Your company has two offices located approximately one kilometre apart. There is a need to transfer data between the two offices at speeds up to 100 Mbps. Design two solutions that are technically and financially feasible for interconnecting the two buildings. Provide appropriate justification to support the proposed solution.

Step 1:

Twisted pair and Coaxial cable

Step 2:

Most contemporary Ethernet networks and telephone communications employ twisted-pair cable as their form of cabling. A circuit formed by two wires can transport data. To prevent crosstalk, the noise produced by nearby pairs, the pairs are twisted.

A form of copper cable known as coaxial cable is specifically designed with a metal shield and other signal-blocking components. Cable TV providers generally employ it to link their satellite antenna installations to customer residences and places of business.

Internet connections, television signal distribution, and radio transmissions all frequently employ coaxial cables. Double-twisted cable: Twisted Pair Cable is a type of guided media in which two wires are twisted together to create a circuit for transmission.

Step 3:

Over distances of up to 500 metres, coax cables can be chosen to transport 10 Mbps or 100 Mbps. However, it is further reliant on the transmission hardware at either end. Although it's rare, certain internet service providers can obtain speeds of up to 1000 Mbps or 1 Gbps. In labs, specialised cables with speeds of up to 10Gbps are employed.

However, you should actually use CAT5E or CAT6 structured cabling for household wiring unless you are putting a backbone in a building or you work for an internet service provider. Twisted pairs are used in place of coaxial architecture. It connects straight to your PC and modem/router using the RJ45 connections and sockets you'll already have in place.