ProgrammingFor Loops Homework 2

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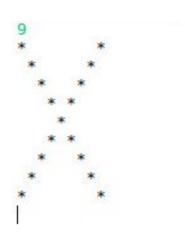


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Problem #1: Printing X

- Read in a odd Integer N, then print an X using * as follows:
 - Hint: Given i-th line at j-th digit, find the **2 conditions** to print a star





Problem #2: Special Sum

- This problem was homework in while loops
 - Given a, b, c, ..., etc \Rightarrow compute (a, b*b, c*c*c, d*d*d*d, e*e*e*e*e.....)
- Now, solve with for-loops
- Input:
 - 0 2
 - 0 3 572
 - 0 4 1 2 3 4
- Output
 - 0 62
 - o **288**

- [as (5 + 7*7 + 2*2*2) = 62]
- [as (1+2*2+3*3*3+4*4*4*4) = 288]

Problem #3: Faster Triples

- Read positive n, m, w, Find all triples where A + B <= C, and:
 - 1 <= A <= n
 - o A <= B <= m
 - 1 <= C <= w
- Example:
 - $0 100\ 200\ 20 \Rightarrow 715$
- In the lecture, we implemented the slow version
- Find a condition that allows us remove the last loop
 - Overall 2 nested loops only

Problem #4: Digit Sum in a Range

- Read three integers; N, A, and B
- Print the sum of the numbers between 1 and N, whose sum of digits is between A and B.
- Input ⇒ output
 - o 20 2 5 ⇒ 84
 - The numbers from 1 to 20, whose sums of digits are between 2 and 5 are: 2,3,4,5,11,12,**13**,14, 20. Add these up to get 84!
 - e.g. digits sum of 13 is 4: which is between (2, 5)
 - \circ 10 1 2 \Rightarrow 13
 - 100 4 16 ⇒ 4554

"Acquire knowledge and impart it to the people."

"Seek knowledge from the Cradle to the Grave."