AP Computer Science
Mr Hanley

The Hood

The Matrix Computer Store

Ver: 1.5

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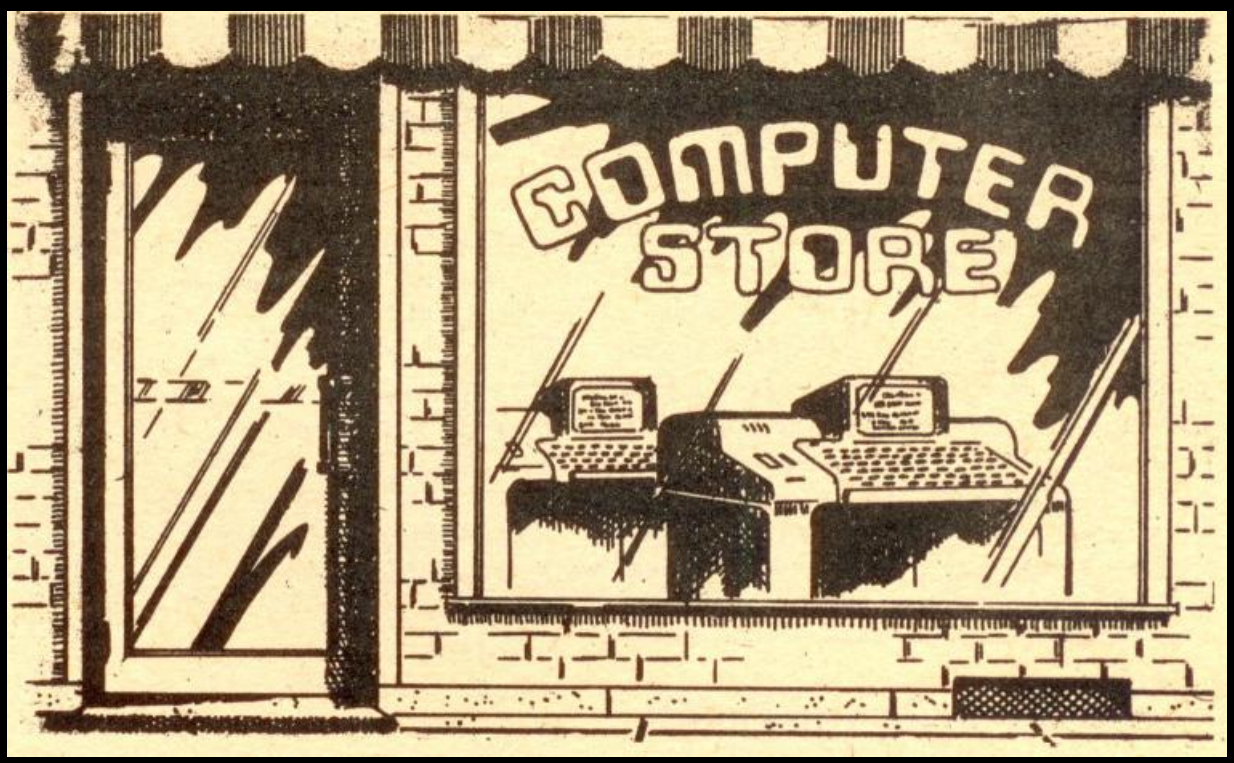

Assignment 4: Matrix Comp. Store

Binary **Ones Comp** **Twos Comp**

Design a program to display the payment plan for a computer purchase
At the Matrix computer store, a purchaser puts a certain % down and then pays 5% of the remaining amount per month until the last month when they pay off any remaining balance.

Allow the user to input the computer cost and the annual interest rate and the % down payment amount (all doubles).

0<cost<=12,000
0<annual rate<=20
0<=down payment %<=50

Output a table of payments as follows;

Month number (beginning with 1)
Current total balance owed
Interest owed for that month
Amount of principal owed for that month
Payment for that month
Balance remaining after payment

In addition, you are required to report the total interest paid after the loan is complete;

The amount of interest for a month is equal to balance *rate/12. The amount of principal for a month is equal to the monthly payment minus the interest owed.

Round off each calculation to the nearest penny.

You will be using the System.out.format command to format your table(same as the System.out.printf command)

The last month:

The last month payment will NOT be the same generally as the other months. You must calculate interest based on what the balance will be starting the month.

Example, in the case below

Please enter in a computer amount->**2000**
Please enter in annual rate->**12**
Please enter in down payment %->**10**
Down payment = $200

Example 1

Month	Balance Start	Interest	Principal	Payment	Balance End
1	1,800.00	18.00	72.00	90.00	1,728.00
2	1,728.00	17.28	72.72	90.00	1,655.28
3	1,655.28	16.55	73.45	90.00	1,581.83
4	1,581.83	15.82	74.18	90.00	1,507.65
5	1,507.65	15.08	74.92	90.00	1,432.73
6	1,432.73	14.33	75.67	90.00	1,357.06
7	1,357.06	13.57	76.43	90.00	1,280.63
8	1,280.63	12.81	77.19	90.00	1,203.44
9	1,203.44	12.03	77.97	90.00	1,125.47
10	1,125.47	11.25	78.75	90.00	1,046.72
11	1,046.72	10.47	79.53	90.00	967.19
12	967.19	09.67	80.33	90.00	886.86
13	886.86	08.87	81.13	90.00	805.73
14	805.73	08.06	81.94	90.00	723.79
15	723.79	07.24	82.76	90.00	641.03
16	641.03	06.41	83.59	90.00	557.44
17	557.44	05.57	84.43	90.00	473.01
18	473.01	04.73	85.27	90.00	387.74
19	387.74	03.88	86.12	90.00	301.62
20	301.62	03.02	86.98	90.00	214.64
21	214.64	02.15	87.85	90.00	126.79
22	126.79	01.27	88.73	90.00	38.06

23	38.06	00.38	38.06	38.44	00.00

| Total Interest Paid: $ 218.44

Example 2:

+-+-+-+Welcome to the Matrix Computer Calculator+-+-+-+

Please enter computer cost

3000

Please enter annual interest rate, ex 12 for 12%

12

Please enter down payment %, example 10 for 10%

10

Your down payment = 300.0

P A Y M E N T $$ C A L C U L A T O R

Month	Bal Srt	Principal	Interest	Payment	Balance End
1	2,700.00	108.00	27.00	135.00	2,592.00
2	2,592.00	109.08	25.92	135.00	2,482.92
3	2,482.92	110.17	24.83	135.00	2,372.75
4	2,372.75	111.27	23.73	135.00	2,261.48
5	2,261.48	112.39	22.61	135.00	2,149.09
6	2,149.09	113.51	21.49	135.00	2,035.58
7	2,035.58	114.64	20.36	135.00	1,920.94
8	1,920.94	115.79	19.21	135.00	1,805.15
9	1,805.15	116.95	18.05	135.00	1,688.20
10	1,688.20	118.12	16.88	135.00	1,570.08
11	1,570.08	119.30	15.70	135.00	1,450.78
12	1,450.78	120.49	14.51	135.00	1,330.29
13	1,330.29	121.70	13.30	135.00	1,208.59
14	1,208.59	122.91	12.09	135.00	1,085.68
15	1,085.68	124.14	10.86	135.00	961.54
16	961.54	125.38	9.62	135.00	836.16
17	836.16	126.64	8.36	135.00	709.52
18	709.52	127.90	7.10	135.00	581.62
19	581.62	129.18	5.82	135.00	452.44
20	452.44	130.48	4.52	135.00	321.96
21	321.96	131.78	3.22	135.00	190.18
22	190.18	133.10	1.90	135.00	57.08
23	57.08	57.08	.57	57.65	00.00

|Total INTEREST PAID$ 327.65

In the past, students have assumed that there will always be 23 months for the repayment.

This is not always the case as you can see below.....borrow enough money and don't put a lot down and it will take you longer to repay. Also, look at how much interest is paid for the $12 computer below, almost $2700!!!!

Example 3:

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 Please enter computer cost
12000

 Please enter annual interest rate, ex 12 for 12%
20

 Please enter down payment %, example 10 for 10%
1

Your down payment = 120.0
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P A Y M E N T $$ C A L C U L A T O R

Month	Balance Srt	Principal	Interest	Payment	Balance End
1	11,880.00	396.00	198.00	594.00	11,484.00
2	11,484.00	402.60	191.40	594.00	11,081.40
3	11,081.40	409.31	184.69	594.00	10,672.09
4	10,672.09	416.13	177.87	594.00	10,255.96
5	10,255.96	423.07	170.93	594.00	9,832.89
6	9,832.89	430.12	163.88	594.00	9,402.77
7	9,402.77	437.29	156.71	594.00	8,965.48
8	8,965.48	444.58	149.42	594.00	8,520.90
9	8,520.90	451.98	142.02	594.00	8,068.92
10	8,068.92	459.52	134.48	594.00	7,609.40
11	7,609.40	467.18	126.82	594.00	7,142.22
12	7,142.22	474.96	119.04	594.00	6,667.26
13	6,667.26	482.88	111.12	594.00	6,184.38
14	6,184.38	490.93	103.07	594.00	5,693.45
15	5,693.45	499.11	94.89	594.00	5,194.34
16	5,194.34	507.43	86.57	594.00	4,686.91
17	4,686.91	515.88	78.12	594.00	4,171.03
18	4,171.03	524.48	69.52	594.00	3,646.55
19	3,646.55	533.22	60.78	594.00	3,113.33
20	3,113.33	542.11	51.89	594.00	2,571.22
21	2,571.22	551.15	42.85	594.00	2,020.07
22	2,020.07	560.33	33.67	594.00	1,459.74
23	1,459.74	569.67	24.33	594.00	890.07
24	890.07	579.17	14.83	594.00	310.90
25	310.90	310.90	05.18	316.08	00.00

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|Total INTEREST PAID$   2,692.08
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Output

Project Name	Matrix Computer Store
Class 1 Name	MatrixStore

RUBRIC	
Calculates correctly	70
Formatted using the System.out.format command	20
Comments	10
TOTAL	100

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