TRANSCODING

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What is Transcoding ?
(Data Visualization)

Transcoding is the process of converting (decoding or encoding) the data from one form to the other form.

Eg. Raw data into visual form or vice versa

- Why is it required ?
- The best way to convey info.is visuals not descriptions
- Communicates quickly and effctively
- Maximum data in minimum space
- Interpretation and analysis become esay
- Both can cocentrate easily
- Simlifies complex into easy
- More appealing and attatractive to the senses

GRAPHIC AIDS AND PURPOSE

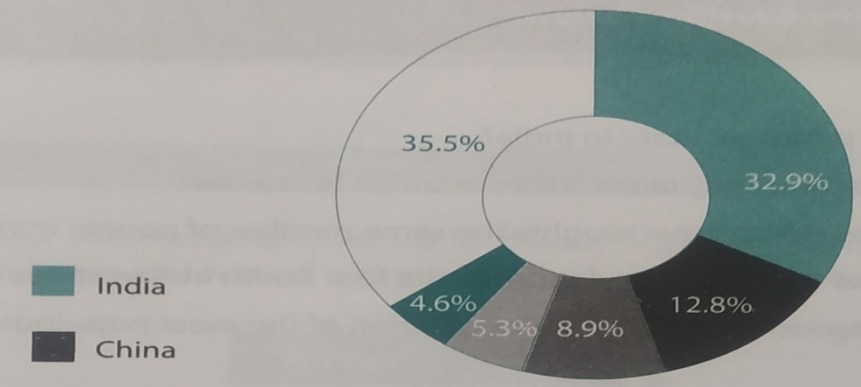
Pupose / Functions	Graphic Aids
To organise numerical data/ to show quantitative data and related info	Table
To show comparative and contrastive data	Bar charts/ Diagrams
To show trends	Line graphs
To show a process or steps /instructions	Flow Chart
To show info in percentage / proportions	Pie Chart
To present data about a geographical region	Maps
To show how something is organised	Organogram

Points to be noted

- When describing the diagrams degrees comparison is of much use.
- Use the sequencers and linkers (connecting words) as and when required
- Eg. In the beginning, initially, first of all, firstly, then, next, beforehand, previously, earlier, on the other hand, at the same time, simultaneously, later, following this, eventually, subsequently, finally, lastly.

Pie Chart – Top Five nations with extreme poverty

Top five countries with the largest share of the global extreme poor, 2010 (Percentage)



(Source: The United Nations Millennium Development Goals Report 2014. URL: http://www.un.org/millenniumgoals/2014 MDG report/MDG 2014 English web.pdf)

Pie Chart Description

The above chart is taken from the annual report of the United Nations Millennium Development Goals published in 2014. As the title of the graphic explains, it represents the percentage of extremely poor people living in the five most poverty-stricken countries in the world.

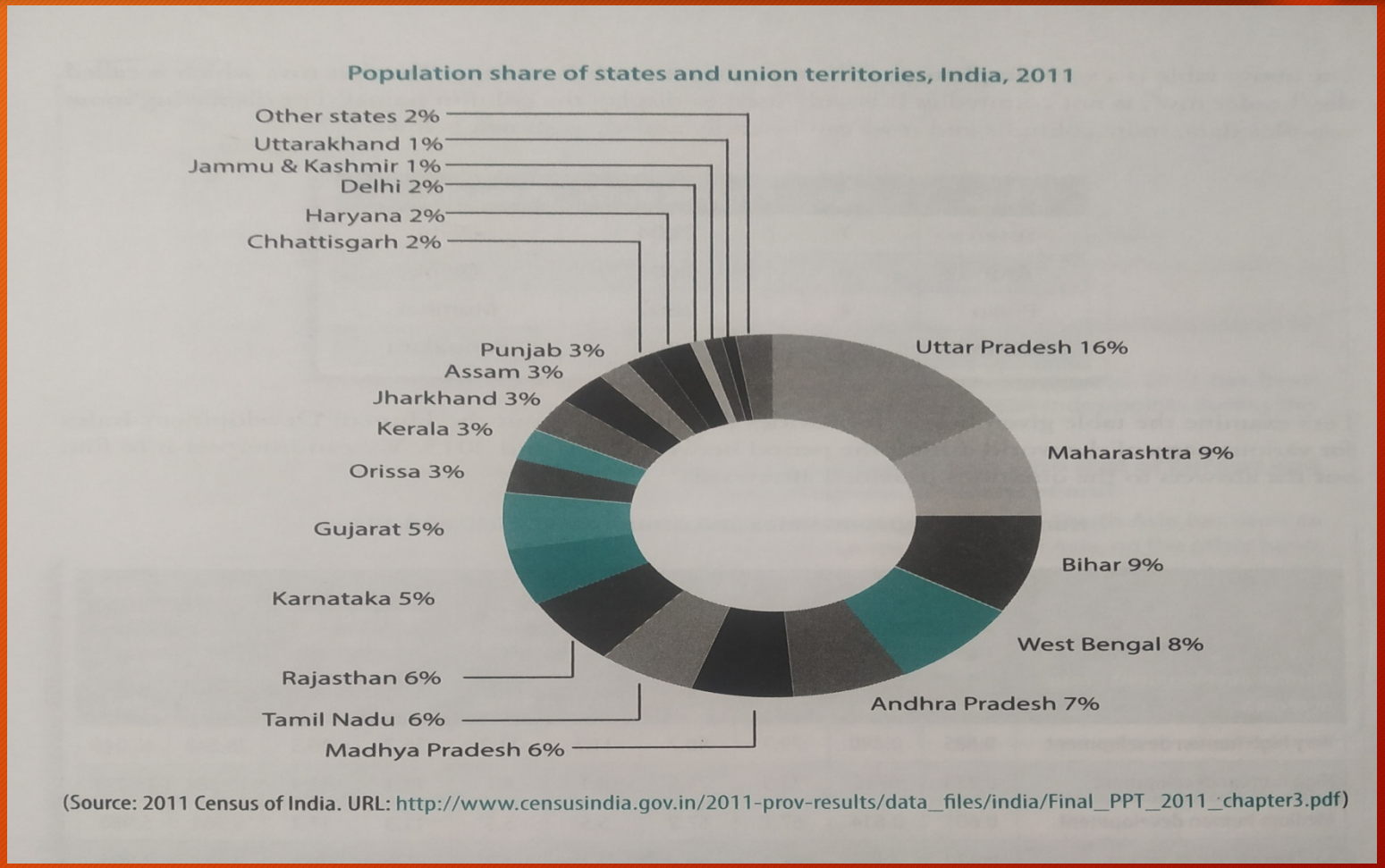
This graphic uses a pie chart to visually represent the data. A pie chart is useful because it can visually represent the proportion of each type of data when compared to the whole. It is called a pie chart because it resembles a pie that has been cut into pieces. The graphic above uses a particular type of pie chart called a doughnut chart where the central portion of the graphic has been left blank.

On each 'slice' of the chart, the numerical percentage it represents has been printed. For instance, the 'slice' in the light blue colour represents India, which is 32.9% of the whole. Below the chart, a key or legend is given which links each colour in the chart to a particular country.

On reading this graphic, you will notice that almost one-third of the poorest people in the world live in India. China, despite its economic progress, is home to the second largest population of poor people. The three Asian countries represented on the graphic (India, China and Bangladesh) together account for more than half (51%) of the world's poor people. Another fact illustrated by the graphic is that although populous countries like India and China have large populations of poor people, it is often the less populous countries, like Nigeria and Congo, which account for a disproportionately large percentage of the global poor.

Pie Chart – Exercise

Population share of states and Union Territories, India ,2011.



(Source: 2011 Census of India. URL: http://www.censusindia.gov.in/2011-prov-results/data_files/india/Final_PPT_2011_chapter3.pdf)

Table - Exercise

Human Development Index and components, 2010 and 2013

Human development group or region	Human Development Index value		Life expectancy at birth (years)		Mean years of schooling (years)		Expected years of schooling (years)		Gross national income per capita (2011 PPP $)	
	2010	2013	2010	2013	2010	2013	2010	2013	2010	2013
Very high human development	0.885	0.890	79.7	80.2	11.7	11.7	16.2	16.3	38,548	40,046
High human development	0.723	0735	73.9	74.5	8.1	8.1	13.1	13.4	11.584	13,231
Medium human development	0.601	0.614	67.1	67.9	5.5	5.5	11.3	11.7	5,368	5,960
Low human development	0.479	0.493	58.2	59.4	4.1	4.2	8.7	9.0	2,631	2,904
Arab States	0.675	0.682	69.7	70.2	6.2	6.3	11.7	11.8	15,281	15,817
East Asia and the Pacific	0.688	00.703	73.5	74.0	7.4	7.4	12.3	12.5	8,628	10,499
Europe and Central Asia	0.726	0.738	70.7	71.3	9.6	9.7	13.3	13.6	11,280	12,415
Latin America and the Caribbean	0.734	0.740	74.2	74.9	7.9	7.9	13.8	13.7	12,926	13,767
South Asia	0.573	0.588	66.4	67.2	4.7	4.7	10.6	11.2	4,732	5,195
Sub-Saharan Africa	0.468	0.502	55.2	56.8	4.8	4.8	9.4	9.7	2, 935	3,152
World	0.693	0.702	70.3	70.8	7.7	7.7	11.9	12.2	12,808	13,723

PPP is purchase power parity

Source: Human Decelopment Report Office calculations.

(Source: Human Development Report, 2014)

Table - Answer

- **Which part of the world has the highest life expectancy at birth?**

  The data given under the second column of the table indicates that Latin America and the Caribbean region possess the highest life expectancy at birth during the period between 2010 and 2013. During this interval, the life expectancy at birth for this region increased marginally from 74.2 to 74.9 years.

- **On an average, how many years of schooling does a child from South Asia get?**

  The third column of the table shows that a child from South Asia gets about 4.7 years of schooling on average. This figure is the lowest for any region represented in the graph.

- **Which part of the world shows the greatest increase in human development between 2010 and 2013?**

  The greatest gain in the Human Development Index score between 2010 and 2013 has been attained by Sub-Saharan Africa. This region has seen an increase of 0.034 index points during this time.

- **Compare the Human Development Index value of South Asia with that of Europe and Central Asia. Which region has shown more progress in recent years?**

  The table indicates that during the time period between 2010 and 2013, South Asia has seen an increase of 0.015 index points in human development. Europe and Central Asia, on the other hand, has seen an increase of 0.012 index points. Hence, it can be deduced that South Asia has shown more progress than Europe and Central Asia between 2010 and 2013.

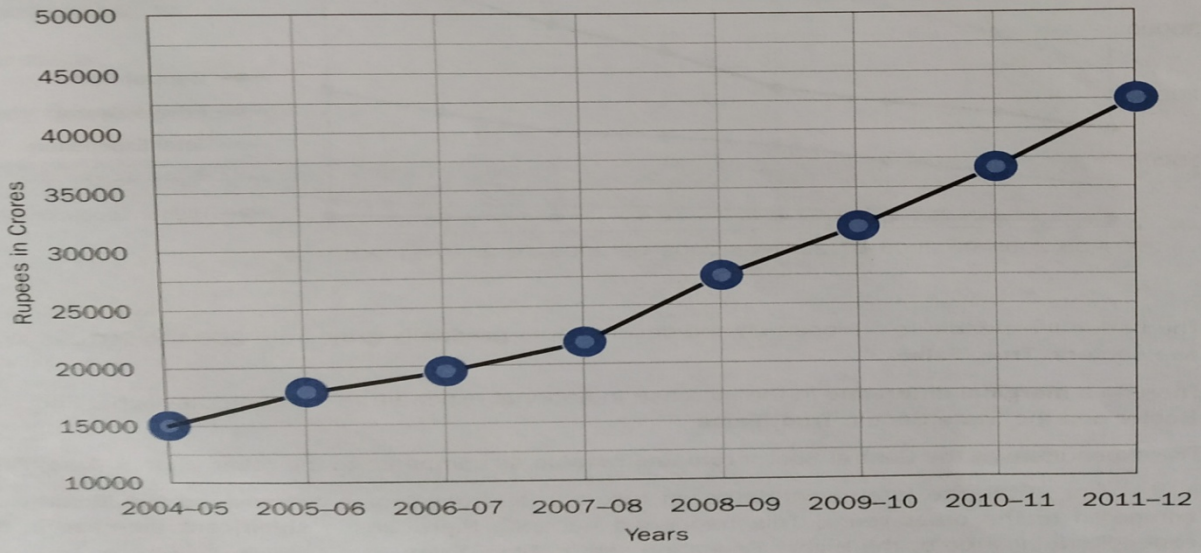
- **Which region has the lowest life expectancy at birth?**

  The second column of the table shows Sub-Saharan Africa to have the lowest life expectancy at birth during 2010 to 2013. During this time period, the life expectancy at birth for this region increased only by 1.4 years.

Graph 1

This graph shows the increase in expenditure of the central government on research and development from 2004–2005 to 2011–2012. Study the graph carefully. Fill the gaps in the paragraph using suitable words and phrases from the box.

National Expenditure on Research and Development in the Central Sector



Graph 1- Exercise and Answer

significant increase	sharply increased	similar trend
a sharp increase	a steady increase	the most significant increase

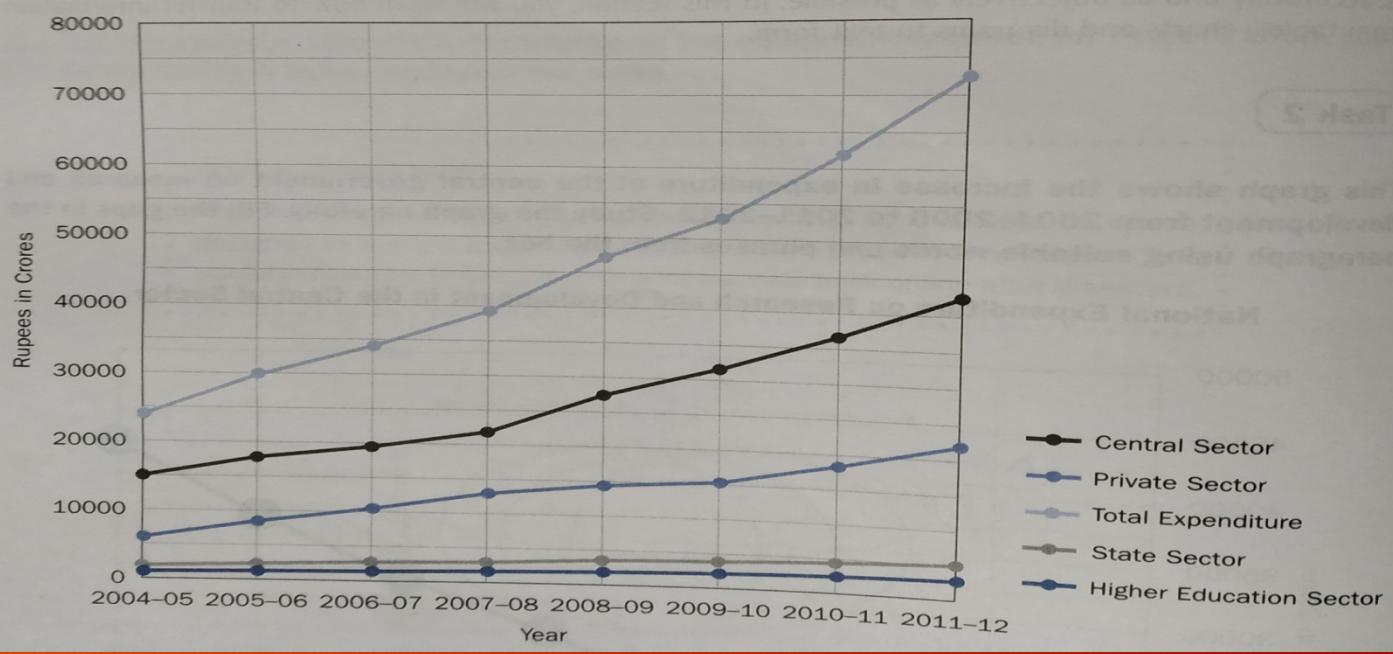
From 2004–2008, there was (1) _____ in the expenditure by about 2000 crores every year. Therefore, the expenditure increased from 15,000 crores in 2004 to 21,000 crores in 2008. However, in 2009, there was (2) _____ in the expenditure to about 27,000 crores. A (3) _____ can also be observed in the year 2012, when the expenditure again (4) _____ by 6000 crores.

To sum up, it can be seen from the graph that with every passing year, there is a (5) _____ in the expenditure on research and development in the central sector, (6) _____ being in the years 2009 and 2012.

Graph 2

Task 3

This graph shows the sector-wise expenditure incurred on research and development in education. Study the graph and say whether the following statements are true or false.



Graph 2 Answer

1. The national expenditure on research and development **gradually grew** from 2004 to 2012 in all the five sectors. **True/False**
2. There is a **marginal difference** in the increase in national expenditure between the Higher Education Sector and the State Sector. **True/False**
3. The expenditure by the Central Sector **remained stable** as compared to the other sectors. **True/False**
4. In the year 2008, the total expenditure on research and development **increased significantly**, as compared to the other years. This happened because there was a **significant increase** in the expenditure incurred by the Higher Education sector. **True/False**
5. The total expenditure on research and development by all the sectors **steadily increased** from about 24,000 crores in 2004, to around 75,000 crores in 2012. **True/False**

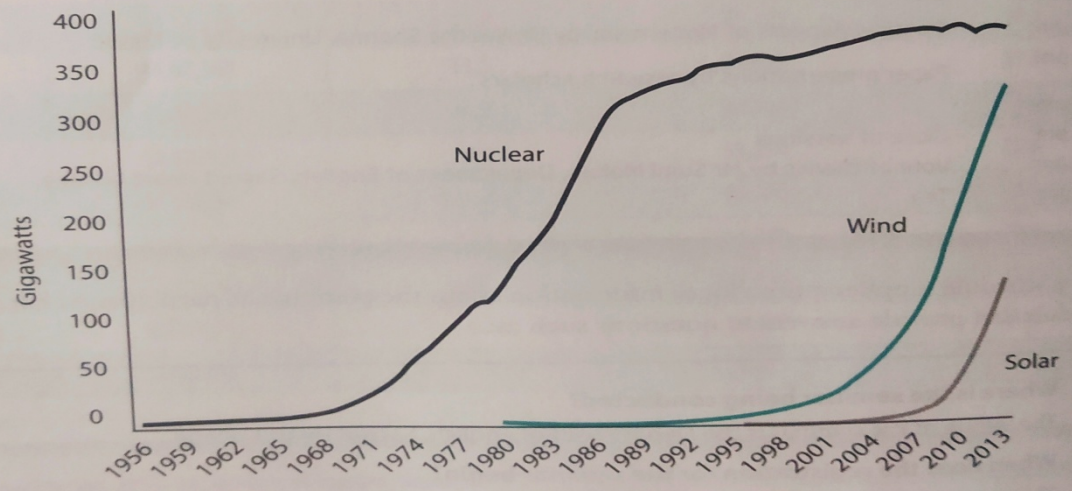
Graph -3

A graph is a diagrammatic representation of the relation between two sets of information or variable quantities. Graphs are usually plotted along two axes, the horizontal 'X' axis and the vertical 'Y' axis.

Graphs are very effective in showing how trends change over time. They can also be used to compare how two or more trends have developed over time and whether there is any correlation between them.

In the graph below, the time period from 1956 to 2013 is plotted along the X-axis and power generated in gigawatts is plotted along the Y-axis.

World nuclear, wind, and solar generating capacity, 1956–2013



(Source: http://vitalsigns.worldwatch.org/vs-trend/wind-solar-generation-capacity-catching-nuclear-power)

Graph 3 - Answers

- **When does the growth of nuclear energy start to slow down?**

  The growth of nuclear energy is represented by the black line. It shows a steady increase from around 1968 up to 1986, when the growth slows down.

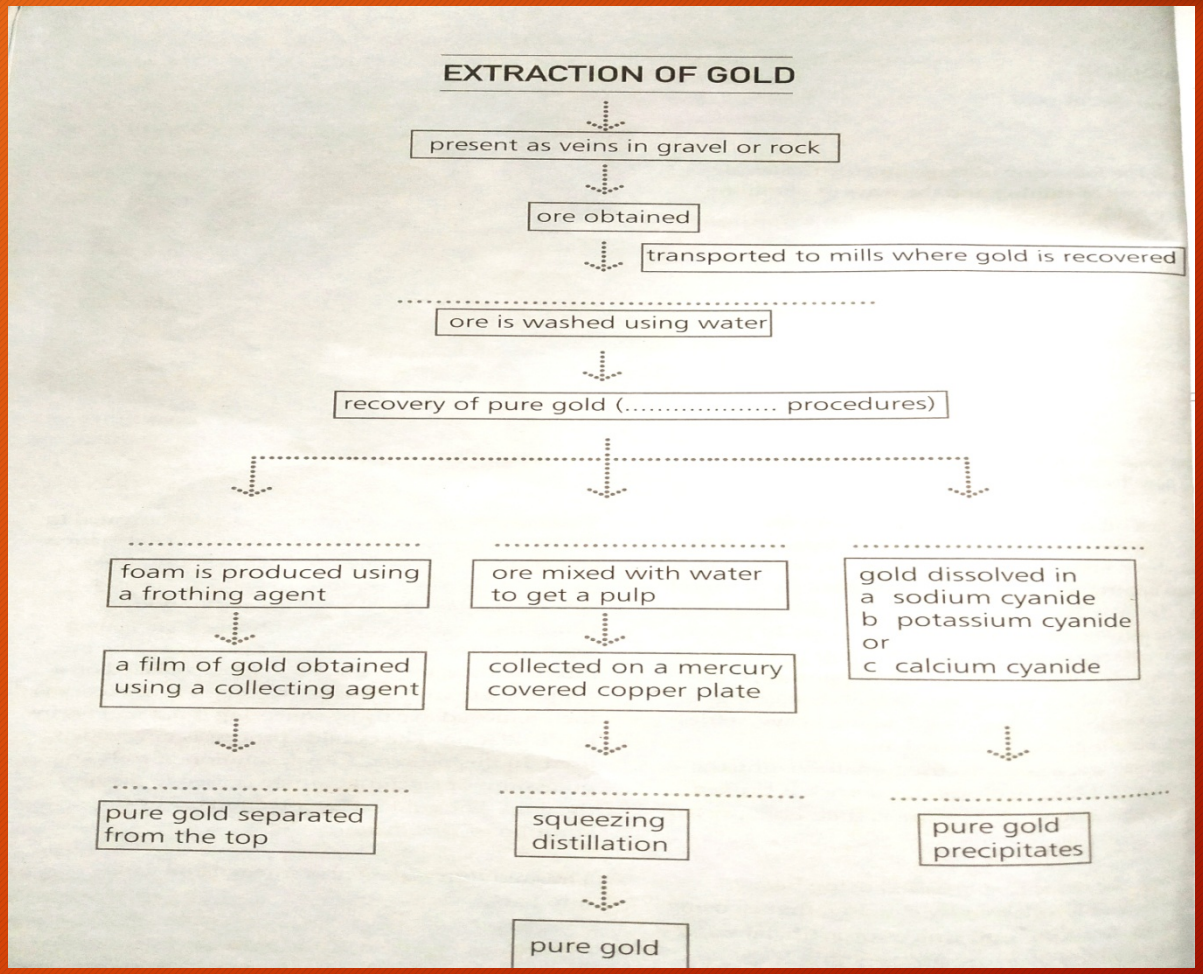
- **When does wind energy start to become popular?**

  The contribution of wind energy is represented by the line shown in cyan. It begins to pick up during the late 90s and shows rapid growth since the turn of the millennium.

- **Since when does the use of solar energy show marked growth?**

  Solar energy is represented by the ash-coloured line in the graph. It shows a marked increase after 2010.

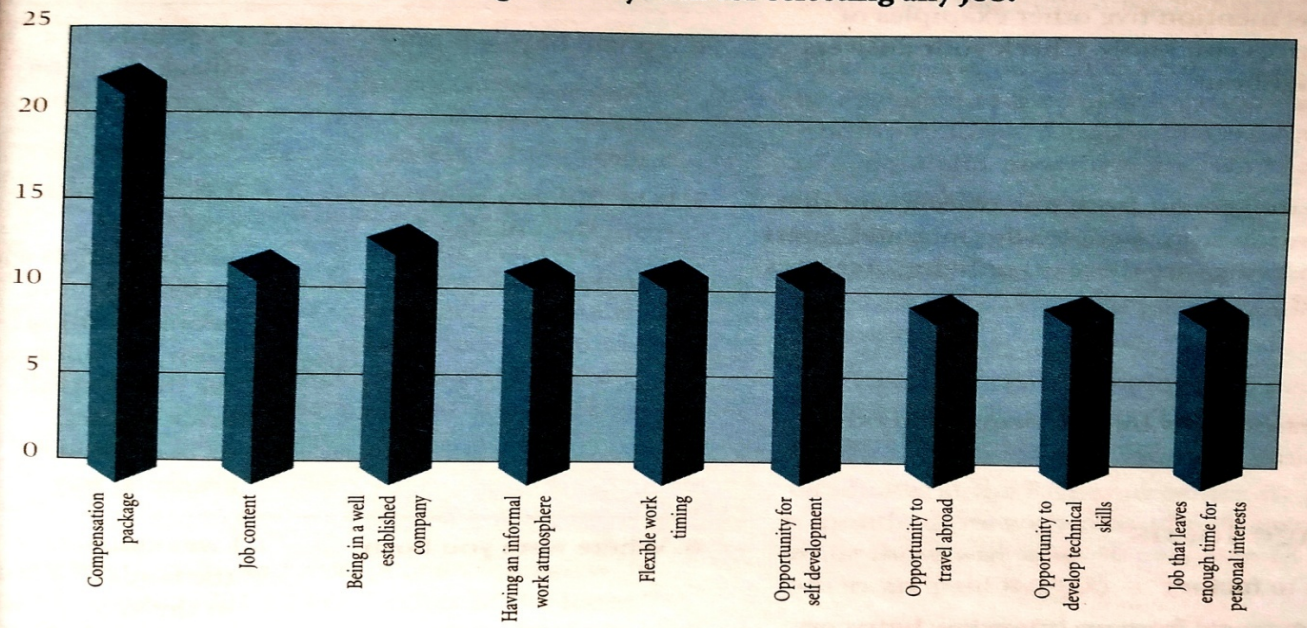
Flow Chart


EXTRACTION OF GOLD
present as veins in gravel or rock
ore obtained
transported to mills where gold is recovered
ore is washed using water
recovery of pure gold (..... procedures)
foam is produced using a frothing agent
ore mixed with water to get a pulp
gold dissolved in a sodium cyanide b potassium cyanide or c calcium cyanide
a film of gold obtained using a collecting agent
collected on a mercury covered copper plate
pure gold separated from the top
squeezing distillation
pure gold precipitates
pure gold

Bar Chart – Exercise 1

Look at the bar charts given below and explain them.

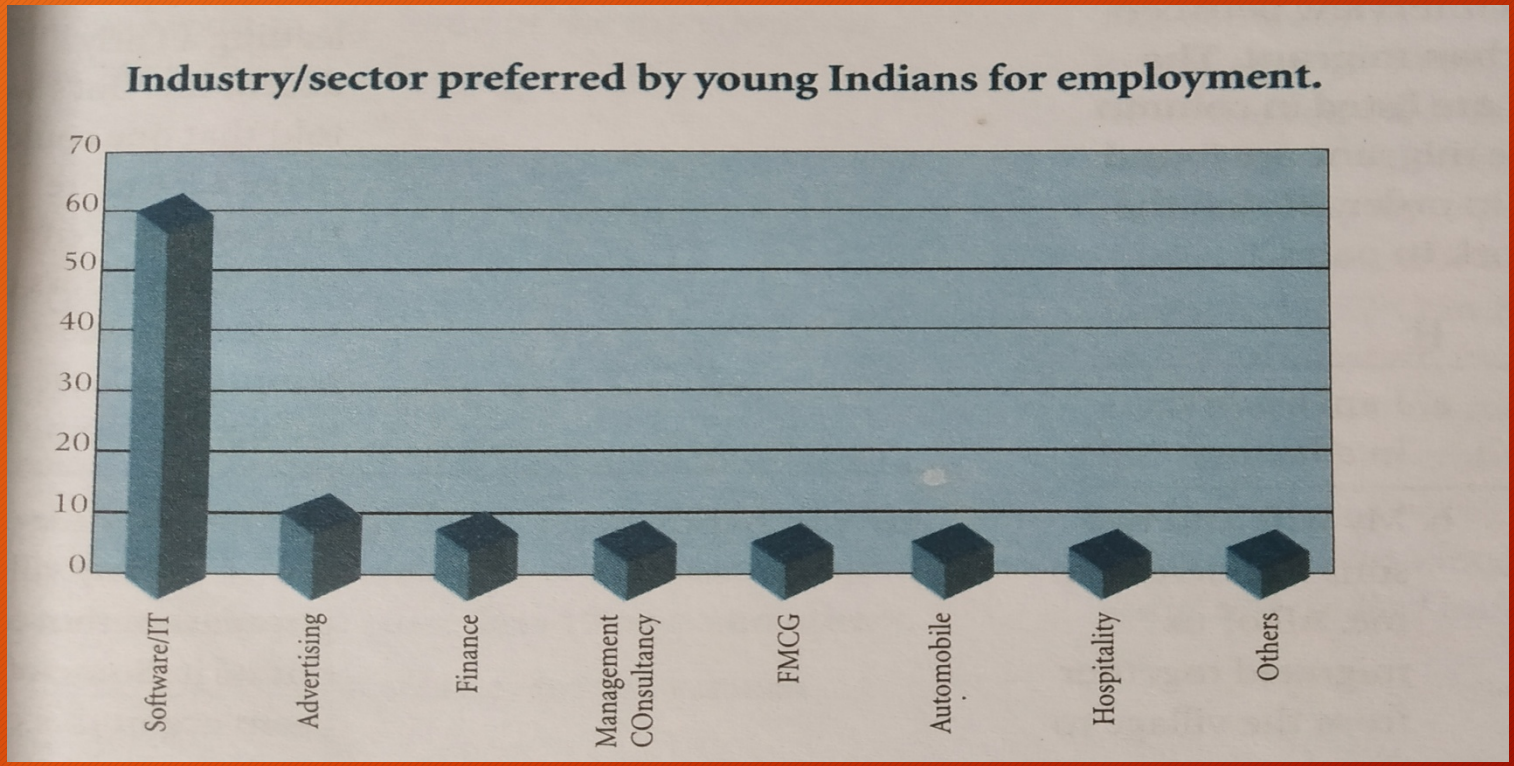
Critical choice factors among Indian youth for selecting any job.



Industry/sector preferred by young Indians for employment.

70

Bar Chart Exercise - 2



Thank You