Day 4: Problem Solving

Problem 1. Each year the School of Computing Science needs to process exam marks for the students in the department. The highest achieving student gets a price and meets the Head of School. The people who fail a course receive a letter with information about what courses they've failed. The School needs to report how the class did on average. To progress to Honours students need to pass all courses and get an average of 70. How many satisfy the requirement? Finally, each year the Head of School gives a raise to the lecturer of the best performing course. It's also of interest to know which subject has worst performance. The staff are too busy, so they've asked you to write a program that can help them get that information. They've helpfully processed it for you, so that all you need is stored in lists.

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marks = [[56,89,70,92,67,100],[60,70,100,45,70,76],
[60,95,90,85,93,45],[55,80,56,45,51,76],[78,100,65,77,91,87],
[45,78,65,50,45,87],[32,50,45,67,40,80]]
students = ["Sofiat","Fionnuala","Alex","Ify","John␣Paul","
    Ben","Tom"]
subjects = ["Algorighms␣and␣Data␣Structures","Java","Web␣App␣
    Development","Databases", "Human␣Computer␣Interaction","
    Information␣Retrieval"]
```

Problem 2. Caesar cipher is one of the simplest ciphers; it's a substitution cipher that relies on shifting letters of the alphabet. The key of the cipher is just the offset used. For example, if we take as plain text *I love computing science*, we can encrypt it by shifting it by 4 and the result will be *M pszi gsqtyxmrk wgmirgi*. Note that the alphabet wraps around, for example *z* will shift to *d*. Your task is to implement the encryption and decryption methods for Ceasar cipher.