Activity 1 – Recent Advances and New Challenges

During the last century the computing evolution was described as sequences of events which represent a huge progress. These events are grouped in generations.

1. Identify for each generation the main tech **hallmark**. Write down the approximate dates for each generation. (dots correspond to the number of characters)

First Generation (____–____) …… ….. Electrical component
… ……. architecture
Second Generation (____–____) ……. Electrical component

Third Generation (____– ____) ……. ……..

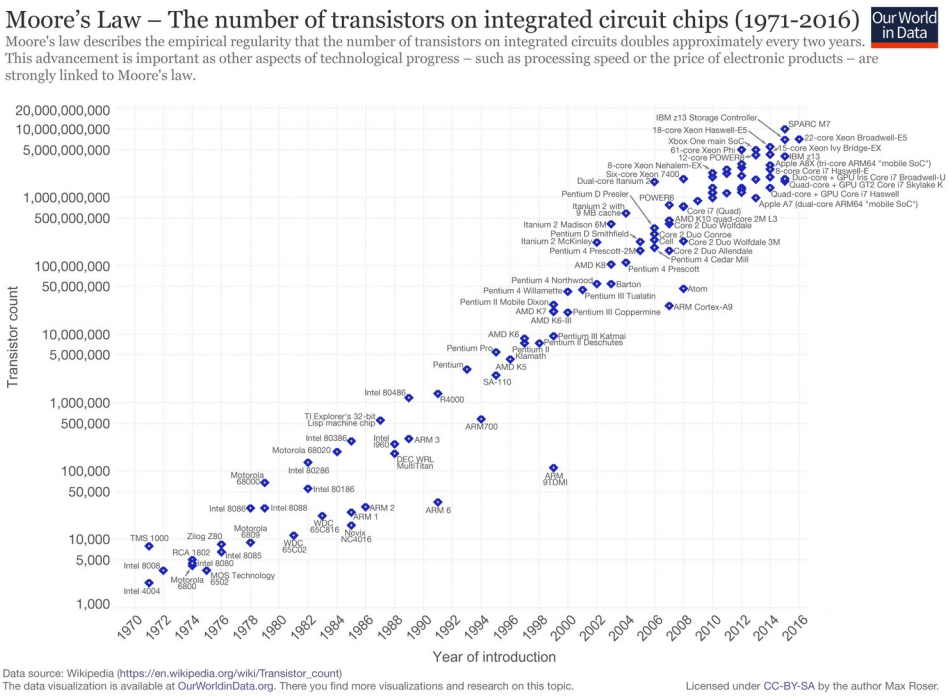
Fourth Generation (____–____) ……..

Fifth Generation (____–____) ……..

2. In your opinion, which are the tech hallmarks during:
   - the 1990s?
   - at the beginning of this century (2000-2010)?
   - And What about (2010-2020)?

3. Which are the main differences between hallmarks (1990-2020) and the tech hallmarks on the previous generations (First to Forth).

Is reportedly that the Moore's law is coming to an end. The following figure is showing the evolution of the number of transistors on integrated circuits.



4. When we increase the number of transistors per unit space so disproportionately, what two main challenges must be faced?

5. Do you think that the curve is representing the natural growing of transistors in integrated circuits, or that the manufactures are doing something special to maintain this behavior?

6. When would you date the appearance of the first distributed application?

7. During the nineties until now were created different architectures (different to the usual Client/Server) that takes profit of the joint computing power and sharing of distributed resources. Can you mention some of these architectures?

8. At the beginning of the XXI century, some authors said that the big challenges will be the Artificial Intelligence, Robotics, Expert Systems, communication infrastructures, molecular computers, etc. In your opinion, What are the current most important challenges for manufacturers and governments in the field of computing?

Instructions

- Try to provide short answers properly justified.
- Create a document adding questions and answers.
- Deliver a PDF document with the author name.
- This activity is individual