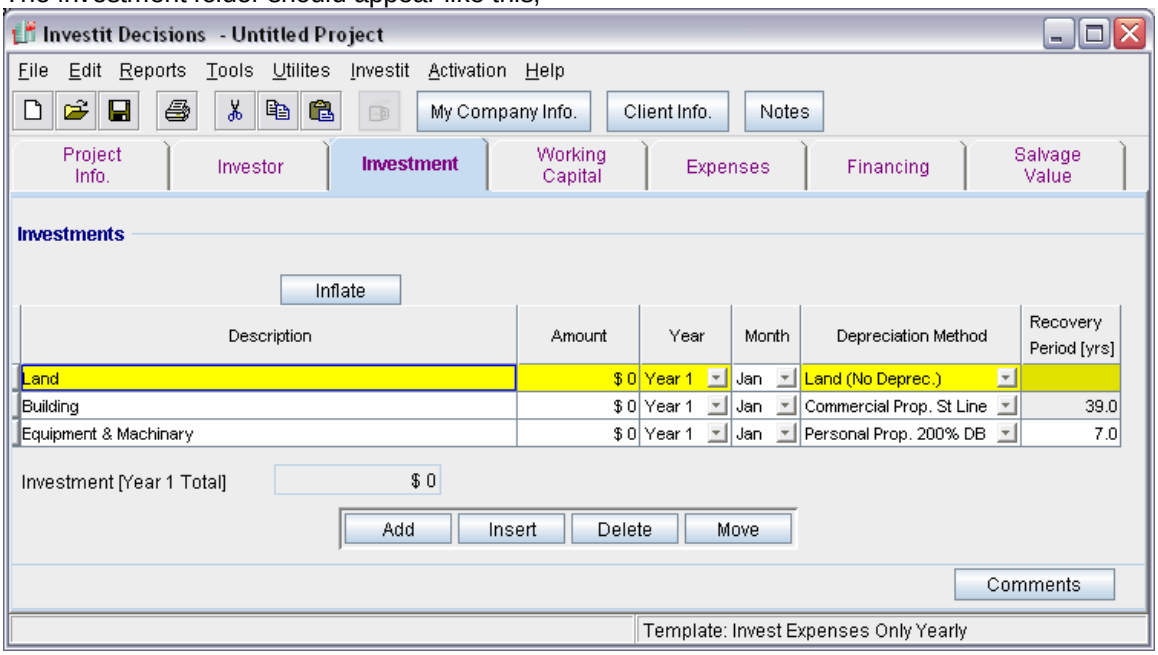
1. Enter the Discount Rate Before Tax: 15.00%

The investor folder should look like this:

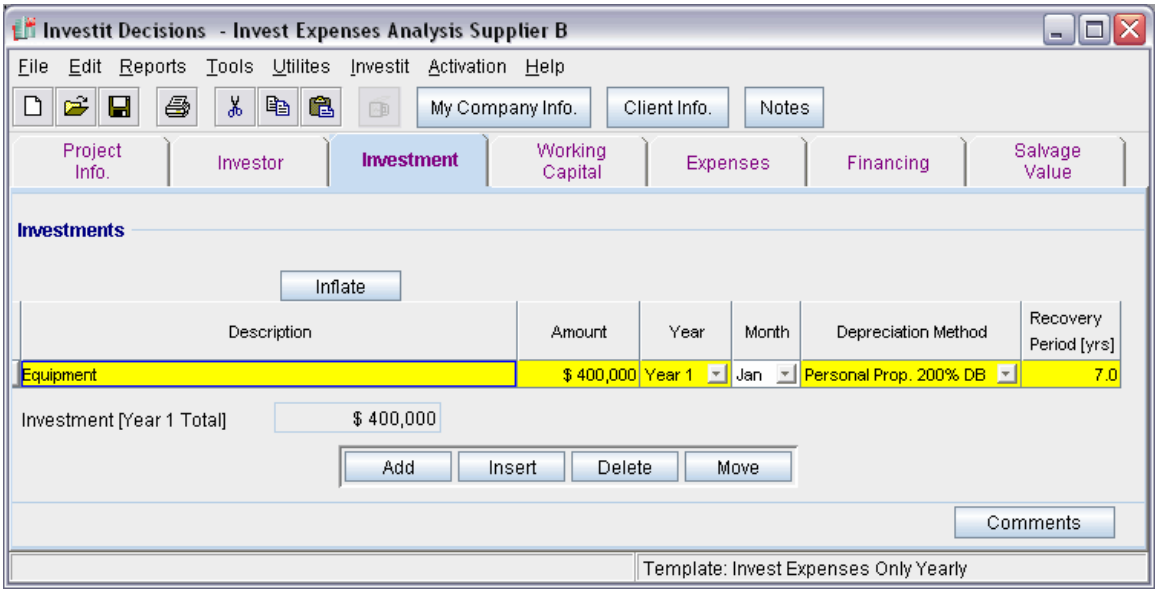


Investment Folder

The investment folder should appear like this;



1. Individually Delete rows 'Land' and 'Building' by selecting the row and clicking on the "Delete" button.
2. Change 'Equipment & Machinery' to 'Equipment'
3. Complete the Investment folder as follows:



Working Capital Folder

The example for supplier B does not contain any Working Capital.

Expenses Folder

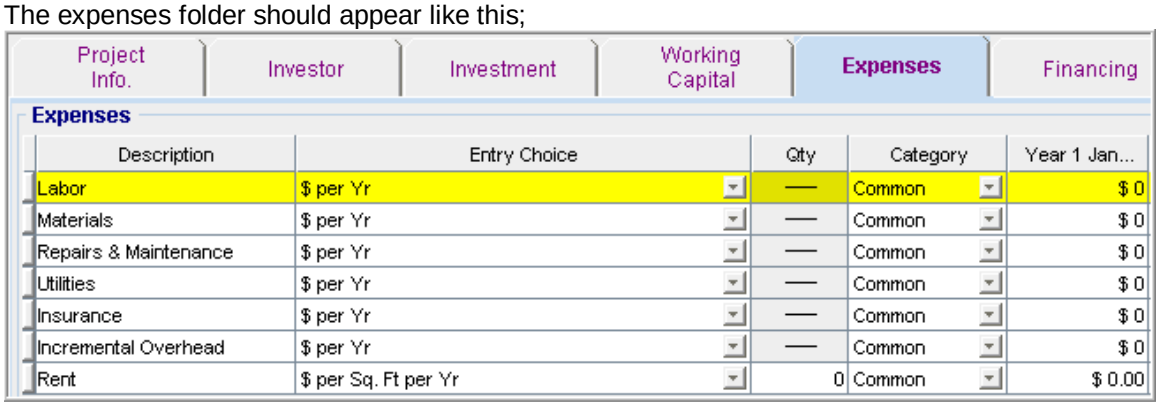
Maintenance Contract: $4,000 per Month for five years then $5,500 for the remaining two years compounding

Overtime Service Costs:

Hourly Rate: $60 per Hour for first year then increasing at 3.00% per year compounded
No. of Hours per Year: 100 for the first year then increasing at 4.00% compounding for the next two years then 7.00% compounding per year for the remaining years

Utilities: $300 per month for the first year then increasing at 3.00% per year compounded

The expenses folder should appear like this;



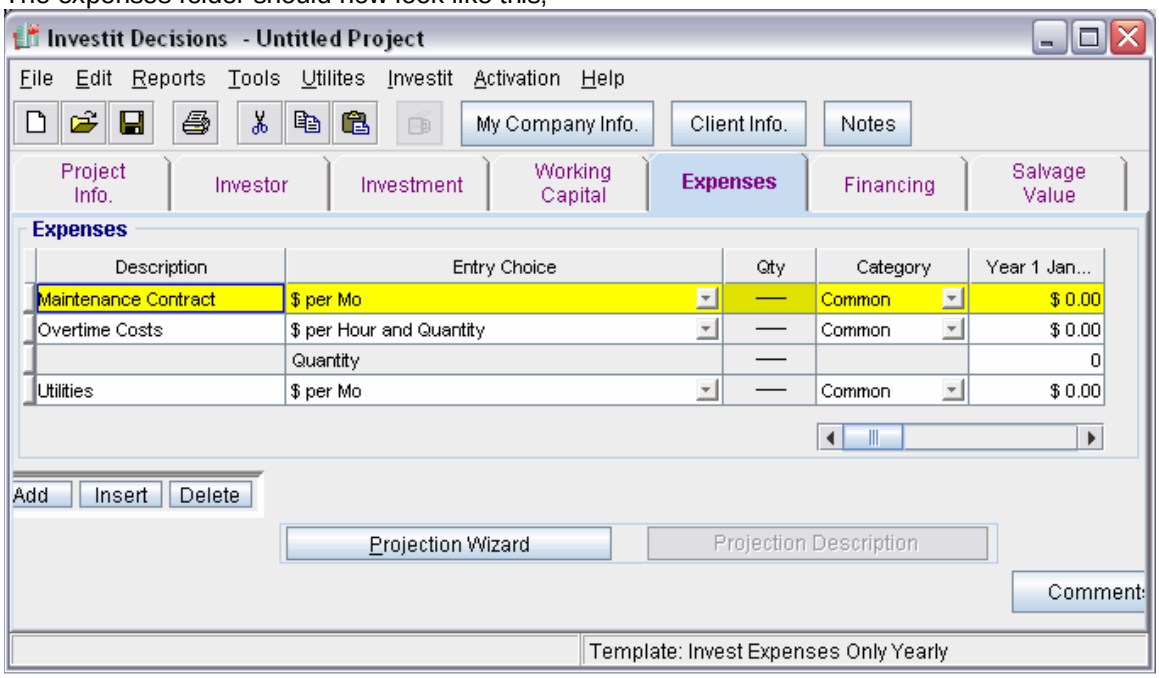
Steps for setting up the Expenses folder

1. Select row 1 ‘Labor’
2. Enter Description ‘Maintenance Contract’
3. Select Entry Choice ‘$ per Mo’

4. Select row 2 with description ‘Materials’
5. Enter Description ‘Overtime Costs’
6. Select Entry Choice ‘$ per Hour and Quantity’

7. Individually Delete rows ‘Repairs & Maintenance’, ‘Insurance’, ‘Incremental Overhead’ and ‘Rent’ by selecting the row and clicking on the “Delete” button

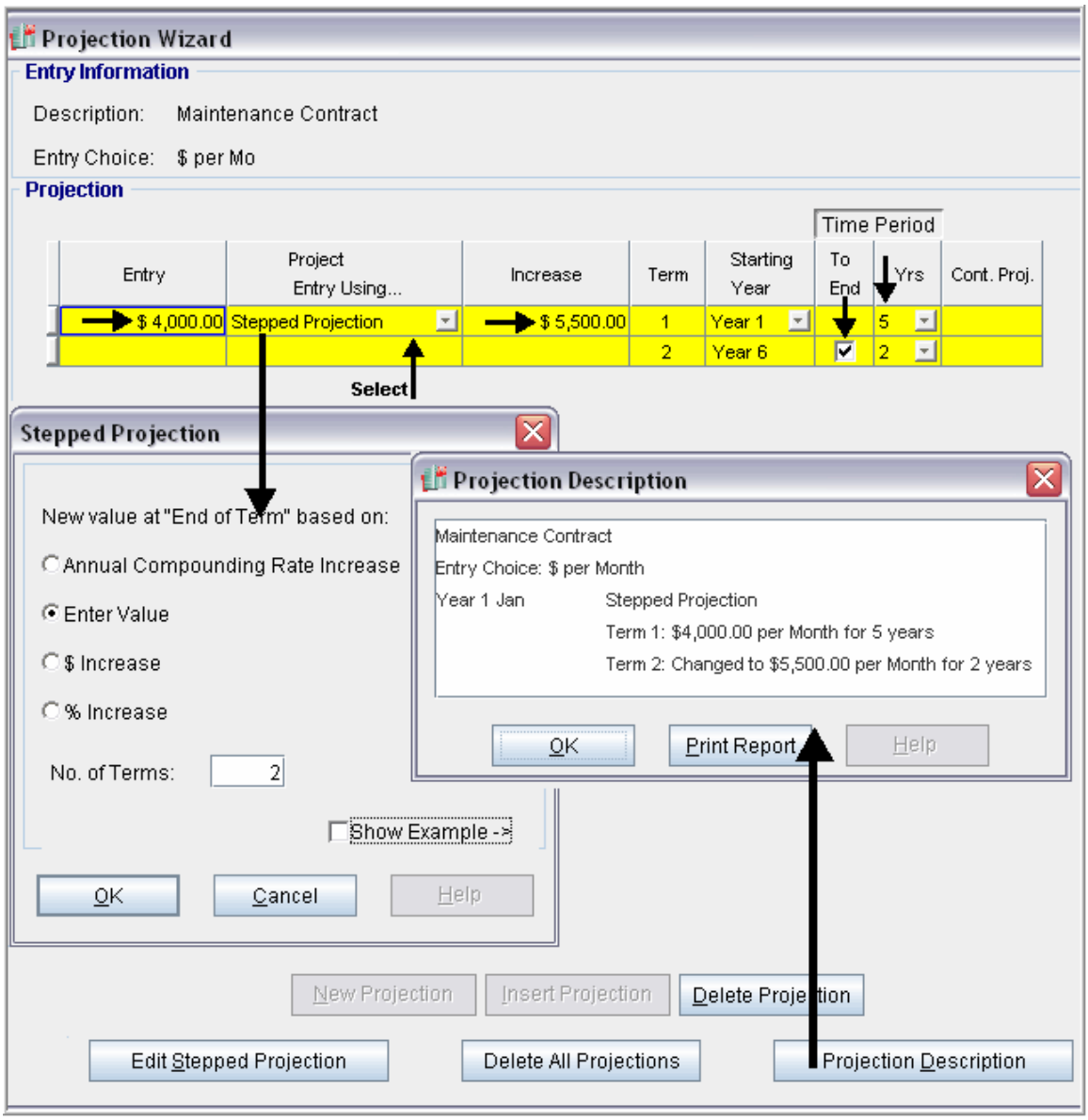
The expenses folder should now look like this;



Steps for setting up the Maintenance Contract

1. Select row 1 'Maintenance Contract'
2. Click on the 

button. Enter the following entries

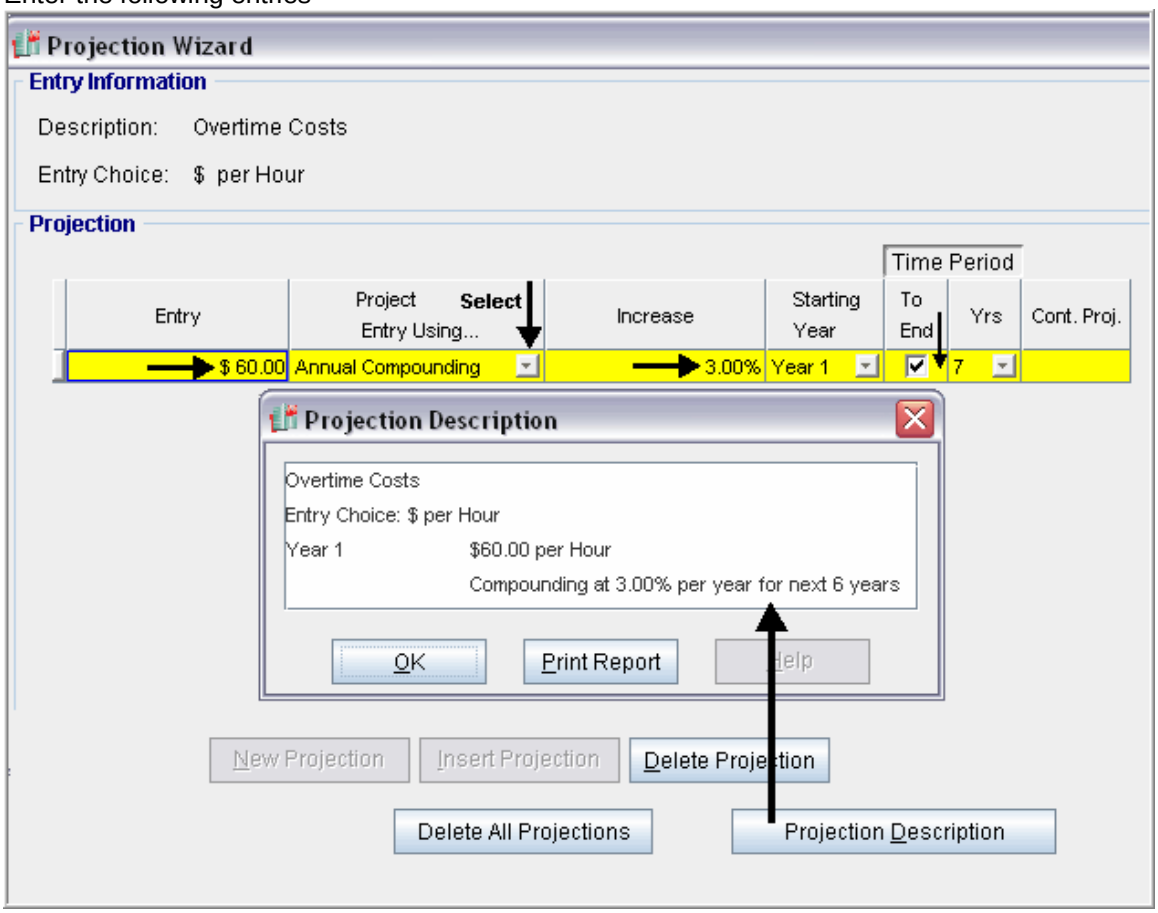


Press OK in the projection wizard to save your entries and return to the Expenses folder

Steps for setting up the Overtime Costs

1. Select row with description 'Overtime Costs'
2. Click on the Projection Wizard button

Enter the following entries

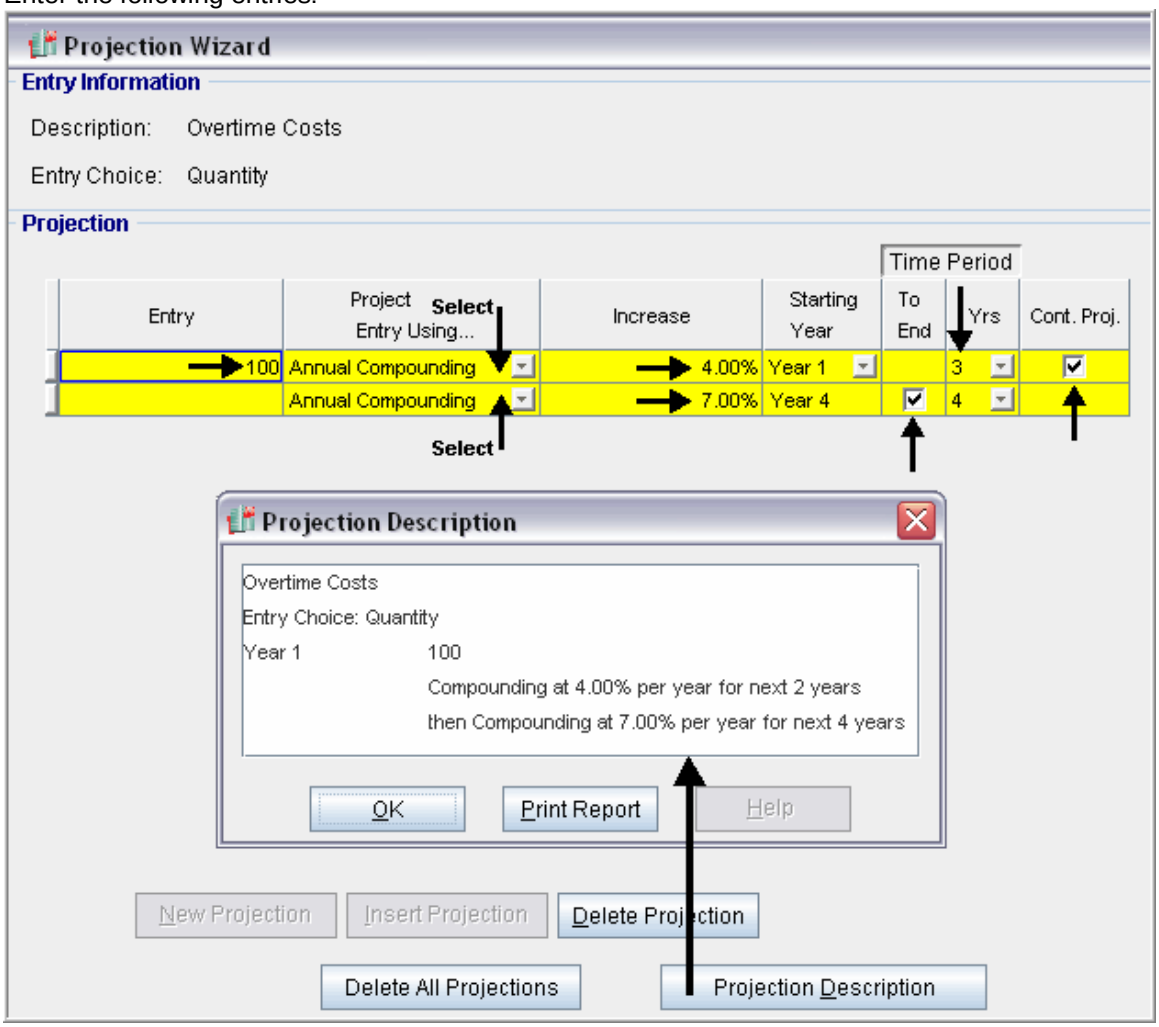


Press OK to save your entries and return to the Expenses folder

Steps for setting up the Quantity

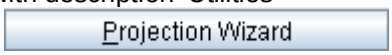
1. Select row with entry choice 'Quantity'
2. Click on the Projection Wizard button.

Enter the following entries:

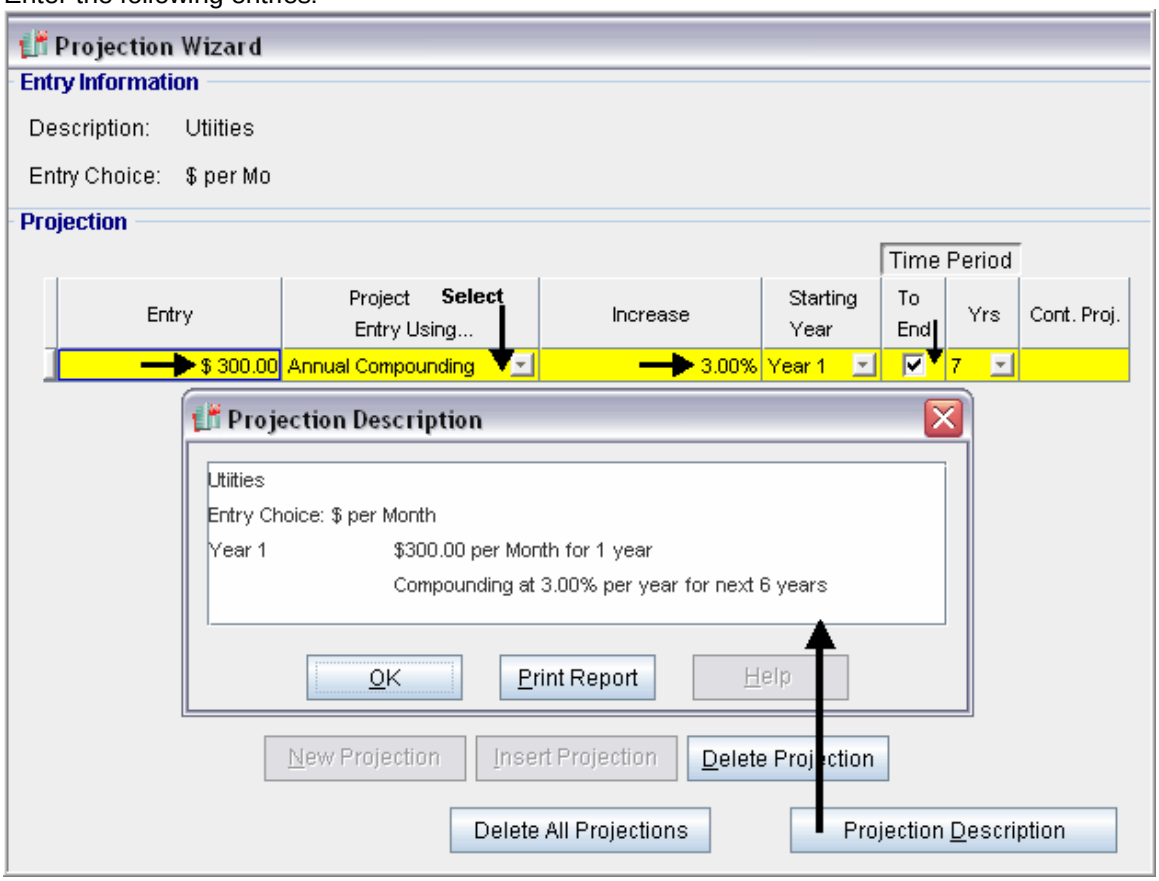


Press OK to save your entries and return the Expenses folder

Steps for setting up the Utilities

1. Select row with description 'Utilities'
2. Click on the  button.

Enter the following entries:



Press OK in the Projection Wizard to save your entries and return to the Expenses folder

Financing Folder

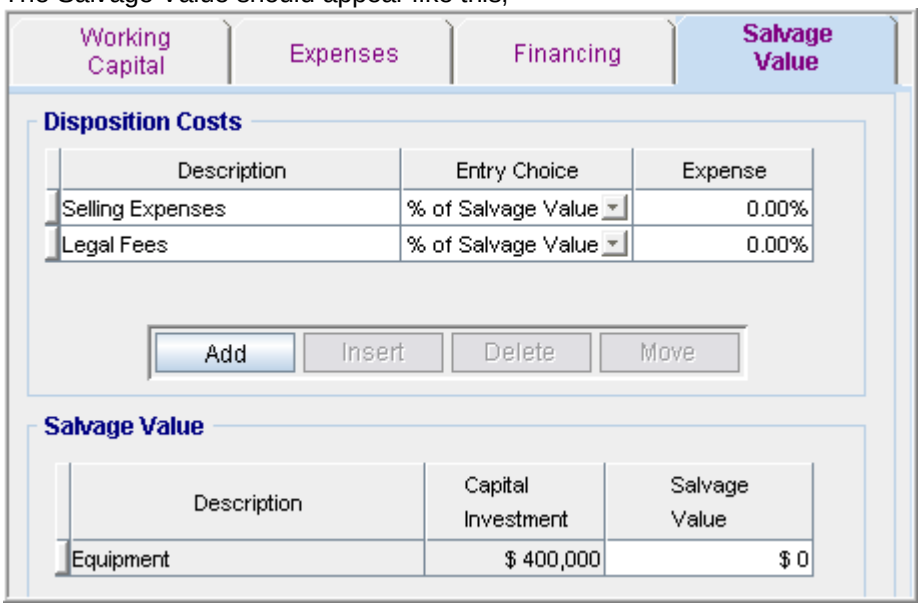
This example does not contain any financing.

Salvage Value Folder

Salvage Value: $15,000

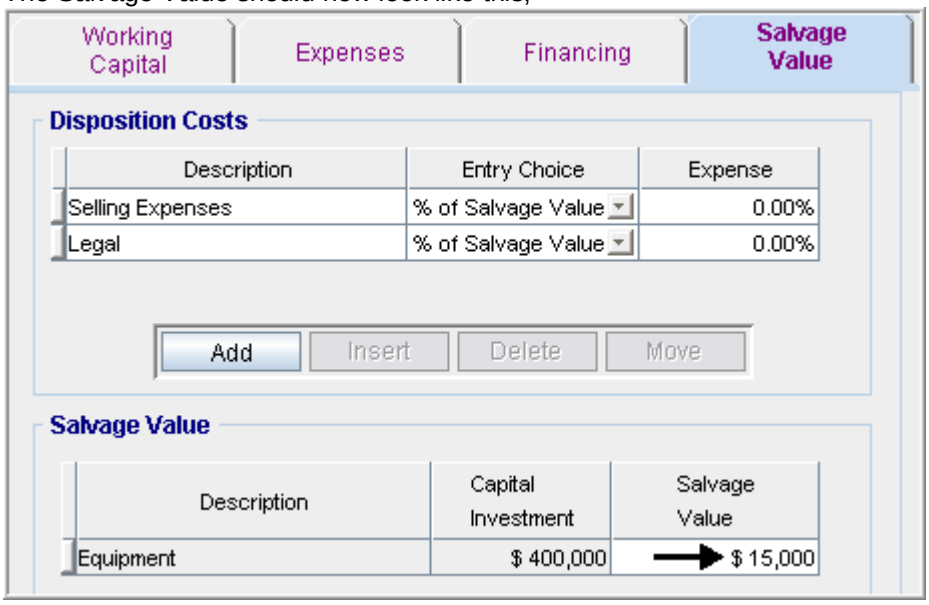
This example does not contain any Disposition Costs so only the Salvage Value needs to be entered.

The Salvage Value should appear like this;



Enter $15,000 into the grid for Equipment

The Salvage Value should now look like this;



SAVE YOUR PROJECT

DECIDING BETWEEN "SUPPLIER A" or "SUPPLIER B"

To decide between the two options use the;

a) The Project Comparison Report and
b) The Incremental Cash Flow Report

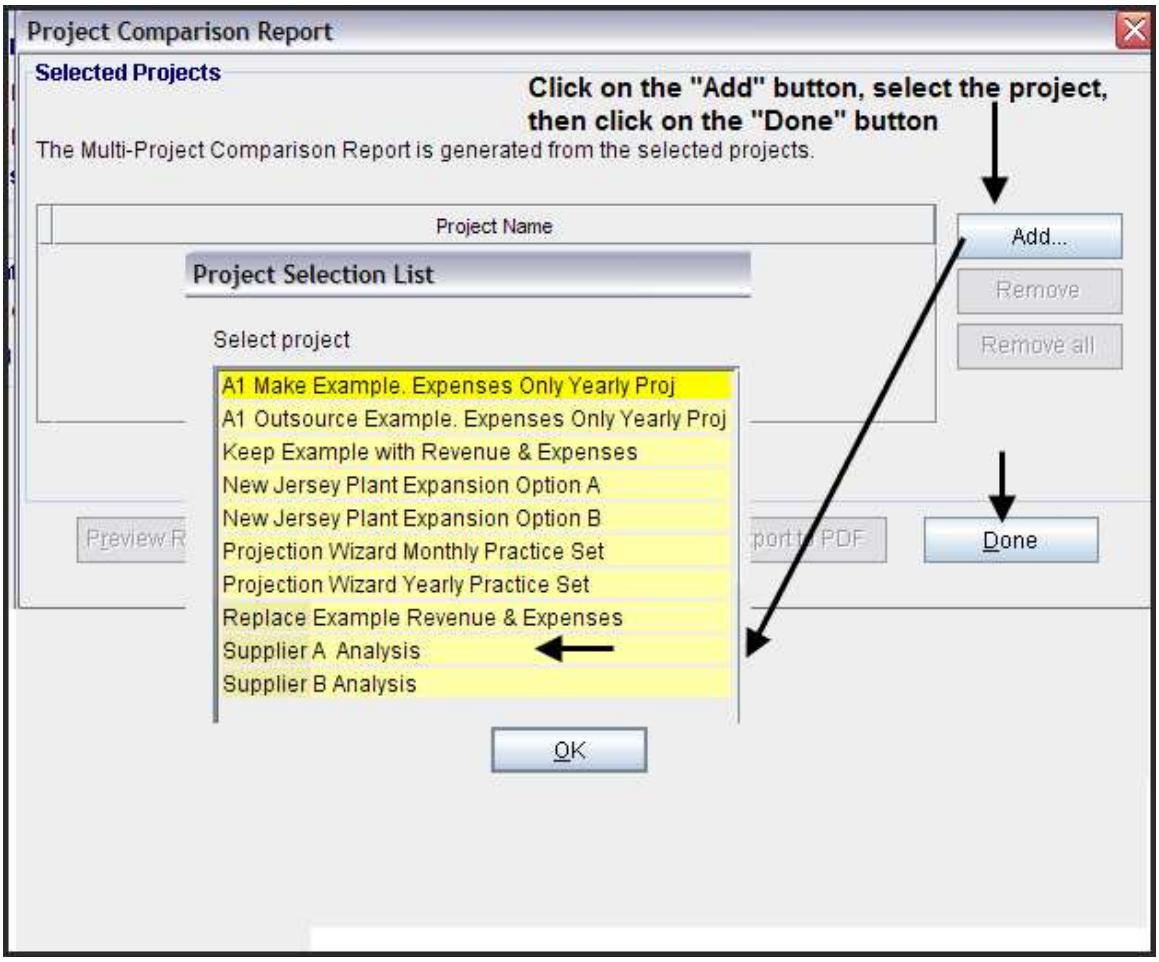
Project Comparison Report

Up to four projects can be compared side by side.

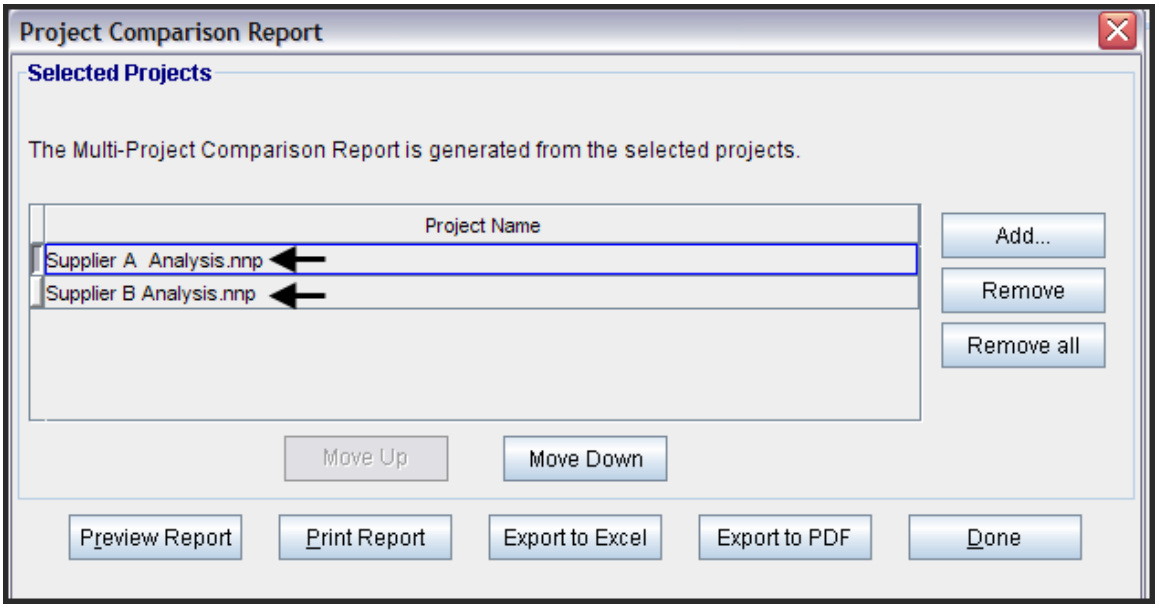
Steps involved in selecting the projects for the Project Comparison Report.

1. Select the Project Comparison Report on the Report 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.



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



Project Comparison Report

Project Comparison Report (Before Tax)

Net Cash Flow(Before Tax)

		Invest Expenses Analysis Supplier A	Invest Expenses Analysis Supplier B
Year	0	(530,000)	(400,000)
	1	(38,000)	(57,600)
	2	(39,490)	(58,135)
	3	(41,039)	(58,693)
	4	(42,648)	(59,539)
	5	(44,322)	(60,426)
	6	(46,061)	(79,355)
	7	(2,868)	(65,472)
	Total	(784,427)	(839,220)

Financial Return Before Tax

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)	($ 687,299) at 15.00%	($ 655,642) at 15.00%
Annual Equivalency	($ 165,199) at 15.00%	($ 157,590) at 15.00%
Benefit to Cost Ratio	N/A	N/A
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

Financial Results

Option	Net Present Value (NPV) at 15.00%	Annual Equivalency at 15.00%
Supplier A	($687,299)	($165,199)
Supplier B	($655,642)	($157,590)

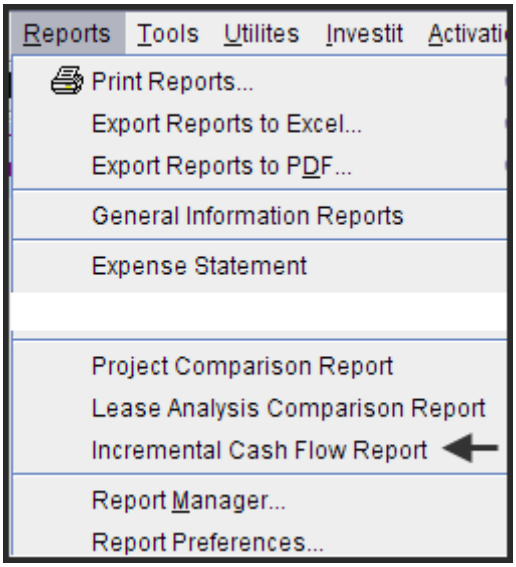
The company should choose the option that provides the lowest Net Present Value (NPV), which is Supplier B

Incremental Cash Flow Report

Can be used the show the differences in the cash flow for “Supplier A” versus “Supplier B”

Steps

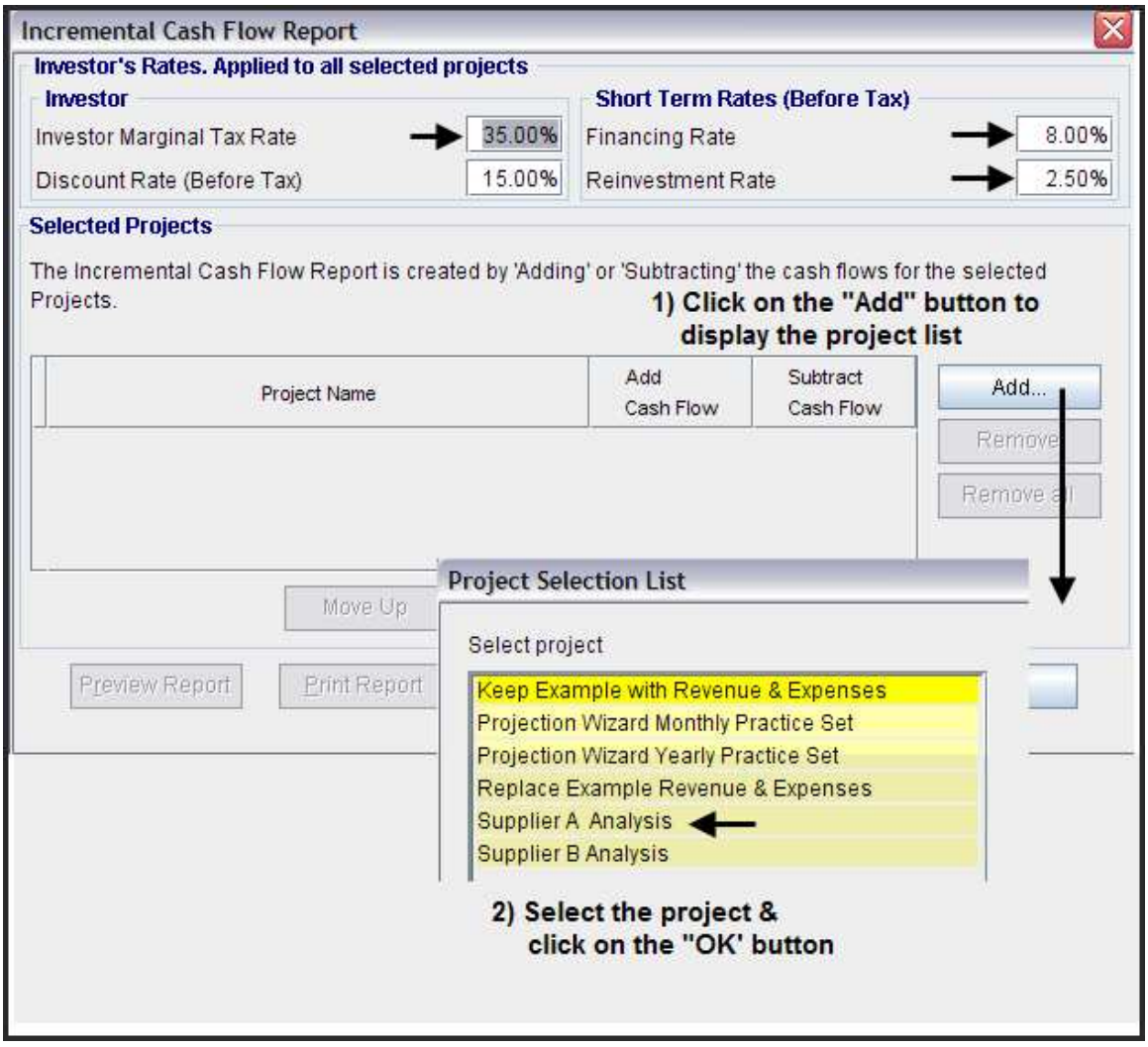
Select the Incremental Cash Flow on the Report menu



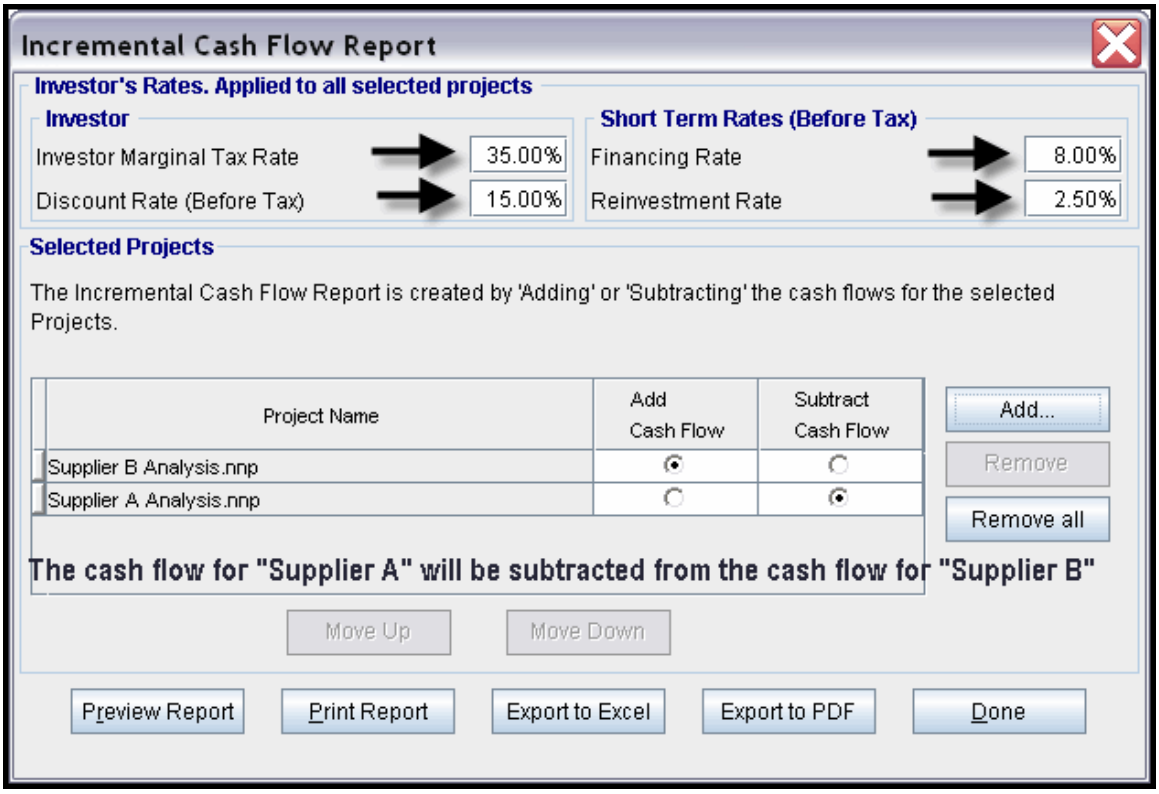
Enter;

Investor's Marginal Tax Rate
Discount Rate
Short Term Rates

On the "Incremental Cash Flow 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.



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 (Before Tax)

Net Cash Flow(Before Tax)

	Plus Supplier B Analysis	Minus Supplier A Analysis	Incremental Net Cash Flow (Before Tax)
Year 0	(400,000)	(530,000)	130,000
1	(57,600)	(38,000)	(19,600)
2	(58,135)	(39,490)	(18,645)
3	(58,693)	(41,039)	(17,655)
4	(59,539)	(42,648)	(16,891)
5	(60,426)	(44,322)	(16,104)
6	(79,355)	(46,061)	(33,294)
7	(65,472)	(2,868)	(62,603)
Total	(839,220)	(784,427)	(54,792)

Before Tax Financial Return

Internal Rate of Return (IRR)	N/A	N/A	7.82%
Net Present Value (NPV) at 15.00%	($ 655,642)	($ 687,299)	$ 31,657
Modified Internal Rate of Return (MIRR)	N/A	N/A	2.61%
Short term financing rate	8.00%	8.00%	8.00%
Short term reinvestment rate	2.50%	2.50%	2.50%
Annual Equivalency at 15.00%	($ 157,590)	($ 165,199)	$ 7,609
Benefit to Cost Ratio at 15.00%	N/A	N/A	N/A
Payback Period	N/A	N/A	N/A
Discounted Pay Back Period at 15.00%	N/A	N/A	N/A

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

Interpretation and conclusion

Purchasing from Supplier B will save $31,657 when discounted at 15.00% and provide an Internal Rate of Return (IRR) of 7.82% before tax