C# 5. Practice – Inheritance

1. Exercise
A company wants to employ **workers** and **trainees** for a project. The difference between trainee and the workers is that the *salary* of a trainee is only 65 per cent of the workers' salaries. During the hiring process must be given the *name* and the *job*. During the project these cannot change. The workers are *paid* based on the *number of hours worked* and have the *same hourly rate*. The worker occasionally **works** a few hours, in this case the number of hours worked increasing by the specified parameter value of the **works** method.

Write a program, which hires the candidates (read the data from the file), and then write the workers data to the console. Let's the workers work (a random value determines how many hours). Determine the salary of each worker. Compute the total salary paid for the project by the company.

2. Exercise
Write a program based of the Sleeping Beauty fairy tale. You may recall that at the christening of a king and queen's long-wished-for child, seven good fairies are invited to be godmothers to the infant princess. But one of them was a witch.

So there are **fairies** and **witches**. They all have *names*, and they all have some degree of *magical powers* (an int value). All of them can *bless* or *curse*. The wizardry (ie. a blessing or a curse) exerts some degree of impact. This effect is a whole number that is expected based on the *strength* of that **lady**. Fairies case that strength is multiplied by a factor which is valid uniformly for each fairies. Witches case that strength is multiplied by a factor which uniformly valid for each witch. Witches case of this effect is complemented by a factor of -1 as well.

Because of the good activities increase the people' s strength, and the bad activities - at least in the fairy tale - decrease them, so during wizardry the fairies' strength increases by 1, and the witches' strength decrease by 1, but only until not be equal with zero.

Sleeping Beauty is shown a spindle by the old woman. *Sleeping Beauty*, by Alexander Zick (1845–1907)

Everyone can give back (toString ()) whether she is fairies or witch, as well as the name and her strength. If the witch's strength reduced to zero, then the displayed data can be included in that "she has been improved."
Write a christening of the story, that is: read the names of invitees from a data file (use the invitees.txt file, but you can write your own too). The initial value of lady's strength should be a random value. And whether fairy or witch, is also a matter of chance. Please note also that about x% of the ladies are witch.

After the invitation to display the presence of ladies, and then one by one all "Conjure" and calculate their overall effect.
Calculate the average strength and display the name of fairies who has the highest magical strength and the name of the most evil witch.