The picture shows the different phases to produce a component call C. This component is obtained by equally mixing the component A and B.

The C component is critical for the next processes, for this reason must be produced without stops.

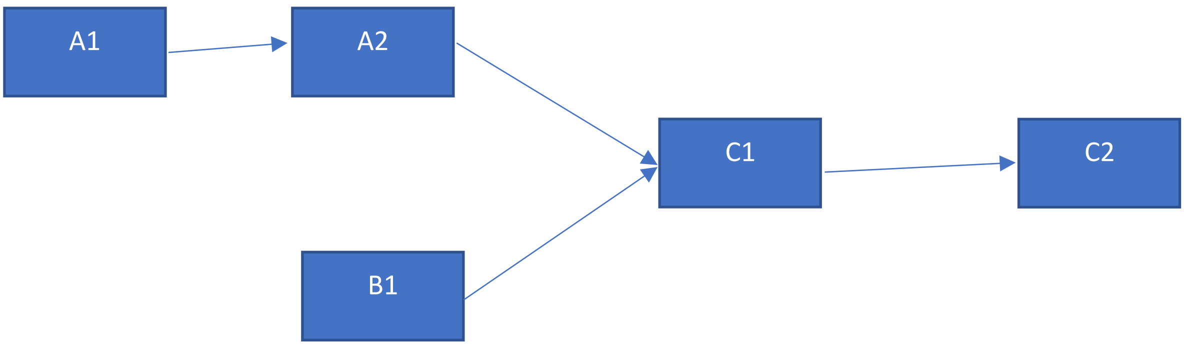
There are not intermediate storages between the different phases A1, A2, B1, C1, C2.

Between the considered line and the next processes there is a storage where the component C is stored. This storage allows that the productivity of the considered line can be 90%

In the following table there are all the characteristics of the machine in each phases.

Phases	Availability	Production Capacity [kg/h]	Scrapped coeff.	Cost machine [Keuro]	Operating cost [keuro/h]	Operators
A1	0.95	150	0.07	50	0.02	4
A2	0.9	70	0.1	70	0.015	3
B	0.95	140	0.05	800	0.04	5
C1	0.9	260	0.08	150	0.008	6
C2	0.9	160	0.1	300	0.005	5

Considering that the production capacity of next process is 200 kg/h, sizing the considered line in order to have an availability of 90% and a minimum cost.



Raw material [euro/kg] A	3
Raw material [euro/kg] B	4,5
Plant cost [euro/h]	20
Night shift	20%
Public holidays shift	40%

The opening time is 350 day per year