

Name: _____ Section: _____

Exam2 - I/O/if/while/for/vectors/rand/round

NO QUESTIONS ANSWERED DURING EXAM. DO YOUR BEST. COMMENT OUT, AND MOVE ON!

Time to help out a contractor budget his end-of-month bill...

```
**          COntractOR Help          **

How many permits have you pulled (>=3): 3.3
ERROR: try again: 2.2
ERROR: try again: 3

When entering below. Permits types are:
1-roof 2-fence 3-sprinkler system

Permit #1:
What type of permit? (1-2-3): 1.1
ERROR: try again: .2
ERROR: try again: 2
Cost $75.00 (valid 45 days)
Running Bill: $75.00
It's been 69 days since you pulled the permit
----> That's overdue!! Fine: $56.34 (Running Bill now: $131.34)

Permit #2:
What type of permit? (1-2-3): 3
Cost $100.00 (valid 25 days)
Running Bill: $231.34
It's been 33 days since you pulled the permit
----> That's overdue!! Fine: $163.37 (Running Bill now: $394.71)

Permit #3:
What type of permit? (1-2-3): 1
Cost $90.00 (valid 30 days)
Running Bill: $484.71
It's been 23 days since you pulled the permit

-----
Nb permits: 3
Total Bill: $484.71
Overdues: 2 permit(s)!
```

Three types of permits can be pulled, with the following characteristics:

Permit type	Cost \$	Days valid
1 – Roof	90	30
2 – Fence	75	45
3 – Sprinkler	100	25

In case the company decides to grow and complete more work, more permits will be used in the code. Keep this in mind in the code. You shall use two vector databases: one for the costs, the other for the days.

After seeing a brief intro, the contractor will enter the number of permits (>=3, trap user) they completed that month.

The code will quickly indicate the three permit types possible. (NUMERICAL VALUES PLEASE).

Using the most appropriate loop, the code will repeatedly:

- Indicate the permit's number
- Prompt what type the permit was (1,2,3 only. Trap user).
- Indicate cost and the number of days that specific permit is valid.
- Calculate/display the current bill (running total).
- For "fun", MATLAB also generates how many days it has been since that permit was pulled. This should be an integer between 1 and twice the valid days for that permit (both included). Display as well.
- If that amount of days is greater than the amount of days the permit is valid for, MATLAB generates a fine between \$50.00 and \$250.00 (float, both excluded)! Display the fine and the new current bill with the fine taken into account.

When done, print a summary: number of permits, total bill, and number of overdue permits!

CAUTION: There is only ONE if statement in the code. KEEP IT THAT SIMPLE.

Please cross check!

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Clean ups	4
Algorithm	5
Spacing/Indent	5
Semi-colons	2.5
Human Factor	2.5

- Intro to user 2
- Prompts, validate 10
- Databases 5
- Appropriate loop 5
- Permit number 2
- Running totals 10
- Displays 7
- Random day/displays 5+5
- Random fine 5
- IF Overdues! 5+5+3
- Final display 5

7c: Testing: each piece counts! You must show me each loop works. 5

Extra Credit: (+3)

The function _____ prompts the user for data.

The _____ symbols are used to hardcode vectors.

The function _____ creates a vector with a lots of data points from a to b.

The _____ loop is a counting loop.

The function _____ rounds towards the integer greater than the argument provided.