

CSE2031

Winter 2017 Practice Questions

Here are some practice questions to test your C abilities

1. Write a program that display an isosceles triangle that made of '*'. The program reads an integer from the standard input. Then it display on the standard output a triangle with the base equal to n '*s. The row above that have $n-2$ '*s and so on until the first row contains either 1 or 2 '*s (depending on n being odd or even). The figure below shows the triangle with $n = 7$.

```
  *
 * * *
* * * * *
* * * * * * *
```

2. Write a program that displays a rectangle on the screen. The program reads from the standard input three parameters, width, height, and a character. Then it display a rectangle with width and height using the character read. For example, if the input 7 5 x. The output should be

```
XXXXXXXXX
X      X
X      X
X      X
XXXXXXXXX
```

3. Write a program that encodes a message. The message is read from the standard input. The key is an integer (k). The program arranges the message in a r -by- K rectangle. Then the program displays the message column by column. For example if the key is 11, the message is

If you are looking for ransom, I can tell you I don't have money. But what I do have are a very particular set of skills, skills I have acquired over a very long career. Skills that make me a nightmare for people like you\n

The program arranges it in a x-by-11 (22) matrix (the number of columns is 11 22)

If you are looking for
ransom, I can tell yo
u I don't have money.
But what I do have are
a very particular set
of skills, skills I h
ave acquired over a ve
ry long career. Skills
that make me a nightm
are for people like yo
u\n

Then, the output is displayed column by column

I uB ar aufr uaovytr
aIt fe and so on

4. Can you think of a decoder program for the previous encoder?