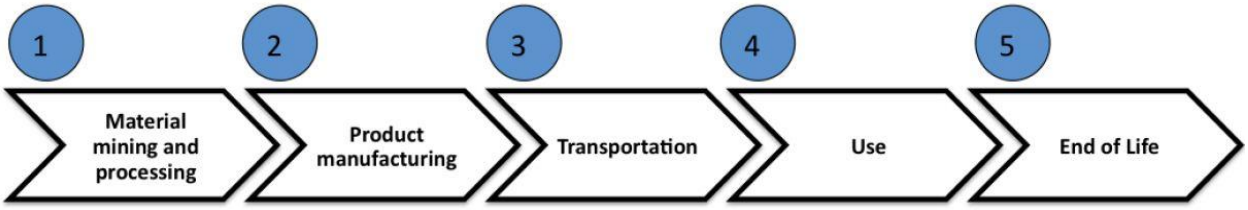
ASSIGNMENT

Q1. Consider five common products: a car, shoes, laundry detergent, fleece jacket, soft drinks and milk, and the following five steps in their life cycles: resource extraction, manufacturing, transportation, use, end of life. Considering carbon dioxide emissions in the life cycle of each product, identify two stages in the life cycle that have the largest CO_2 emissions for each product.



Q2. Raj is a class 9th student aspiring to be an engineer with his hard work and dedication. Raj stays with his younger brother and parents in a 2 BHK flat. His school is assumed to be 10 km from his home and his father drops and receive him personally on his Royal Enfield motorcycle. His mother prepares food thrice a day with average consumption of LPG to be around 480g per day and average consumption of water to be around 8 L per day generating an organic waste of 0.2 kg. The family uses electricity operated geysers for a period of an hour each day.

Being a hardworker, apart from the academic books Raj completes 15 number of 200 pages register in one year.

Find the number of mango trees required to sustain the CO_2 emission caused because of Raj's lifestyle for an entire year.

Assumptions:

1. Number of tubelights at home : 7 (20 W power consumption - 8 hours time)
2. Number of fans at home : 4 (75 W power consumption - 15 hours time)
3. Number of geysers: 2 (1160 W power consumption- 1 hour time)
4. Number of refrigerators: 1 (200 W power consumption- 24 hours time)
5. Number of air conditioners: 2 (1650 W power consumption- 8 hours time)
6. Number of microwave ovens: 1 (1200 W power consumption- 0.08 hours time)
7. Number of washing machines: 1 (700 W power consumption- 1 hour time)
8. LPG consumption: 480g per day
9. Average of Royal Enfield : 43 kmpl

Data given:

1. 1 of mango tree sequestrates 52.08 kg of CO_2 annually
2. 1KWh of electricity~0.82 kg CO_2 emission
3. 1kg of LPG~2.9kg CO_2
4. 1 litre of petrol~ 2.325 kg of CO_2 emission

Sr. No	Appliance / Service/ Product	Number	Power consumption (W)	Time	Total Power consumption (KWh)	CO_2 emission (kg)	Total
1	Tubelight					0.82	
2	Fan					0.82	
3	Refrigerator					0.82	
4	Air conditioner					0.82	
5	Microwave					0.82	
6	Washing machine					0.82	
7	Geyser					0.82	
8	Pages					2.9	
9	LPG (kg)					2.9	
10	Organic waste (kg)					0.182	
11	Petrol (litres)					2.325	
12	Diesel (litres)					2.73	
					Total Emissions		
					CO_2 emission sequestrated in 1 year (kg)		52.08
					Number of Trees required		