

Scilab Manual for
Managerial Economics via Scilab
by Prof Sreenivasa Charyulu
Others
Sreenidhi Institute Of Science And
Technology¹

Solutions provided by
Prof Sreenivasa Charyulu
Others
Sreenidhi Institute Of Science And Technology

November 9, 2024

¹Funded by a grant from the National Mission on Education through ICT, <http://spoken-tutorial.org/NMEICT-Intro>. This Scilab Manual and Scilab codes written in it can be downloaded from the "Migrated Labs" section at the website <http://scilab.in>

Contents

List of Scilab Solutions	3
1 Price Elasticity Of Demand	4
2 Income Elasticity Of Demand	7
3 Total Outlay(Expenditure) Method	9
4 Demand Forecast Technique	12
5 Break Even Point	16
6 Capital Budgeting	19
7 Capital Budgeting	21
8 Profitability Index	25
9 Average rate of return	29
10 Capital Budgeting	31

List of Experiments

Solution 1.1	1	.....	4
Solution 2.2	2	.....	7
Solution 3.3	3	.....	9
Solution 4.4	4	.....	12
Solution 5.5	5	.....	16
Solution 6.6	6	.....	19
Solution 7.7	7	.....	21
Solution 8.8	8	.....	25
Solution 9.9	9	.....	29
Solution 10.10	10	.....	31

Experiment: 1

Price Elasticity Of Demand

Scilab code Solution 1.1 1

```
1 //Price Elasticity Of Demand
2 //OS:Windows 10
3 //Scilab 5.5.2
4
5 clear;
6 clc;
7 close;
8
9 //Concept Information
10 //Formula= % Change in Demand/% Change in Price
11 //Ed = ( Q / P ) * (Po/Qo)
12 // Q is the Change in Quantity [Q0-Q1] (or) Initial
    Quantity - Final Quantity
13 // P is the Change in Price [P0-P1] (or) Initial
    Price - Final Price
14 //Q0 stands for Quantity for previous
15
16 //Type 1
17 //Given
18 P0=8 //in rupees
19 P1=4 //in rupees
```

```

20 Q0=10      //in units
21 Q1=12      //in units
22
23 //Solution
24 Ed=((Q0-Q1)/(P0-P1)*(P0/Q0))
25
26 //Values
27 mprintf(" Px(in rupees)      Dx(in units)")
28 mprintf("\n      %d\t\t\t%d", P0, Q0)
29 mprintf("\n      %d\t\t\t%d", P1, Q1)
30
31 //Result
32 //Note: -ve sign is ignored
33 mprintf("\n      Ed:%f", -Ed)
34 if -Ed < 1 then
35     mprintf("\nLess than Elasticity Of Demand")
36 else
37     mprintf("Greater than Elasticity Of Demand")
38 end
39
40 //Type 2
41 //Given
42 P0=8        //in rupees
43 P1=6        //in rupees
44 Q0=10       //in units
45 Q1=25       //in units
46
47 Ed=((Q0-Q1)/(P0-P1)*(P0/Q0))
48
49 //Values
50 mprintf("\n\n Px(in rupees)      Dx(in units)")
51 mprintf("\n      %d\t\t\t%d", P0, Q0)
52 mprintf("\n      %d\t\t\t%d", P1, Q1)
53
54 //Result
55 //Note: -ve sign is ignored
56 mprintf("\n      Ed:%d", -Ed)
57 if -Ed < 1 then

```

```
58     mprintf("\nLess than Elasticity Of Demand")
59 else
60     mprintf("\nGreater than Elasticity Of Demand")
61 end
62
63 //Output
64 //     Px(in rupees)      Dx(in units)
65 //     8                 10
66 //     4                 12
67 //     Ed:0.400000
68 //Less than Elasticity Of Demand
69 //
70 //     Px(in rupees)      Dx(in units)
71 //     8                 10
72 //     6                 25
73 //     Ed:6
74 // Greater than Elasticity Of Demand
```

Experiment: 2

Income Elasticity Of Demand

Scilab code Solution 2.2 2

```
1 //Income Elasticity Of Demand
2 //OS:Windows 10
3 //Scilab 5.5.2
4
5 clear;
6 clc;
7 close;
8
9 //Concept Information
10 //Formula= % Change in Income/% Change in Q.D.
11 //Ei = ( Q / Y ) * (Yo/Qo)
12 // Q is the Change in Quantity [Q0-Q1] (or) Initial
    Quantity - Final Quantity
13
14 //Given
15 I0=4000 //in rupees
16 I1=5000 //in rupees
17 Q0=20 //in units
18 Q1=25 //in units
19
20 //Solution
```



```

21 Ei=((Q0-Q1)/(I0-I1)*(I0/Q0))
22
23 //Values
24 mprintf("      Income(in rupees)      Commodity Demand(
      in units)")
25 mprintf("\n      %d\t\t\t%d",I0,Q0)
26 mprintf("\n      %d\t\t\t%d",I1,Q1)
27
28 //Result
29 //Note: -ve sign is ignored
30 mprintf("\n      Ei:%d",Ei)
31 if Ei == 1 then
32     mprintf("\nUnity Elasticity Of Demand")
33 elseif Ei > 1 then
34     mprintf("\nGreater than Elasticity Of Demand")
35 else
36     mprintf("\nLess than Elasticity Of Demand")
37 end
38
39 //Output
40 //      Income(in rupees)      Commodity Demand(in
      units)
41 //      4000      20
42 //      5000      25
43 //      Ei:1
44 // Unity Elasticity Of Demand

```

Experiment: 3

Total Outlay(Expenditure) Method

Scilab code Solution 3.3 3

```
1 //Total Outlay(Expenditure) Method
2 //OS:Windows 10
3 //Scilab 5.5.2
4
5 clear;
6 clc;
7 close;
8
9 //Concept Information
10 //Total Outlay = Price per unit * Demand in units
11
12 price=[8,7,6,5,4] //per Kg in rupees
13 total_expenditure=[0,7000,12000,15000,16000]
14 //in rupees
15
16 mprintf(' Price per kg Total Expenditure ')
17 mprintf('\n (in rupees)\t (in rupees)')
18 for i=1:5
19     mprintf('\n %d\t\t%d',price(i),
```

```

        total_expenditure(i))
19 end
20
21 //Case 1:Price falls from 7/kg to 5/kg
22 mprintf('\n\n    Price per kg    Total Expenditure'
    )
23 mprintf('\n    (in rupees)\t    (in rupees)')
24 mprintf('\n\t%d    \t%d',price(2),
    total_expenditure(2))
25 mprintf('\n\t%d    \t%d',price(4),
    total_expenditure(4))
26 if total_expenditure(2) > total_expenditure(4) then
27     mprintf("\nE > 1")
28     mprintf("\nMore than Unity")
29     mprintf("\nTotal expenditure increases as a
        result of decline in price")
30 else
31     mprintf("\nE < 1")
32     mprintf("\nLess than Unity")
33     mprintf("\nTotal expenditure decreases as a
        result of increase in price")
34 end
35
36
37 //Case 2:Price rises from 5/kg to 7/kg
38 mprintf('\n\n    Price per kg    Total Expenditure'
    )
39 mprintf('\n    (in rupees)\t    (in rupees)')
40 mprintf('\n\t%d    \t%d',price(4),
    total_expenditure(4))
41 mprintf('\n\t%d    \t%d',price(2),
    total_expenditure(2))
42 if total_expenditure(2) > total_expenditure(4) then
43     mprintf("\nE > 1")
44     mprintf("\nMore than Unity")
45     mprintf("\nTotal expenditure increases as a
        result of decline in price")
46 else

```

```

47     mprintf("\nE < 1")
48     mprintf("\nLess than Unity")
49     mprintf("\nTotal expenditure decreases as a
        result of increase in price")
50 end
51
52 //Output
53 //     Price per kg     Total Expenditure
54 //     (in rupees)     (in rupees)
55 //         8         0
56 //         7        7000
57 //         6        12000
58 //         5        15000
59 //         4        16000
60 //
61 //     Price per kg     Total Expenditure
62 //     (in rupees)     (in rupees)
63 //     7             7000
64 //     5             15000
65 //E < 1
66 //Less than Unity
67 //Total expenditure decreases as a result of
        increase in price
68 //
69 //     Price per kg     Total Expenditure
70 //     (in rupees)     (in rupees)
71 //     5             15000
72 //     7             7000
73 //E < 1
74 //Less than Unity
75 //Total expenditure decreases as a result of
        increase in price

```

Experiment: 4

Demand Forecast Technique

Scilab code Solution 4.4 4

```
1 //Demand Forecast Technique
2 //Under Quantitative Technique
3 //OS:Windows 10
4 //Scilab 5.5.2
5
6 clear;
7 clc;
8 close;
9
10 //Concept Information
11 //Time Series Analysis – Least Square Method
12 //y = a + b * x
13 //y indicates future sales
14 //x indicates the year number for which forecast is
    to be made
15 //a is the fixed element of overall sales which is
    not affected by time change
16 //b indicates the rate of change of sales with
    change in time
17 //a =  $\frac{y}{N}$       b =  $\frac{xy}{n^2}$ 
18
```

```

19 //Given
20 years = [2012,2013,2014,2015,2016]
21 sales = [120,130,135,142,138] //in rupees
22
23 //Consider the year 2014
24 //Solution
25 X_val=[]
26 for i=1:5
27     X_val($+1) = years(i)-years(3)
28 end
29
30 XY_val=[]
31 for i=1:5
32     XY_val($+1) = X_val(i) * sales(i)
33 end
34
35 X_sqr=X_val^2
36
37 sigma_y = sum(sales)
38 sigma_x = sum(X_val)
39 sigma_xy = sum(XY_val)
40 sigma_xsqr = sum(X_sqr)
41
42 N=length(sales)
43 a = sigma_y/N
44 b = sigma_xy/sigma_xsqr
45
46 //Result
47 //Table
48 mprintf("Year          ")
49 for i=1:5
50     mprintf("    %d",years(i))
51 end
52 mprintf("\n Sales (in rupees)")
53 for i=1:5
54     mprintf("    %d",sales(i))
55 end
56

```

```

57 mprintf("\n\n Year\t Sales(Y)   X       XY       X^2\n
n")
58 for i=1:5
59     mprintf(" %d\t   %d\t       %d\t   %d\t       %d\n",
years(i),sales(i),X_val(i),XY_val(i),X_sqr(i)
)
60 end
61
62 mprintf("\n\t y=%d\t   x=%d   xy =%d   x ^2=%d\n",
sigma_y,sigma_x,sigma_xy,sigma_xsqr)
63
64 mprintf("\n a = %d",a)
65 mprintf("\n b = %.2f",b)
66
67 //Future Sales Prediction
68 //For 2017
69 sigma_x = 2017 - 2014 //expected year - current case
year
70 sigma_y = a + b * sigma_x
71 mprintf("\n\n Estimate : %.2f",sigma_y)
72
73 //For 2018
74 sigma_x = 2018 - 2014 //expected year - current case
year
75 sigma_y = a + b * sigma_x
76 mprintf("\n Estimate : %.2f",sigma_y)
77
78 //Output
79 // Year                2012    2013    2014    2015
2016
80 // Sales(in rupees)    120    130    135    142
138
81 //
82 // Year    Sales(Y)    X      XY      X^2
83 // 2012    120        -2    -240    4
84 // 2013    130        -1    -130    1
85 // 2014    135         0     0      0
86 // 2015    142         1    142    1

```

```
87 // 2016      138      2      276      4
88 //
89 //   y =665      x =0      xy =48      x ^2=10
90 //
91 // a = 133
92 // b = 4.80
93 //
94 // Estimate : 147.40
95 // Estimate : 152.20
```

Experiment: 5

Break Even Point

Scilab code Solution 5.5 5

```
1 //Break Even Point
2 //OS:Windows 10
3 //Scilab 5.5.2
4
5 clear;
6 clc;
7 close;
8
9 //Given
10 fixed_cost = 500 //in rupees
11 variable_cost = 100 //in rupees per unit
12 selling_price = 200 //in rupees per unit
13 units = []
14 total_variable_cost = []
15 total_cost = []
16 total_revenue = []
17
18 //Solution
19 for i = 0:10
20     units($+1) = i
21     total_variable_cost($+1) = i * variable_cost
```

```

22     total_cost($+1) = total_variable_cost(i+1) +
        fixed_cost
23     total_revenue($+1) = units(i+1) * selling_price
24 end
25
26 for i = 1:10
27     if total_cost(i) == total_revenue(i) then
28         BEP_units = i
29     else
30         i = i + 1
31     end
32 end
33
34 //Result
35 mprintf("\n Units  FC(in Rs)  VC(per unit)  TVC
        TC  SP(per unit)  TR")
36 for i = 0:10
37     mprintf("\n   %d\t  %d\t          %d\t %d\t %d\t%d\t
        %d",units(i+1),fixed_cost,variable_cost ,
        total_variable_cost(i+1),total_cost(i+1),
        selling_price,total_revenue(i+1))
38 end
39
40 mprintf("\nBreak Even Point occurs at %d units",
        BEP_units-1)
41
42 //Output
43 //
44 // Units  FC(in Rs)  VC(per unit)  TVC      TC  SP(
        per unit)  TR
45 //   0    500        100      0    500    200    0
46 //   1    500        100     100    600    200
        200
47 //   2    500        100     200    700    200
        400
48 //   3    500        100     300    800    200
        600
49 //   4    500        100     400    900    200

```

		800					
50	//	5	500	100	500	1000	200
		1000					
51	//	6	500	100	600	1100	200
		1200					
52	//	7	500	100	700	1200	200
		1400					
53	//	8	500	100	800	1300	200
		1600					
54	//	9	500	100	900	1400	200
		1800					
55	//	10	500	100	1000	1500	200
		2000					
56	//	Break Even Point occurs at 5 units					

Experiment: 6

Capital Budgeting

Scilab code Solution 6.6 6

```
1 //Capital Budgeting
2 //Pay Back Period
3 //OS:Windows 10
4 //Scilab 5.5.2
5
6 clear;
7 clc;
8 close;
9
10 //Concept Information
11 //Even Model
12 //PBP = Original Cost of the project / Annual Cash
    Inflow
13
14 //Case 1
15 //Solution
16 originalcost = 500000
17 annualcashinflow = 100000
18 pbp = originalcost / annualcashinflow
19
20 //Result
```

```
21 mprintf("Pay Back Period for the project is : %d
    years",pbp)
22
23 //Case 2
24 originalcost = input("\\n Enter the original cost of
    the project:")
25 annualcashinflow = input("\\n Enter the annual cash
    inflow:")
26 pbp = originalcost / annualcashinflow
27
28 //Result
29 mprintf("\\n Pay Back Period for the project is : %.2
    f years",pbp)
30
31 //Output
32 // Pay Back Period for the project is : 5 years
33 //\\n Enter the original cost of the project:200000
34 //
35 //\\n Enter the annual cash inflow:200000
36 //
37 //
38 // Pay Back Period for the project is : 1.00 years
```

Experiment: 7

Capital Budgeting

Scilab code Solution 7.7 7

```
1 //Capital Budgeting
2 //Payback Period – Project Selection
3 //OS:Windows 10
4 //Scilab 5.5.2
5
6 clear;
7 clc;
8 close;
9
10 //Given
11 project_cost = 200000           //in rupees
12 projecta_cashinflow =
    [50000,50000,50000,50000,50000] //in years
    1–5
13 projectb_cashinflow =
    [100000,100000,100000,100000,100000] //in
    years 1–5
14 rcA = 0           //recovering period for Project A
15 rcB = 0           //recovering period for Project B
16
17 //Solution
```

```

18 projecta_cumulative_cashinflow = [0,0,0,0,0]
19 projecta_cumulative_cashinflow(1) =
    projecta_cashinflow(1)           //since 1st
    value of cumulation is always 1st value of
    cashinflow
20 projectb_cumulative_cashinflow = [0,0,0,0,0]
21 projectb_cumulative_cashinflow(1) =
    projectb_cashinflow(1)           //since 1st
    value of cumulation is always 1st value of
    cashinflow
22 for i=2:5
23     projecta_cumulative_cashinflow(i) =
        projecta_cumulative_cashinflow(i-1) +
        projecta_cashinflow(i)
24     projectb_cumulative_cashinflow(i) =
        projectb_cumulative_cashinflow(i-1) +
        projectb_cashinflow(i)
25 end
26
27 //Result
28 mprintf("      Project A")
29 mprintf("\n Year  Cash inflow  Cumulative cash
    inflow")
30 for i=1:5
31     mprintf("\n  %d      %d          %d",i,
        projecta_cashinflow(i),
        projecta_cumulative_cashinflow(i))
32 end
33
34 mprintf("\n\n      Project B")
35 mprintf("\n Year  Cash inflow  Cumulative cash
    inflow")
36 for i=1:5
37     mprintf("\n  %d      %d          %d",i,
        projectb_cashinflow(i),
        projectb_cumulative_cashinflow(i))
38 end
39

```

```

40 for i=1:5
41     if(projecta_cumulative_cashinflow(i) ==
         project_cost)
42         mprintf("\n\nRecovering period is %d years
         in Project A",i)
43         rcA = i
44     end
45 end
46
47 for i=1:5
48     if(projectb_cumulative_cashinflow(i) ==
         project_cost)
49         mprintf("\n\nRecovering period is %d years in
         Project B",i)
50         rcB = i
51     end
52 end
53
54 if rcA < rcB then
55     mprintf("Project A is accepted")
56 else
57     mprintf("\n\nProject B is accepted")
58 end
59
60 //Output
61 //     Project A
62 // Year  Cash inflow  Cumulative cash inflow
63 //   1      50000      50000
64 //   2      50000     100000
65 //   3      50000     150000
66 //   4      50000     200000
67 //   5      50000     250000
68 //
69 //     Project B
70 // Year  Cash inflow  Cumulative cash inflow
71 //   1     100000     100000
72 //   2     100000     200000
73 //   3     100000     300000

```



```
74 // 4      100000      400000
75 // 5      100000      500000
76 //
77 //Recovering period is 4 years in Project A
78 //Recovering period is 2 years in Project B
79 //Project B is accepted
```

Experiment: 8

Profitability Index

Scilab code Solution 8.8 8

```
1 //Profitability Index
2 //OS:Windows 10
3 //Scilab 5.5.2
4
5 clear;
6 clc;
7 close;
8
9 //Given
10 projectA_investment = 30000 //in rupees
11 projectB_investment = 50000 //in rupees
12 estimatedlife_A = 5 //in years
13 estimatedlife_B = 5 //in years
14 scrapvalue_A = 2000 //in rupees
15 scrapvalue_B = 4000 //in rupees
16 pv_10 = [0.909,0.826,0.751,0.683,0.621] //
    discount rate of 10%
17 projectA_CF = [10000,15000,8000,6000,4000]
18 projectB_CF = [40000,30000,10000,5000,4000]
19 pvcf_A = [] //present value
20 pvcf_B = [] //present value
```

```

21
22 //Solution
23 //Profitability Index for Project A
24 for i=1:5
25     pvcf_A($+1) = pv_10(i) * projectA_CF(i)
26 end
27 total_pvcf = sum(pvcf_A)
28 PI_A = total_pvcf / projectA_investment
29
30 //Profitability Index for Project B
31 for i=1:5
32     pvcf_B($+1) = pv_10(i) * projectB_CF(i)
33 end
34 total_pvcf = sum(pvcf_B)
35 PI_B = total_pvcf / projectB_investment
36
37 //Result
38 mprintf("\n Particulars\t      Project A\t Project B
      ")
39 mprintf("\n\n Initial Investment      %d          %d",
      projectA_investment,projectB_investment)
40 mprintf("\n (in rupees)")
41 mprintf("\n\n Estimated life")
42 mprintf("          %d\t          %d",estimatedlife_A,
      estimatedlife_B)
43 mprintf("\n (in years)")
44 mprintf("\n\n Scrap value")
45 mprintf("          %d\t          %d",scrapvalue_A,
      scrapvalue_B)
46 mprintf("\n (in rupees)\n")
47 mprintf("\n Year\tProject A CF\tProject B CF")
48 for i=1:5
49     mprintf("\n %d\t %d          \t %d",i,
      projectA_CF(i),projectB_CF(i))
50 end
51 mprintf("\n\n Project A")
52 mprintf("\n Year\tCash inflows (CF)          PV@10percent
      \tPVCF")

```

```

53 for i=1:5
54     mprintf("\n %d\t %d \t %.3f\t
           %d",i,projectA_CF(i),pv_10(i),pvcf_A(i)
           ))
55 end
56 mprintf("\n\n Project B")
57 mprintf("\n Year\tCash inflows(CF) \t PV@10percent
           \tPVCF")
58 for i=1:5
59     mprintf("\n %d\t %d \t %.3f\t
           %d",i,projectB_CF(i),pv_10(i),pvcf_B(i)
           ))
60 end
61 mprintf("\n\n Profitability Index for Project A: %
           .2f",PI_A)
62 mprintf("\n Profitability Index for Project B: %.2f
           ",PI_B)
63 if PI_A > PI_B then
64     mprintf("\n Project A proposal is accepted
           because its profatibility index is more")
65 else
66     mprintf("\n Project B proposal is accepted
           because its profatibility index is more")
67 end
68
69 //Output
70 //
71 // Particulars Project A Project B
72 //
73 // Initial Investment 30000 50000
74 // (in rupees)
75 //
76 // Estimated life 5 5
77 // (in years)
78 //
79 // Scrap value 2000 4000
80 // (in rupees)
81 //

```

```

82 // Year      Project A CF      Project B CF
83 //   1      10000      40000
84 //   2      15000      30000
85 //   3       8000      10000
86 //   4       6000       5000
87 //   5       4000       4000
88 //
89 // Project A
90 // Year      Cash inflows (CF)      PV@10percent      PVCF
91 //   1      10000      0.909      9090
92 //   2      15000      0.826      12390
93 //   3       8000      0.751      6008
94 //   4       6000      0.683      4098
95 //   5       4000      0.621      2484
96 //
97 // Project B
98 // Year      Cash inflows (CF)      PV@10percent      PVCF
99 //   1      40000      0.909      36360
100 //   2      30000      0.826      24780
101 //   3      10000      0.751      7510
102 //   4       5000      0.683      3415
103 //   5       4000      0.621      2484
104 //
105 // Profitability Index for Project A: 1.14
106 // Profitability Index for Project B: 1.49
107 // Project B proposal is accepted because its
    profatibility index is more

```

Experiment: 9

Average rate of return

Scilab code Solution 9.9 9

```
1 //Average rate of return
2 //OS:Windows 10
3 //Scilab 5.5.2
4
5 clear;
6 clc;
7 close;
8
9 //Concept Information
10 //ARR = (Average annual profits after taxes /
    Average Investment original investment) * 100
11 //Average investment = 1/2 (Total investment – scrap
    value)
12
13 //Given
14 projectA_investment = 500000 //in rupees
15 projectA_scrapvalue = 20000 //in rupees
16 profit_A = [40000,60000,70000,50000,20000] //in
    rupees
17
18 //Solution
```

```
19 total_earnings = sum(profit_A)
20 N = length(profit_A)
21 average_earnings = total_earnings / N
22 average_investment = 1/2 * (projectA_investment -
    projectA_scrapvalue) + projectA_scrapvalue
23 average_rateofreturn = (average_earnings /
    average_investment) * 100
24
25 //Result
26 mprintf("\n Total Earnings: %d rupees",
    total_earnings)
27 mprintf("\n Average Earnings: %d rupees",
    average_earnings)
28 mprintf("\n Average Investment: %d rupees",
    average_investment)
29 mprintf("\n Average Rate of Return: %.2f percent",
    average_rateofreturn)
30
31 //Output
32 //
33 // Total Earnings: 240000 rupees
34 // Average Earnings: 48000 rupees
35 // Average Investment: 260000 rupees
36 // Average Rate of Return: 18.46 percent
```

Experiment: 10

Capital Budgeting

Scilab code Solution 10.10 10

```
1 //Capital Budgeting
2 //Net Present Value – Project Selection
3 //OS:Windows 10
4 //Scilab 5.5.2
5
6 clear;
7 clc;
8 close;
9
10 //Given
11 projectA_investment = 60000 //in rupees
12 projectB_investment = 80000 //in rupees
13 estimatedlife_A = 7 //in years
14 estimatedlife_B = 7 //in years
15 scrapvalue_A = 9000 //in rupees
16 scrapvalue_B = 11000 //in rupees
17 pv_10 = [0.909,0.826,0.751,0.683,0.621] //
    discount rate of 10%
18 projectA_CF = [20000,19000,18000,12500,9000]
19 projectB_CF = [68000,42000,15000,14000,11000]
20 projectA_CF($+1) = scrapvalue_A //last value is
```



```

        always scrap value
21 projectB_CF($+1) = scrapvalue_B //last value is
        always scrap value
22 pvcf_A = [] //present value
23 pvcf_B = [] //present value
24
25 //Solution
26 //Project A Present Value
27 for i=1:5
28     pvcf_A($+1) = pv_10(i) * projectA_CF(i)
29 end
30 total_pvcf = sum(pvcf_A)
31 NPV_A = total_pvcf - projectA_investment
32
33 //Project B Present Value
34 for i=1:5
35     pvcf_B($+1) = pv_10(i) * projectB_CF(i)
36 end
37 total_pvcf = sum(pvcf_B)
38 NPV_B = total_pvcf - projectB_investment
39
40 //Result
41 mprintf("\n Particulars\t Project A\t Project B
    ")
42 mprintf("\n\n Initial Investment %d %d",
    projectA_investment,projectB_investment)
43 mprintf("\n (in rupees)")
44 mprintf("\n\n Estimated life")
45 mprintf(" %d\t %d",estimatedlife_A,
    estimatedlife_B)
46 mprintf("\n (in years)")
47 mprintf("\n\n Scrap value")
48 mprintf(" %d\t %d",scrapvalue_A,
    scrapvalue_B)
49 mprintf("\n (in rupees)\n")
50 mprintf("\n Year\tProject A CF\tProject B CF")
51 for i=1:5
52     mprintf("\n %d\t %d \t %d",i,

```

```

        projectA_CF(i),projectB_CF(i))
53 end
54 mprintf("\n\n Project A")
55 mprintf("\n Year\tCash inflows(CF)      PV@10percent
        \tPVCF")
56 for i=1:5
57     mprintf("\n  %d\t  %d  \t          %.3 f\t
        %d",i,projectA_CF(i),pv_10(i),pvcf_A(i)
        ))
58 end
59 mprintf("\n\n Project B")
60 mprintf("\n Year\tCash inflows(CF)      PV@10percent
        \tPVCF")
61 for i=1:5
62     mprintf("\n  %d\t  %d  \t          %.3 f\t
        %d",i,projectB_CF(i),pv_10(i),pvcf_B(i)
        ))
63 end
64 mprintf("\n\n NPV for Project A: %.2 f",NPV_A)
65 mprintf("\n NPV for Project B: %d",NPV_B)
66
67 if NPV_A > NPV_B then
68     mprintf("\n Project A is accepted as its NPV
        is higher")
69 else
70     mprintf("\n Project B is accepted as its NPV
        is higher")
71 end
72
73 //Output
74 // Particulars      Project A      Project B
75 //
76 // Initial Investment  60000      80000
77 // (in rupees)
78 //
79 // Estimated life      7          7
80 // (in years)
81 //

```

```

82 // Scrap value          9000      11000
83 // (in rupees)
84 //
85 // Year    Project A CF    Project B CF
86 // 1      20000          68000
87 // 2      19000          42000
88 // 3      18000          15000
89 // 4      12500          14000
90 // 5      9000           11000
91 //
92 // Project A
93 // Year    Cash inflows (CF)    PV@10percent    PVCF
94 // 1      20000          0.909          18180
95 // 2      19000          0.826          15694
96 // 3      18000          0.751          13518
97 // 4      12500          0.683          8537
98 // 5      9000           0.621          5589
99 //
100 // Project B
101 // Year    Cash inflows (CF)    PV@10percent    PVCF
102 // 1      68000          0.909          61812
103 // 2      42000          0.826          34692
104 // 3      15000          0.751          11265
105 // 4      14000          0.683          9562
106 // 5      11000          0.621          6831
107 //
108 // NPV for Project A: 1518.50
109 // NPV for Project B: 44162
110 // Project B is accepted as its NPV is higher

```
