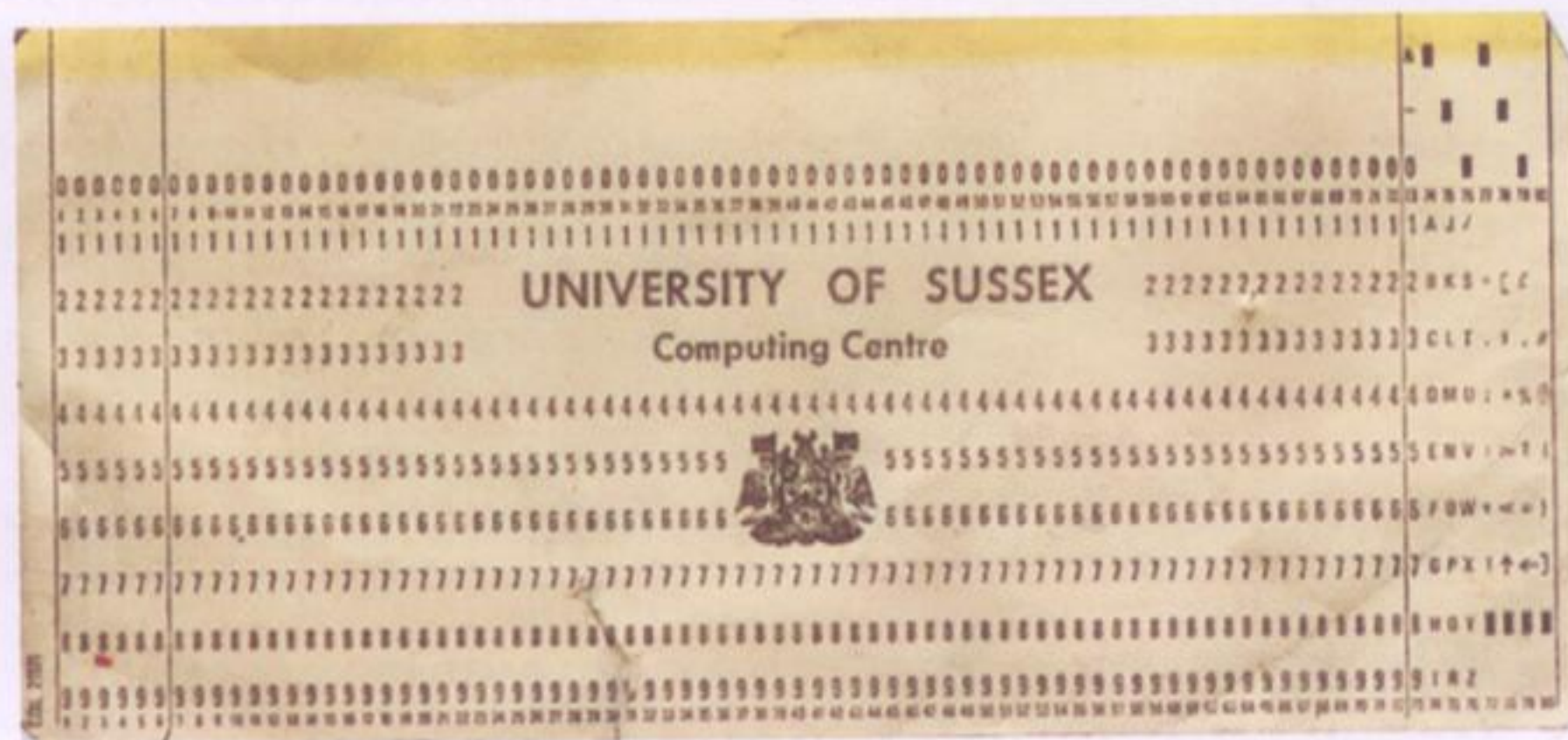


Reading 1

► You are going to read a text, split into three parts, that focuses on the history of computing and computers. Before you proceed, do you happen to know what earlier computers looked like? Can you choose three adjectives that could describe them? e.g., *The computers of the '40s were bulky.*



A punch(ed) card

► What do the terms *Pascaline*, *Leibniz Wheel*, *Jacquard loom*, and *Analytical Engine* share in common? Have you ever heard the term 'punched cards'? What does it refer to?

► If you had to write the story of the computer yourself, would you be able to discern certain distinct periods/stages in which computers had features that differentiated them from those of other periods/stages? Work in pairs. Then, scan the three parts of the text below and compare your answers:

The story of the computer - Part A

The history of computing and computers could be divided into three periods. The first period (before 1930) features several examples of (mechanical) computing machines which bear little resemblance to the modern computer.

A. From the beginning of time up to 1930: In the 17th century (between 1642 and 1644), the famous French mathematician and philosopher Blaise Pascal invented a mechanical calculator dubbed *Pascaline*. *Pascaline*, also known as the *arithmetic machine*, could perform addition and subtraction operations as well as multiplication and division through repeated addition and subtraction.

A more sophisticated mechanical calculator called the *Leibniz Wheel* (or the *Leibniz drum*) was invented a little later (in 1671) by the German mathematician Gottfried Leibniz. This 'wheel' is regarded as 'the first true four-function calculator'.

The beginning of the 19th century (between 1804 and 1805) saw the creation of the first machine ever that used the idea of storage and programming. The machine, called the *Jacquard loom*, after its inventor Joseph-Marie Jacquard, was actually a fabric loom that used punched cards which instructed the loom to perform automated tasks in the manufacture of textiles.

In 1823, Charles Babbage, one of the leading pioneers in the field, invented the *Difference Engine*, which was capable of doing a lot more than simple arithmetic operations; for instance, it could solve polynomial equations. Fourteen years later, Babbage developed another machine which he named the *Analytical Engine*. This machine shares numerous similarities with modern computers, as it consisted of four components that are the essential parts in every computer today: the mill (corresponding to a modern central processing unit [CPU]), the store (memory), the reader, and the printer (the modern input and output devices).



Jacquard loom at Norwegian Technology Museum, Oslo.