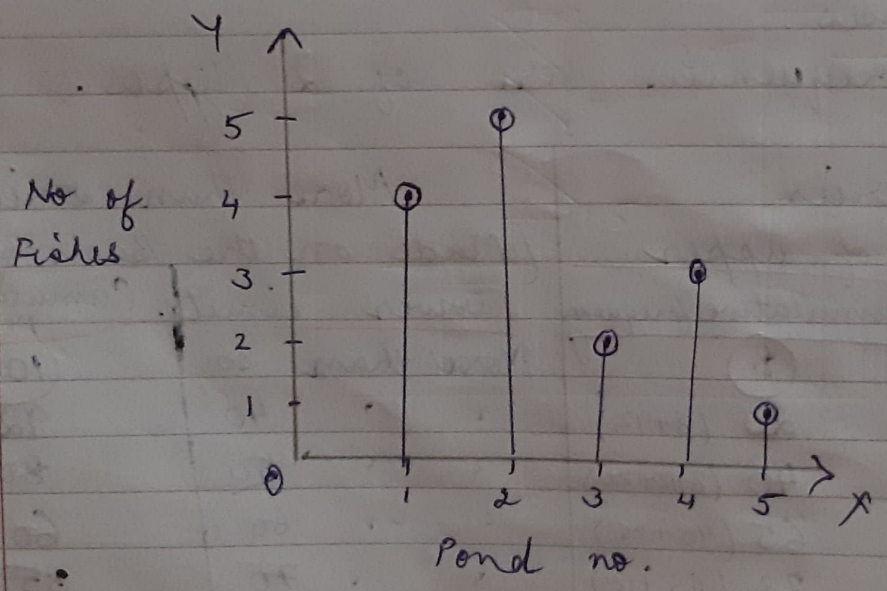
# Diagramatic Representation of Data.

1. Line diagram
2. Bar diagram
3. Pie diagram
4. Pictogram.



**1) Line diagrams :-** simple mathematical graphs that can be drawn on plain paper or graph paper by plotting the data against the x & y axis.

| ~~No of~~ Ponds | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| No of fishes | 4 | 5 | 2 | 3 | 1 |

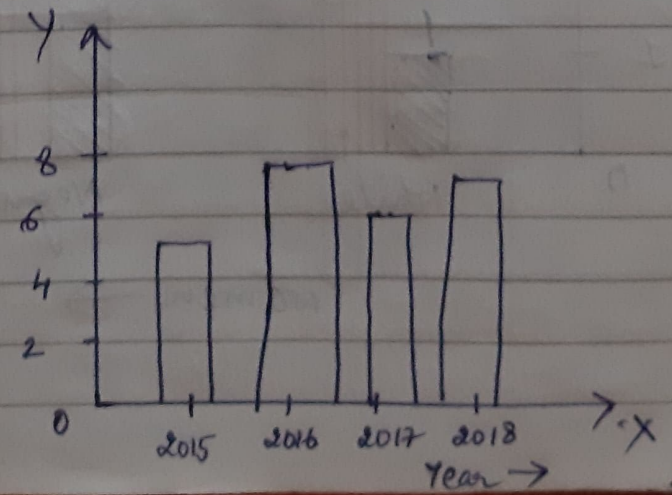


The lines are not joined with each other as they are not dependent on one another.

2.) **Bar diagram** :— Data are represented in the form of Bars. The Bars are of uniform width & the length is proportional to the value it represents. The Bars can be drawn vertically or horizontally. It is useful in comparing qualitative or quantitative data.
There are 4 types of Bar diagram :—

2.1.) **Simple Bar diagram** :— used to compare 2 items related to each other.
Length of the Bar is determined by the value of the variable. It has 1 drawback that only 1 variable can be represented on it.

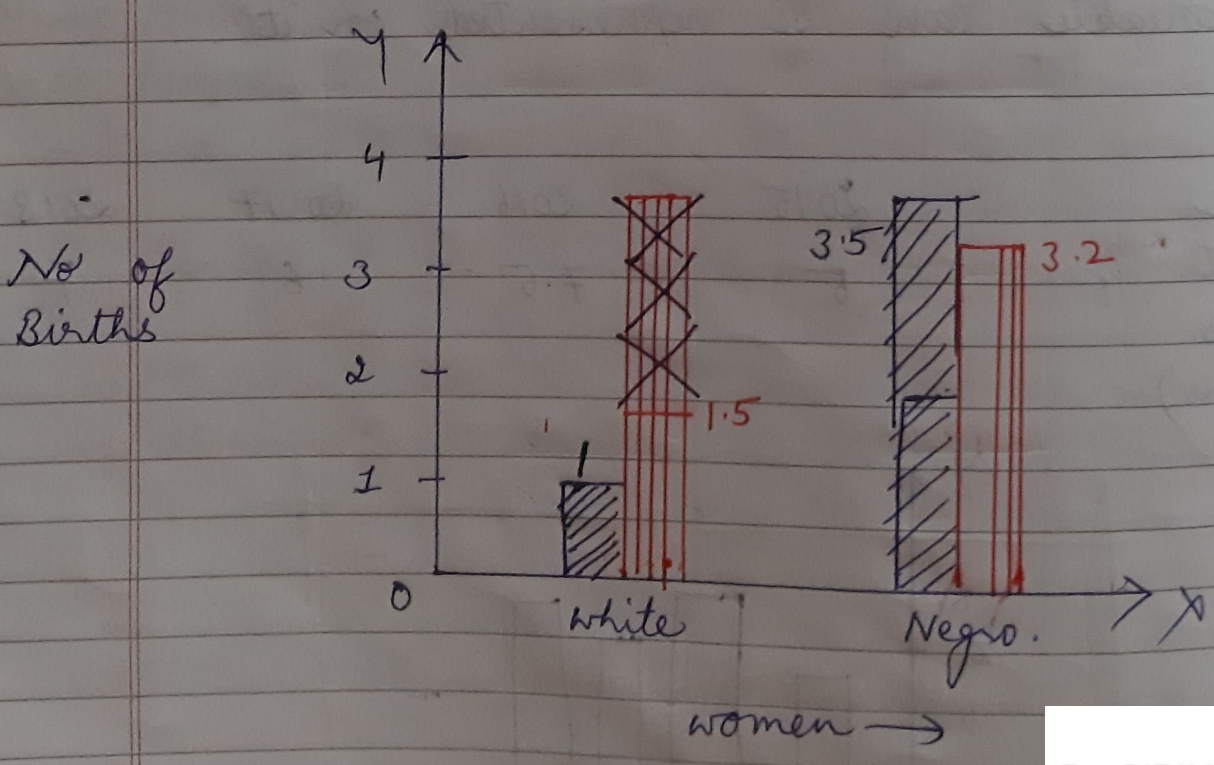
| Year | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|
| Production of Fishes (in tons) | 5 | 7.5 | 6 | 7 |




Production of Fishes (in tons)

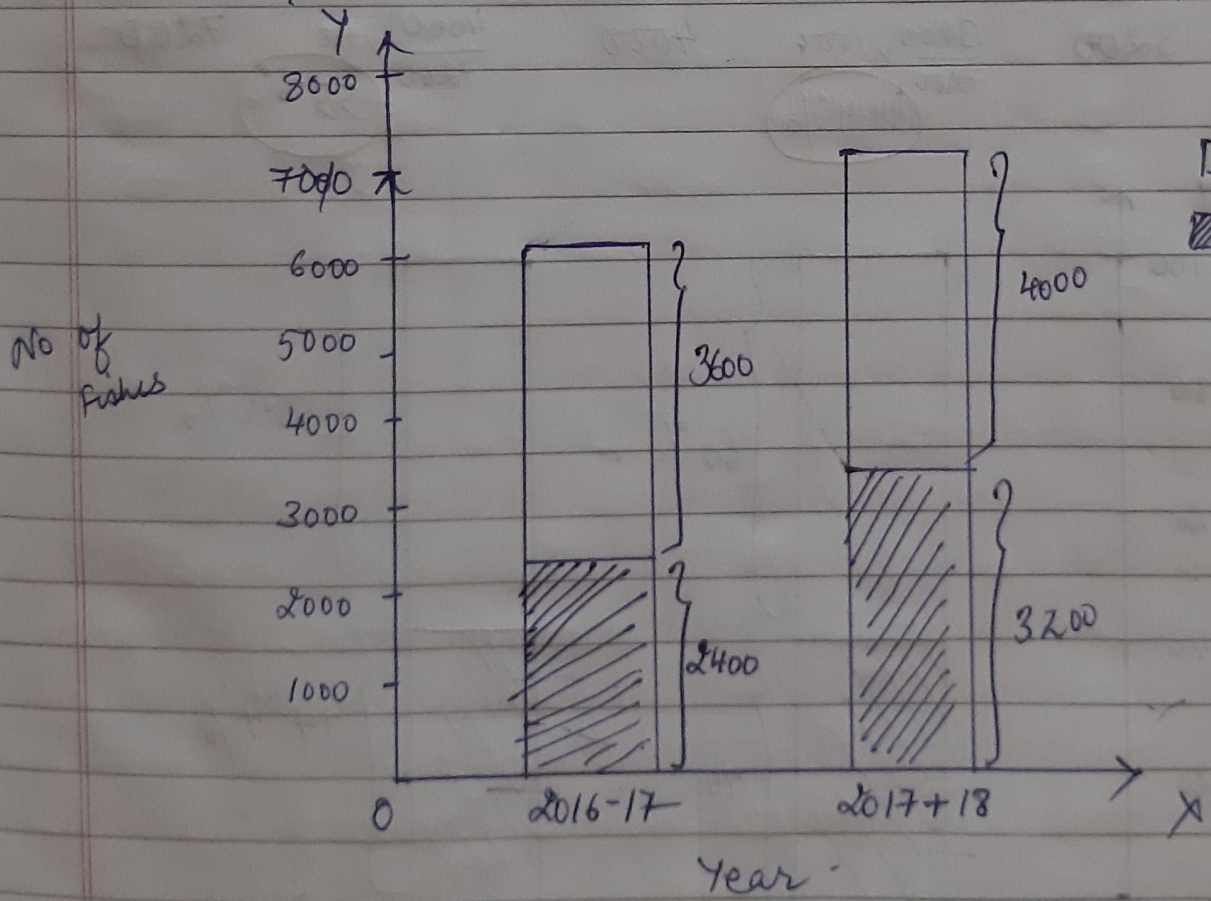
2) **Multiple Bar Diagram** :- used when a no of items are to be compared in 2, 3 or more variables.
Diff shades or colours are used for each category.

| No of Births / women | Male Births (in thousand) | Female Births (in thousands) |
|---|---|---|
| white | 1 | 1.8 |
| Negro. | 3.5 | 3.2 |



2.3. **Sub divided / Component Bar diagram :-** Formed by dividing a single Bar into several component parts. The Bar represents the total value whereas each component part represents " component value. This type of graph is formed by dividing a single Bar into several component parts with the help of diff colours or design.

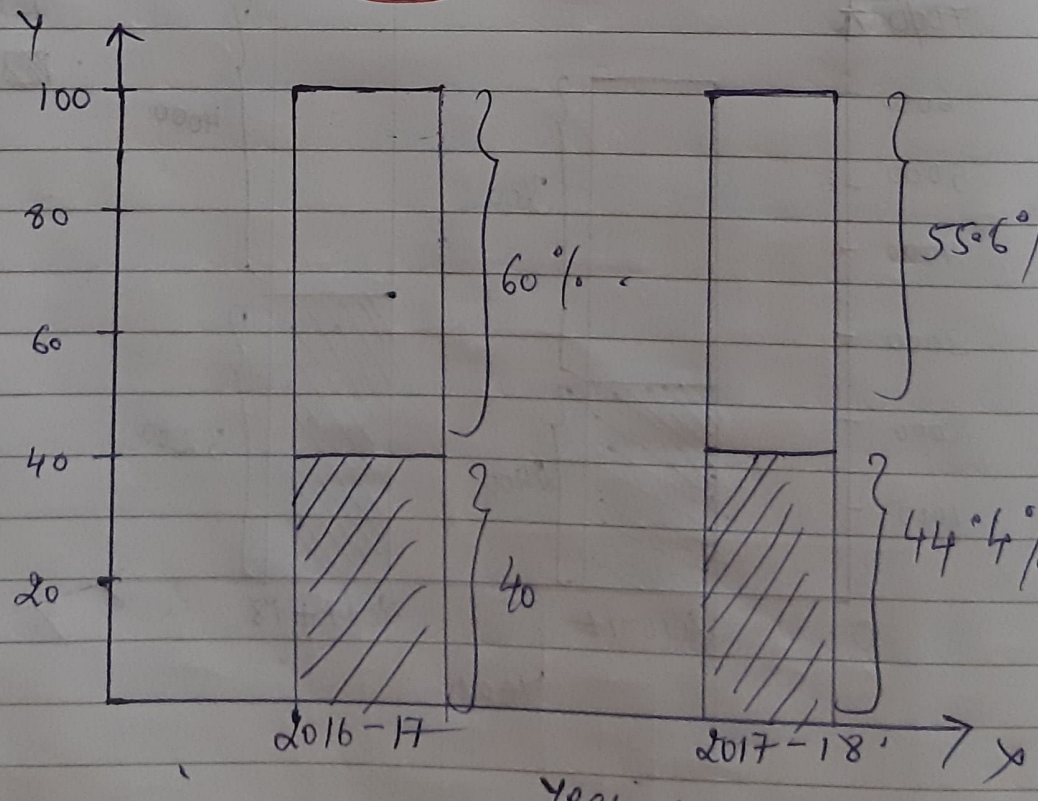
| Year | Fresh water | Marine water | Total. |
|---|---|---|---|
| 2016-17 | 2400 | 3600 | 6000 |
| 2017-18. | 3200 | 4000 | 7200 |



It shows the relationship among diff parts & also between diff parts & the main Bar.

2.4) % Subdivided Bar diagram :- It is similar to subdivided Bar diagram with only 1 difference that the quantities are represented & expressed as % values. Each of the main Bar totals to 100%.

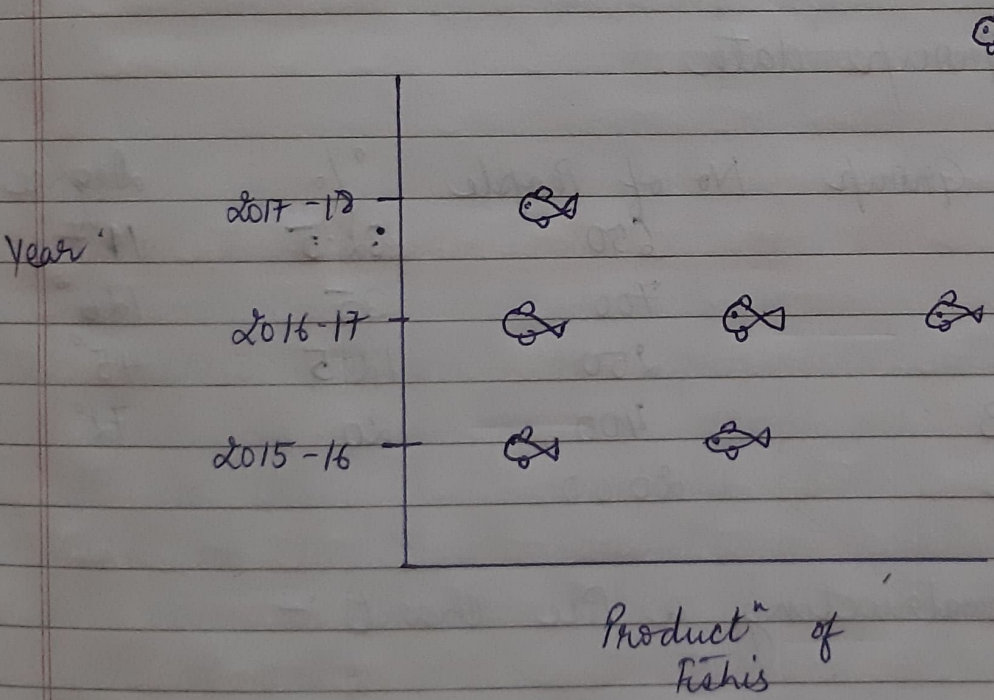
| Year | Fresh water | % | Marine water | % | Total |
|---|---|---|---|---|---|
| 2016-17 | 2400 | 40% <br> $\frac{2400}{6000} \times 1000$ | 3600 | $\frac{3600}{6000} \times 1000$ <br> 60% | 6000 |
| 2017-18 | 3200 | $\frac{3200}{7200} \times 1000$ <br> 44.4% | 4000 | $\frac{4000}{7200} \times 100$ <br> 55.6% | 7200 |



3. **Pictogram :—** It represents the statistical data in the form of pictures. Here a no of pictures of same size & equal in value are drawn each picture represents a no of unit.

Eg. Production of Fishes (in tons)

| Year | 2015-16 | 2016-17 | 2017-18. |
|---|---|---|---|
| Product$^n$ | 20 | 30 | 10. |



4° Pie chart :- (Circle graph) / (Pie diagram).

A Pie chart is a circular diagram or graph which represents the total value with it's components. The area of the circle is ~~divided~~ represents the total value & diff sectors of the circle represent the diff parts.
The circle is divided into sectors by radii & the areas of the sector are proportional to the angles at the centre. In a pie chart the data is expressed in the form of %.

Eg. Blood Group data.

| Blood Group | No of People | % | Degree. |
|---|---|---|---|
| A | 650 | 32.5 | 117° |
| B | 700 | 35 | 126° |
| O | 250 | 12.5 | 45° |
| AB | 400. | 20. | 72° |
| Total | 2000 | | |

Methods of Constructing a Pie chart :-

1°) Draw a circle of appropriate size using compass. & Convert the given values into %

2°) Convert each % value to the degree of the circle

3°) with the help of Protractor (D) measure & draw the angles.

$100\% = 360^\circ \quad \therefore \quad 1\% = \frac{360}{100}$

$$\boxed{1\% = 3.6^\circ}$$