

E-WASTE PROBLEM AND MANAGEMENT

GROUP-6 (06,46,54)

LITERATURE REVIEW:

Ref No	AUTHORS (Year)	Title	Methodology	Key Findings	Year Gap
1)	Eric Williams, Ruediger Kuehr (2003)	Today's Markets for used PCS and Ways to Enhance them	Due to requirement of better performance people keep changing their setups in very short span but everyone doesn't require that much high-end setup so they can do charity of their old device at educational places or can even exchange and sell or can gift it to someone	This article stated and proposed an idea of reusing the old PCs in order to increase the lifespan of the PCs as reusing also impacts and helps in lowering the E-waste	1. Recycle and Dispose of E-Waste Properly 2. Maintain your Electronics

			who is in need of it.		
2)	Ramzy Kahhat, Junbeum Kim, Ming Xu, Braden Allenby, Eric Williams, Peng Zhang(2008)	Exploring e-waste management systems in the United States	So the idea was to take a little amount of deposit from buyer during the purchase of gadget and when the lifespan of gadget is over and user wants to remove it he can claim for the return of deposit by verifying his documentation and the user will get his deposit+reward once the gadget is collected from his end. After that the company will decide on how to recycle the E-waste or resell if it can be used for more time.	This article talks about the condition of U.S regarding E-waste during 2008 . In this the author have alerted the government that it's very important to take needful steps to slow down the speed of E- waste referencing to 2005 E-waste collection during 2005 which was around 1.3 metric ton and have informed that many countries such as Japan, South Korea , Taiwan ,etc have already implemented rules for E-waste . In this article the author have also proposed an idea of creating a electronic market based on recycling electronic gadgets after their end-life	<p>1. Robotic eWaste Monitoring Systems</p> <p>2. Robotic Processes for eWaste Sorting</p> <p>3. E-Waste Recycling Plants that are Innovative</p>

3)	Xinwen Chi, Martin Streicher- Porte, Mark YLWang, MarkusA Reuter(2010)	Informal electronic waste recycling: A sector review with special focus on China	The informal recyclingmethod should be replaced with the formal recycling method of electronic devices to reduce improper recycling of E-waste and damages associated with it	The article raises the problem of informal electronic waste recycling in China and countries where the demand for second hand devices are more. Informal recycling of waste can be	1.Sell old Electronics 2. Donate old Electronics 3. Maintain your Electronics
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			which can be more than environmental damage.	dangerous and should be halt.	
4)	Hassan Taghipour, Parviz Nowrouz, Mohamad Asghari Jafarabadi, Jalil Nazari, Ahmad Asl Hashemi, Mohammad Mosaferi, Reza Dehghanzadeh (2012)	E-waste management challenges in Iran: presenting some strategies for improvement of current conditions	In order to gain information about E-waste in Iran they first selected only 8 electronic gadgets and waste produced by them every year and found that only those 8 devices have produced more than 110,000 ton metric waste in each year from 2008-2010. They also discussed about a most attractive policy in which the Health Ministry and the Environmental Protection Agency should strictly supervise E-waste collection, storage, and recycling and/or disposal, and the Trade and Industry Ministries must have more control over the import and production of electronic goods.	This article states the condition of Iran in 2012 and discusses about the lack of information about E-waste which is creating an issue in treating it effectively and also about the policies which are still not implemented and so are useless.	Educating about E-waste
5)	Jalal Uddin (2012)	Through innovative changes in product style below EXTENDED	Manufacturers & suppliers need to set goals for reducing electronic waste. Encourage them to buy	This article discusses about use of environmentally friendly substitutes for	1. E-Waste Recycling Plants that are Innovative

		PRODUCER	back old electronic	dangerous substances, these impacts can be	2. E-Waste management to achieve climate sustainability goals.
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		RESPONSIBILITY(ERP)	products from consumers, disposing bulk e-waste only through authorized recyclers and send nontradable e-waste to authorized private developers for final disposal.	mitigated. A legal framework must be there for imposing EPR, RoHS for attaining this goal.	
6)	Peeranart Kiddee, Ravi Naidu, Ming H Wong(2013)	Electronic waste management approaches: An overview	The key to success in terms of e-waste management is to develop eco-design devices, properly collect e-waste, recover and recycle material by safe methods, dispose of e-waste by suitable techniques, forbid the transfer of used electronic devices to developing countries, and raise awareness of the impact of e-waste. No single tool is adequate but together they can complement each other to solve this issue.	In this the author is trying to give all possible overview of toxic substances present in e-waste, their potential environmental and human health impacts together with management strategies currently being used in certain countries. Several tools including Life Cycle Assessment (LCA), Material Flow Analysis (MFA), Multi Criteria Analysis (MCA) and Extended Producer Responsibility (EPR) have been developed to manage e-wastes especially in	<ol style="list-style-type: none"> 1. Company Initiated Recycling 2. Recycle and Dispose of E-Waste Properly

				<p>developed countries and stated EPR policy as one of the good policy for the nation.</p>	
7)	Vijay N. Bhoi ,	E-waste: A new environmental	Most planning authorities want a	<p>This article discuss about the problem of</p>	<ol style="list-style-type: none"> 1. Robotic eWaste Monitoring Systems 2. Robotic Processes for eWaste Sorting

	<p>Trupti Shah (2014)</p>	<p>challenge</p>	<p>worked out quarry to be used for landscaping rather than a landfill site which no one wants in their back yard. Product design must be employed to help to minimize not only the nature and amount of waste, but also to maximize end- of-life recycling. Manufacturers, retailers, users, and disposers should share responsibility for reducing the environmental impacts of products. Adopt product stewardship approach i.e. a product-centered approach should be adopted to preserve and protect environment.</p>	<p>E-waste as well as the health risk associated with recycling of this waste and also discuss bit about how illegally the E-waste are imported in India and China.</p>	
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8)	MB Samarakoon (2014)	A review of electrical and electronic waste management in Sri Lanka	The current emphasis is on end-of-life management of e-waste activities, such as reuse, servicing, remanufacturing, recycling and disposal, upstream reduction of e-waste generation through green design	This article addresses the issue of E-waste and emphasizes on developing a sustainable E-waste management strategy in Sri Lanka as during his study author understood that there is no proper E-waste	<ol style="list-style-type: none"> 1. E-Waste management to achieve climate sustainability goals. 2. Check for Manufacturer Recycling Programs 3. Educating about E-waste
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			and cleaner production must be introduced to enhance a sustainable e-waste management system for Sri Lanka.	management policy in their nation and also alerted about the consequences of improper handling of E-waste.	
9)	Binegde(2015)	Electronic Waste Generation and Its Management in Bole and Akaki Kaliti Sub cities of Addis Ababa Ethiopia	Proportional selection of sample respondents from various sectors and random selection for questionnaire survey were adopted along with key informant interview and direct field observations. The total sample size was 191. The study period was March 2013-February 2014. Chi square analysis showed significant difference of the total number of e-goods and the obsolete e-goods in both Sub cities. Total number of obsolete electronic items in the selected woredas of two of the ten Sub cities in Addis Ababa was 5654, pointing to the possibility of considerable	The study concluded that the repair shops are contributing a lot by increasing the life span of electronic devices and thus reduce the number of thrown away e-goods. But low quality of electronic goods, high repair cost and availability of cheaper new goods attracts the consumers towards the throw away culture. 50% of the participants were disposing e-wastes along with municipal solid wastes. Repair shops were practicing burning and burial of electronic residues. The formal recycler in	1. Sell old Electronics 2. Donate old Electronics 3. Recycle and Dispose of E-Waste Properly

			volume of obsolete items in the remaining 8 Sub cities.	Ethiopia (CRTC) offering service, despite its limitations due to lack of aspects including technology, market flow for e- residues, work force and store spaces.	
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10)	Vijay Kumar Garlapati (2016)	E-waste in India and developed countries: Management, recycling, business and biotechnological initiatives	The key to success in terms of e-waste management such as Extended Producer Responsibility (EPR) and Producer Responsibility Organization (PRO) initiatives have been presented in a lucid manner. E-waste arena is a platform for business initiative for energy production (hydrogen and electricity) and precise metal recovery (gold, silver and platinum) through biotechnological approaches.	This review paper presents an overview of global e-waste stats, health concerns of e-waste components along with the waste management, recycling, legislative policies and recommendations related to e-waste. Existing and future initiatives of e-waste management have been addressed by explaining the developed countries initiatives towards e-waste management.	<ol style="list-style-type: none"> 1. Recycle and Dispose of E-Waste Properly 2. Robotic eWaste Monitoring Systems 3. Buy-Back Programs
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11)	Khaiwal Ravindra, Suman Mor (2019)	E-waste generation and management practices in Chandigarh, India and economic evaluation for sustainable recycling	The study investigates generation of E-waste and various management practices being followed in Chandigarh, India using a standardized questionnaire and physical survey of 300 households of different income groups.	The study revealed that only 30% of the respondents know about E-waste and its environmental hazards, only 10% of respondents had an idea about e-waste collection centre in city, and only 2% of the respondents were using them. Most of the E-waste generated in Chandigarh is handled by informal sectors.	<ol style="list-style-type: none"> 1. Robotic eWaste Monitoring Systems 2. Robotic Processes for eWaste Sorting 3. E-Waste Recycling Plants that are Innovative 4. Check for Manufacturer Recycling Programs 5. Educating about E-waste
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Assignment No: 1

computer fundamental

Computer is an Electronic Device. It is use to calculate and manipulate data. If we give any instruction to the computer it gives us output(Result).

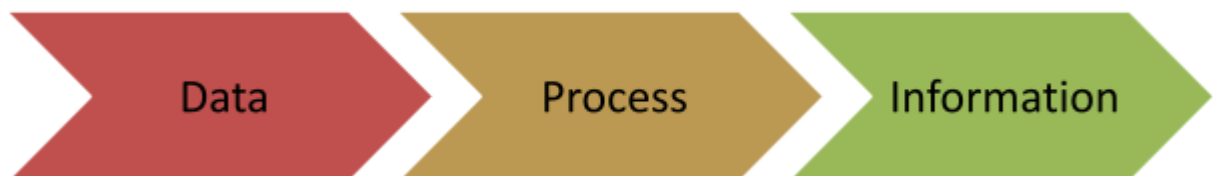
What is computer

The word computer comes from the word ”*compute*”, which means “to calculate”.

Thereby, A computer is an electronic device that can perform Arithmetic operations as well as logical operations at high speed.

A computer is also called a data processor because it can store,process and retrived data whenever desired.

Data process Information



Assignment: 2

HISTORY OF COMPUTERS

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The **MODERN** electronic digital computers are the result of a long series of developments, which started some 5000 years ago with the abacus. The first mechanical adding device was developed in 1642 by the French scientist philosopher, Pascal.

In 1835, Charles Babbage formulated his concept of an “analytical machine” which combined arithmetic processes with decisions based on the results of the computations.

Do the following task

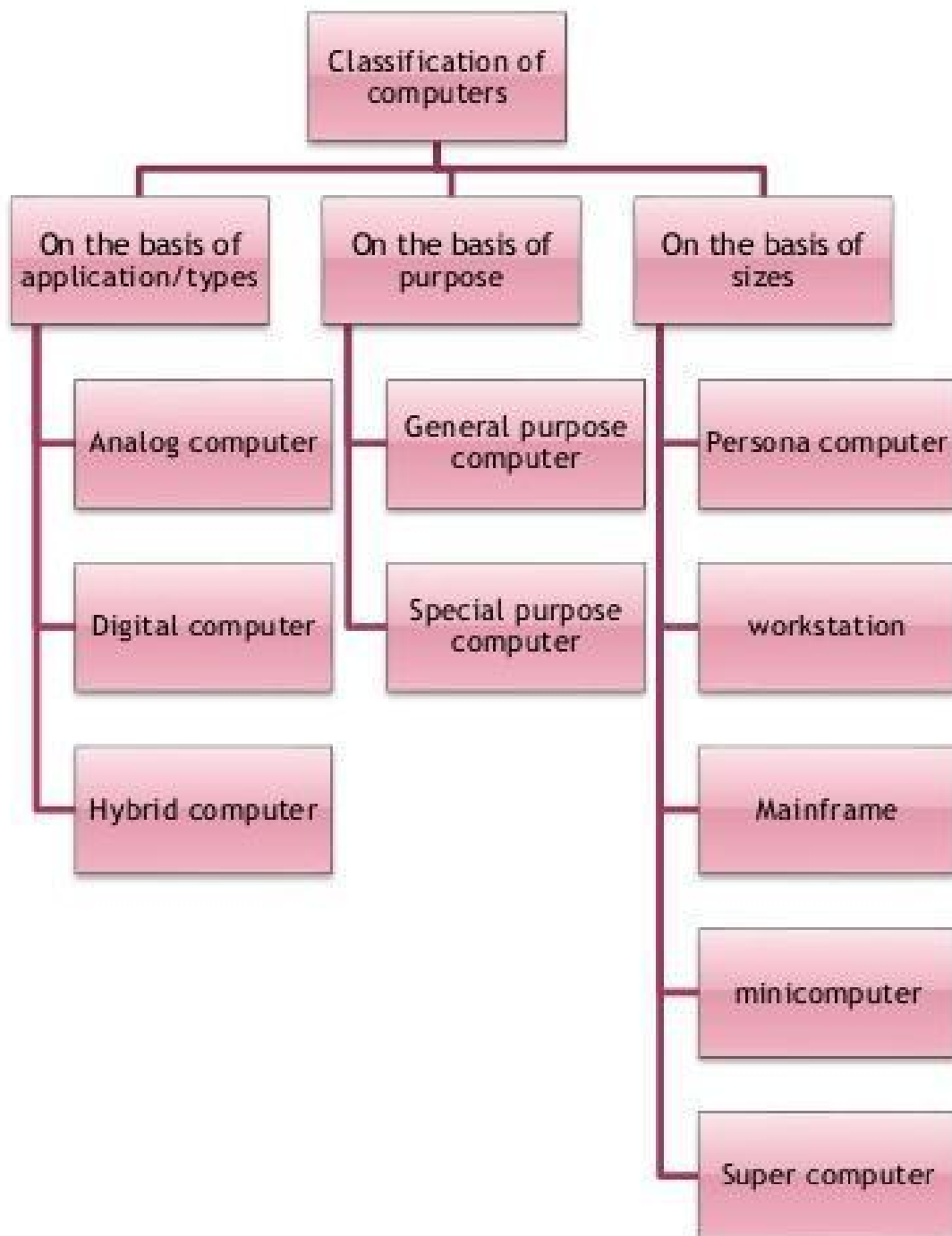
1. Insert date at the beginning of the 1st Paragraph
2. Capital each word of the 1st line (Hint: Change Case)
3. In the beginning of the first paragraph use drop cap for the word “The”
4. Use Other Meanings for words like mechanical, philosopher, processes and concept by using thesaurus.
5. Find the word “modern” and change it to word “new” (Hint: Find & Replace)
6. Add header and footer. Type “Assignment” in Header and Page no. in footer
7. Give left and Right Margins as 1 inch. Give line spacing as 1.5
8. Try all the options of column, and divide this paragraph in 3 columns with line in between
9. Add watermark as “Practice” to your page.
10. Insert page border and Page colour

FUNCTIONALITIES OF A COMPUTERS

Digital computer carries out the following five functions:

- ❖ Step 1 - Takes data as input.
- ❖ Step 2 - Stores the data/instructions in its memory and uses them as required.
- ❖ Step 3 - Processes the data and converts it into useful information.
- ❖ Step 4 - Generates the output.
- ❖ Step 5 - Controls all the above four steps Input Process Output Computer

Assignment: 3



Assignment: 4

The Five Generations of Computers

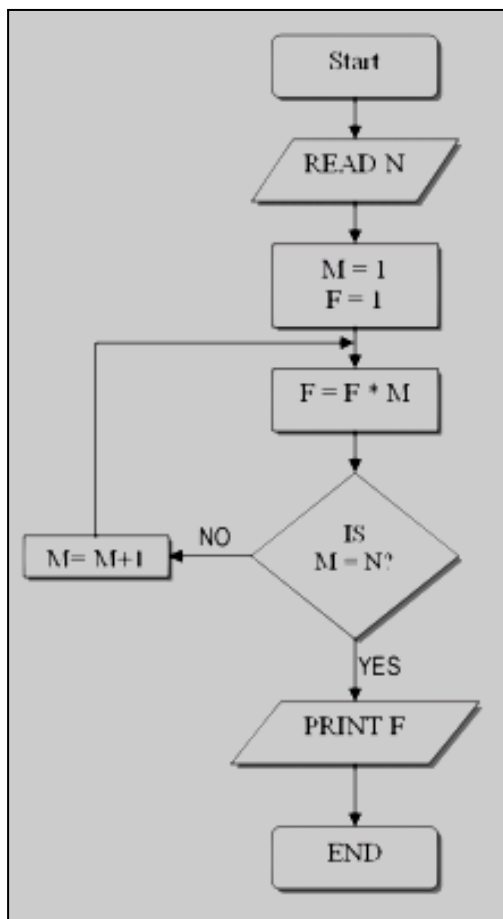
Criteria	First Generation	Second Generation	Third Generation	Fourth Generation	Fifth Generation
Basic Electronic Components	Vacuum tubes or	Transistors	Integrated Circuits (ICs)	Very large scale Integration	Ultra Large Scale Integration (ULSI)
	Valves				
Speed	Slowest	Slow	Medium	Fastest	
Size	Largest	Large		Smallest	Medium
Availability	Outdated			Current	Yet not Build

1. Insert a row after Availability and add the below data

Reliability	Unreliable	Less reliable	More reliable	Most Reliable	Yet to judge
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Assignment: 5

Flow Chart



Assignment: 6

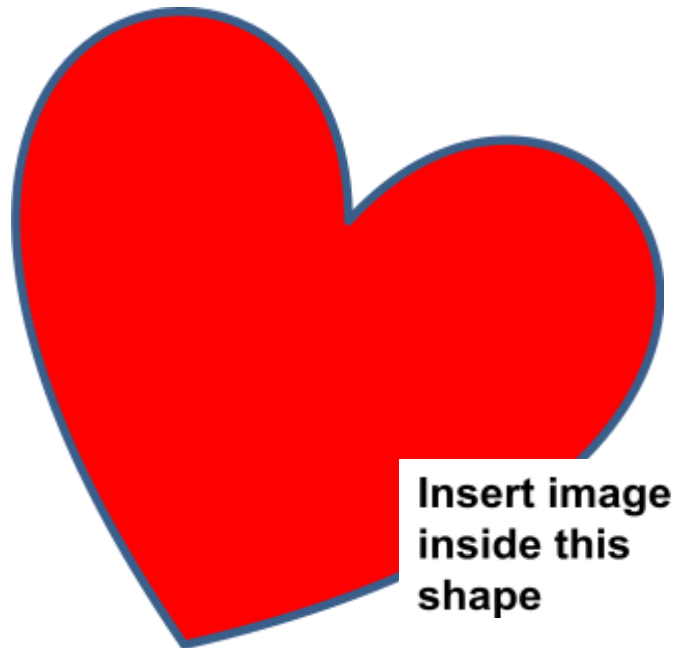
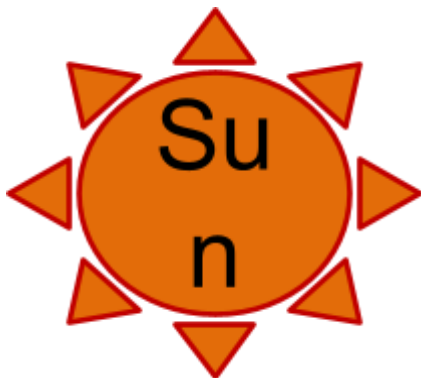
1) Number of Cookies Consumed in 3 Months

Names of Cookies	June	July	August
Chocolate cookies	50	90	48
Oat Meal	30	50	20
Coconut	22	70	65
Sugar	20	50	80

Make a Bar Chart from the above given details

Insert Picture(image) crop into half and make it +20 brightness and +20 contrast.

Insert a clip art, duplicate it



**Insert image
inside this
shape**