Elements of Knitting
Knitting is the process of intermeshing of loops formed by a single source of yarn.
Elements of Knitting

Forming of kink (loop) on the yarn
Mutual interlooping of kinks/loops

Repeatedly kinks/loops of the yarn are pulled through similar element from another yarns.

- Disadvantage: easy destruction (symmetrical structure).
Elements of knitting

- **Wale**: Longitudinal series of loops
- **Course**: Transverse series of loops
- **Loop**: The basic knitted element
- **Needle**: The knitting element
- **Sinker**: The supporting element for knitting
- **Feeder**: The yarn feeding element
- **Cylinder/Dial**: The device to decide the needle movement
Basic elements

- **Kink** (loop) of yarn (**open, closed**).
- **Knitted stitch or loop** (**F** - face, **R** - reverse side).

![Diagram of basic elements]

- Open
- Closed
- Face
- Reverse
Groups of elements

- Course – Wales.
- a – Weft, b – warp knitted fabric.
Other basic elements:

a) Tuck stitch (two kinks are interlooped with one stitch) with only two crossing points

b) Float stitch (on back or reverse of the loop)

c) Face float stitch (on face of the loop)
The types of knitting needles:

a) By swing of the **latch 2** (Latch needle).

b) By pressing of long flexible **hook** (**Bearded** needle).

c) By independently controlled latch **3** (**Bi-partite/ Compound needle**)
Knitted structures

- Weft single jersey
- Rib
- Purl
- Weft double jersey: Interlock
- Warp single jersey
- Warp double jersey
Weft single jersey

Reverse Face

Relaxed
Direction of courses
wales

Curling
Deformation
Weft single jersey
(technical face)
Weft single jersey
(Technical back)
Rib structures

Topologically, it corresponds with plain fabric, there are longer sinker loops in positions of missing needles:

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VV VVV VVV
VV VVV VVV
VV VVV VVV
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Rib structure knitting
1X1 Rib
Purl structure

A double faced structure with change of directions (courses ↔ wales) – greater longitudinal deformability, appearance as plain fabric from reverse side.
Interlock structure
Weft knitting machines (Flat bed)
Weft knitting machines (Circular)
Warp knitting machines

Tricot machine – bearded needle
Raschel machine – double needle bar
Tricot machine – compound needle
Rachel knitting machines
Tricot knitting machines
Crochet knitting machines