

AP Computer Science



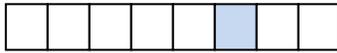
Mr Hanley



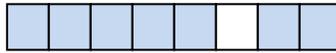
Assignment 4/100₂/4₈/4₁₆ Version: 2.0

Last Updated: 10/30/2017 9:59 AM

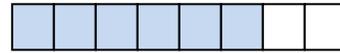
Binary



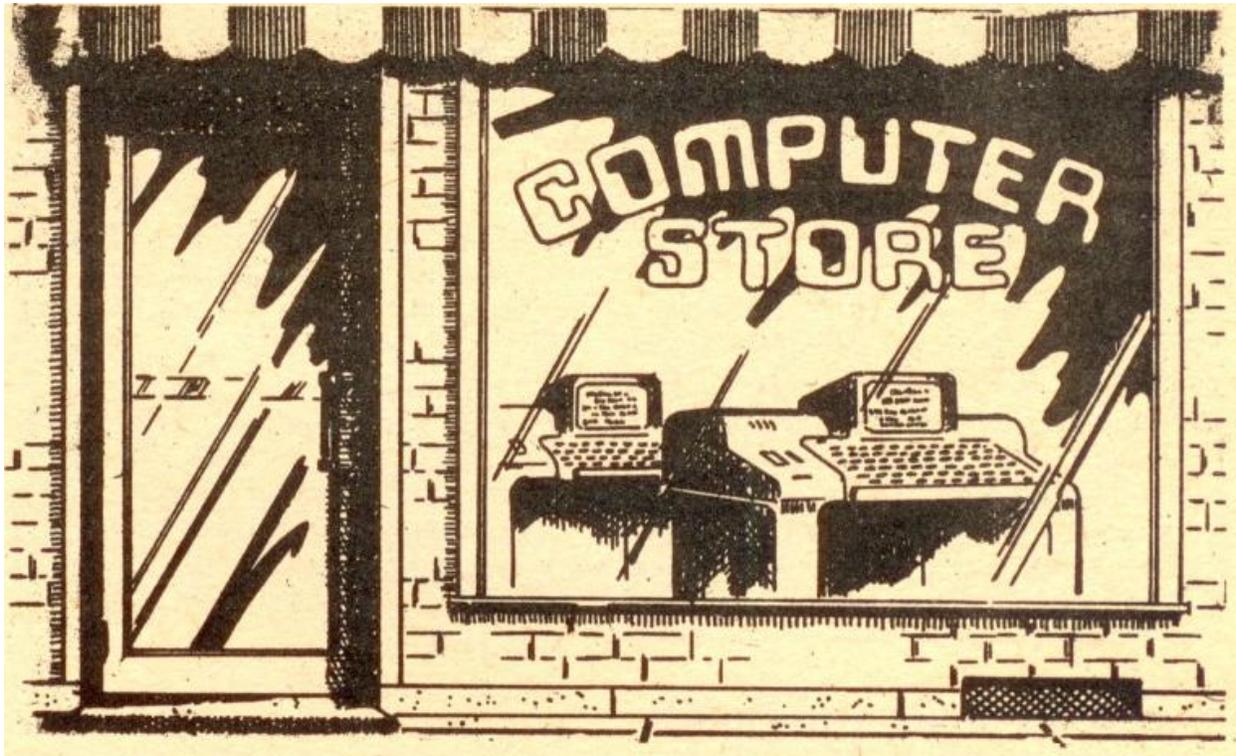
Ones Comp



Twos Comp



Tidbit Computer Store



Design a program to display the payment plan for a computer purchase

At the tidbit 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).

$0 < \text{cost} \leq 12,000$

$0 < \text{annual rate} \leq 20$

$0 \leq \text{down payment \%} \leq 50$

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.

See documentation on wicked cool System.out.format command.

This command allows you to specify ole school C codes that will perfectly specify a field width for each number. You can also RIGHT JUSTIFY or LEFT JUSTIFY.

Additionally, you can ask for a certain number of digits after the decimal and optional commas. There are also sick date formatting codes. [Check it](#)

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

Example 1

Please enter in a computer amount->2000

Please enter in annual rate->12

Please enter in down payment %->10

Down payment = \$200

Please enter down payment %, example 10 for 10%

10

Your down payment = 200.0

PAYMENT \$\$ CALCULATOR

Month	Balance Srt	Principal	Interest	Payment	Balance End
1	1,800.00	72.00	18.00	90.00	1,728.00
2	1,728.00	72.72	17.28	90.00	1,655.28
3	1,655.28	73.45	16.55	90.00	1,581.83
4	1,581.83	74.18	15.82	90.00	1,507.65
5	1,507.65	74.92	15.08	90.00	1,432.73
6	1,432.73	75.67	14.33	90.00	1,357.06
7	1,357.06	76.43	13.57	90.00	1,280.63
8	1,280.63	77.19	12.81	90.00	1,203.44
9	1,203.44	77.97	12.03	90.00	1,125.47
10	1,125.47	78.75	11.25	90.00	1,046.72
11	1,046.72	79.53	10.47	90.00	967.19
12	967.19	80.33	09.67	90.00	886.86
13	886.86	81.13	08.87	90.00	805.73
14	805.73	81.94	08.06	90.00	723.79
15	723.79	82.76	07.24	90.00	641.03
16	641.03	83.59	06.41	90.00	557.44
17	557.44	84.43	05.57	90.00	473.01
18	473.01	85.27	04.73	90.00	387.74
19	387.74	86.12	03.88	90.00	301.62
20	301.62	86.98	03.02	90.00	214.64
21	214.64	87.85	02.15	90.00	126.79
22	126.79	88.73	01.27	90.00	38.06
23	38.06	38.06	00.38	38.44	00.00

Total INTEREST PAID\$ 218.44

BUILD SUCCESSFUL (total time: 5 seconds)

Example 2:

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	Balance 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	09.62	135.00	836.16
17	836.16	126.64	08.36	135.00	709.52
18	709.52	127.90	07.10	135.00	581.62
19	581.62	129.18	05.82	135.00	452.44
20	452.44	130.48	04.52	135.00	321.96
21	321.96	131.78	03.22	135.00	190.18
22	190.18	133.10	01.90	135.00	57.08
23	57.08	57.08	00.57	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 \$12000 computer below, almost \$2700!!!!

Example 3:

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Output - TidbitComputerStoreSolutionNB (run) x | TestNumberBoxSolution.java x | rebel.xml x | TidbitSolutionNB_
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
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Month          Balance Srt      Principal      Interest      Payment      Balance End
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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        451.99         142.01         594.00        8,068.91
10             8,068.91        459.52         134.48         594.00        7,609.39
11             7,609.39        467.18         126.82         594.00        7,142.21
12             7,142.21        474.96         119.04         594.00        6,667.25
13             6,667.25        482.88         111.12         594.00        6,184.37
14             6,184.37        490.93         103.07         594.00        5,693.44
15             5,693.44        499.11          94.89         594.00        5,194.33
16             5,194.33        507.43          86.57         594.00        4,686.90
17             4,686.90        515.89          78.11         594.00        4,171.01
18             4,171.01        524.48          69.52         594.00        3,646.53
19             3,646.53        533.22          60.78         594.00        3,113.31
20             3,113.31        542.11          51.89         594.00        2,571.20
21             2,571.20        551.15          42.85         594.00        2,020.05
22             2,020.05        560.33          33.67         594.00        1,459.72
23             1,459.72        569.67          24.33         594.00         890.05
24             890.05         579.17          14.83         594.00         310.88
25             310.88         310.88           05.18         316.06          00.00

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|Total INTEREST PAID$  2,692.06
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Project Name
Class 1 Name

Assign 4 – Tidbit Computer Store
TidbitStore

To turn this bad boy in, run the 2nd two examples and paste into an MS Word Document Use Consolas Size 12 with your name and period and sauce code at the top

Name: Alex Jones Period: 6 Sauce Code: 21

Make it fit on one page, using Landscape and use Page Layout, Spacing After to 0

On a 3rd page, do a screen shot of your loop from your source code, show some good comments.

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

Recursion*Linear Search*Binary Search*Grid World Case Study*File Processing *nlogn*Hangman