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Title: Supply model in academic workshop of coffee bean roasting

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Introduction

In this paper, we present the identification of an analysis model through the Dijkstra algorithm. Refers Edsger Dijkstra, who first described it in 1959.

There are studies, consider a vertical coffee supply chain where processors buy the raw coffee beans from planters, process them to convert them into green coffee beans, and sell them to firms or retailers who in turn sell the roasted or powdered coffee to consumers…

In the Faculty workshop has a mortar machine, toaster, mill, sealant, and tools for roasting, grinding and packaging coffee bean**.**

Figura 1 Academics and researchers from the University of Veracruz

Methodology

Investigación documental

Visita de campos cafetaleros

Observación de producción

Recopilación de tiempo y costos

Aplicación de técnicas

The selected suppliers are from Farm Monte Azul (FMA), farm Coffee-Tal Apan, and farm Xico. For the study, the arabica type green coffee grain with 5% defects, 12.5% moisture, harvested at 1100 meters above sea level is used.

Results

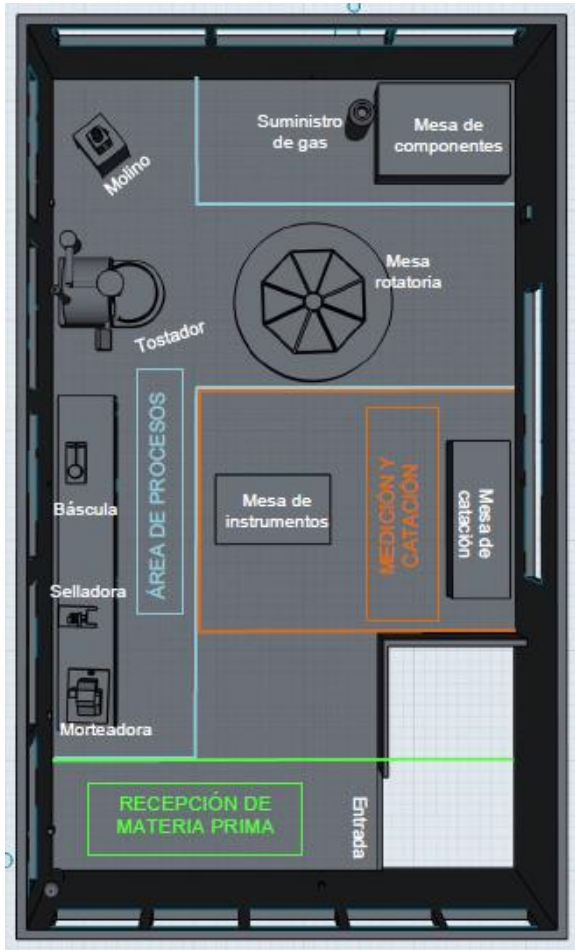


Figure 2. Distribution of the working area (Lay out).

Figure 3. Toaster machine.

Figure 4. Mortero machine for grain.

Node	Iter. 1	Iter. 2	Iter. 3	Iter. 4	Iter. 5	Iter. 6	Iter. 7	Iter. 8
A	(0, -)	*	*	*	*	*	*	*
B		(20, A)	*	*	*	*	*	*
C		(21, A)	(31, B)	*	*	*	*	*
D			(39, B)	(51, C)	*	*	*	*
E				(42, C)	(90, D)	(60, F)	*	*
F					(48, D)	*	*	*
G						(71, F)	(77, E)	*
H							(135, E)	(129, F)

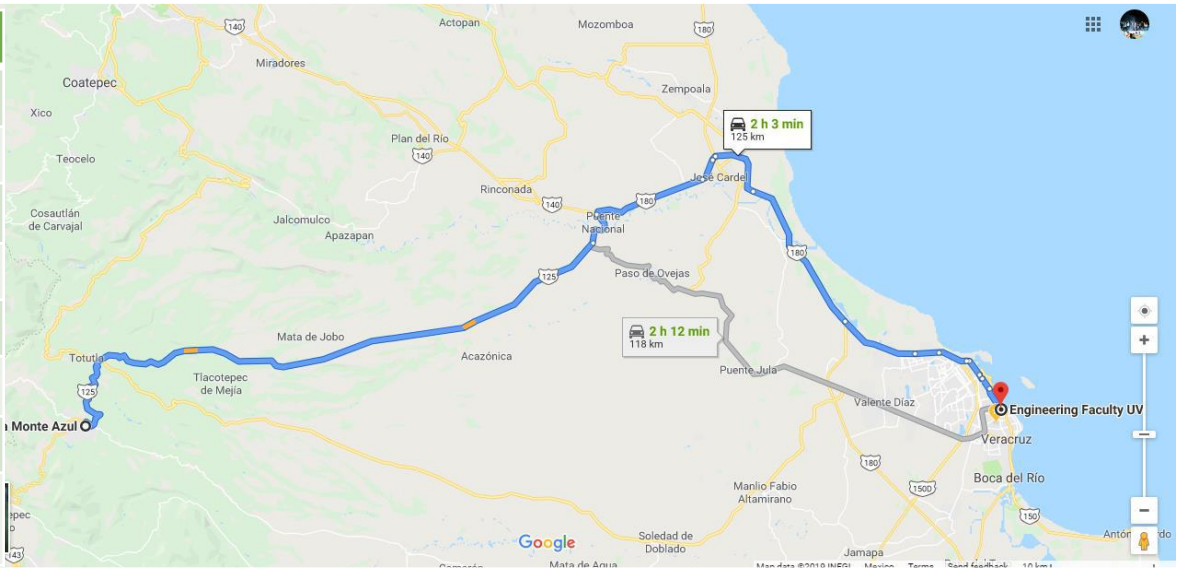
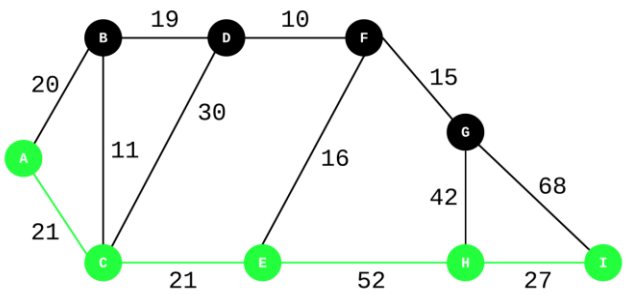
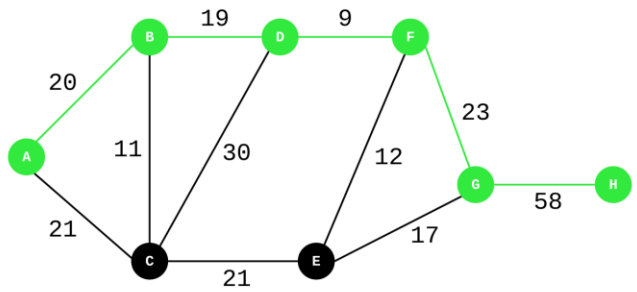


Table 1. Iterations of the algorithm Xico Inn

Charts. Route found by Dijkstra.





Conclusions

Visits to farms are important to define the processes used in cultivation, wet or dry profit process, storage and distribution of this important product for the economy of the state of Veracruz.

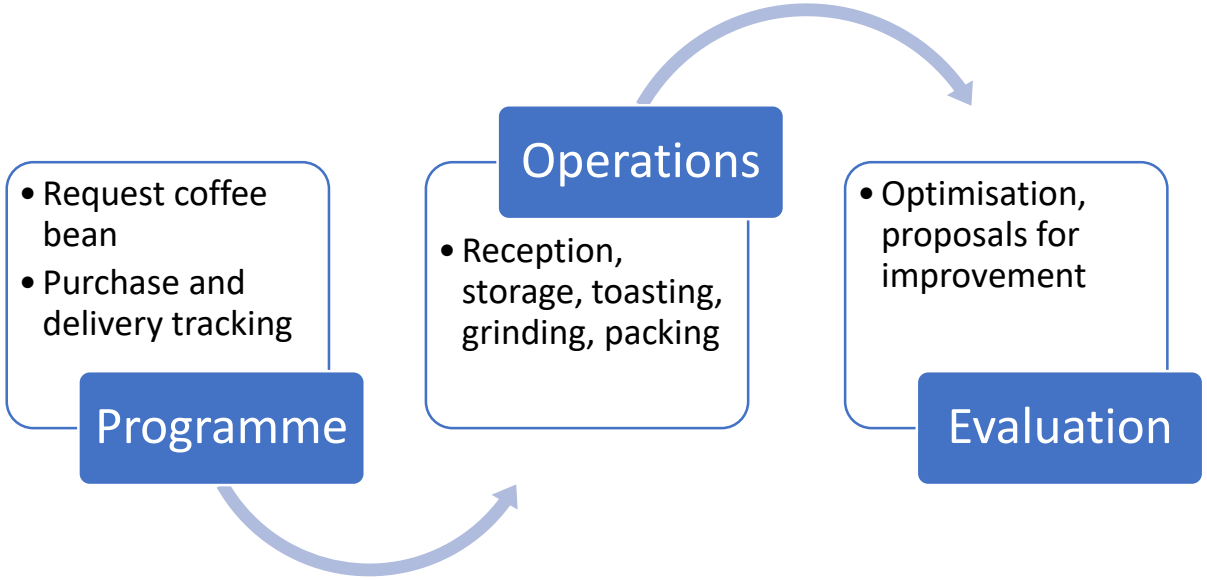


Figure 5. Flow diagram.

Supply chain management (SCM) practitioners currently face multiple challenges, ranging from eradicating supply chain disruptions to improving the flow of goods, and from increasing the need for supply chain flexibility to mitigating bullwhip effects. To address these growing challenges, firms are developing novel capabilities in digitalization or Industry 4.0, sustainability, servitization, and e-commerce, among others (Sandberg, et al., 2022).

Conclusions

Production and buying indicators were proposed for resource management and supply planning. The indicators are savings in transport costs of up to 60% compared with first expenditure and ensure the availability of raw material for internships during the academic semester.

Future work includes the possibility of marketing the product as roasted or ground coffee, proving a business register for the support of the entrepreneur.

Figure 6. Project academic and students on visits.

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