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(1) Please write a Python program to print a diamond.

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(2) Write a program that creates a dictionary containing course numbers and the room numbers of the rooms where the courses meet. The dictionary should have the following key_value pairs:

Course Number (key)	Room Number (value)
CS101	3004
CS102	4501
CS103	6755
NT110	1244
CM241	1411

The program should also create a dictionary containing course numbers and the names of the instructors that teach each course. The dictionary should have the following key-value pairs:

Course Number (key)	Instructor (value)
CS101	Haynes
CS102	Alvarado
CS103	Rich
NT110	Burke
CM241	Lee

The program should also create a dictionary containing course numbers and the meeting times of each course. The dictionary should have the following key-value pairs:

Course Number (key)	Meeting Time (value)
CS101	8:00 a.m.
CS102	9:00 a.m.
CS103	10:00 a.m.
NT110	11:00 a.m.
CM241	1:00 p.m.

The program should let the user enter a course number, and then it should display the course's room number, instructor, and meeting time.

- (3) A software company sells a package that retails for \$99. Quantity discounts are given according to the following table:

Quantity	Discount
10-19	20%
20-49	30%
50-99	40%
100 or more	50%

Write a program that asks the user to enter the number of packages purchased. The program should then display the amount of the discount (if any) and the total amount of the purchase after the discount.

- (4) Write a program that creates a dictionary containing the U.S. states as keys and their capitals as values. (Use the Internet to get a list of the states and their capitals.) The program should then randomly quiz the user by displaying the name of a state and asking the user to enter that state's capital. The program should keep a count of the number of correct and incorrect responses. (As an alternative to the U.S. states, the program can use the names of countries and their capitals.)

- (5) A bug collector collects bugs every day for seven days. Write a program that keeps a running total of the number of bugs collected during the seven days. The loop should ask for the number of bugs collected for each day, and when the loop is finished, the program should display the total number of bugs collected.

Students write these questions by themselves. If anyone uses AI tools or plagiarizes from others, no extra points will be awarded. I will deduct some points from your original points. Please think carefully!

(請寫這些題目的同學務必自行撰寫，若有透過 AI 工具或抄襲他人而撰寫程式，除不予加分外，將倒扣分數，請同學慎思!)