

# Finger prints Galton's system;Dactylography;Dermatoglyphics

## DACTYLOGRAPHY

Dactylos:finger Graphy:write

Design produced by ball of fingers: eidermal  
ridges[friction ridges] that is raised portion of the  
epidermis

- The most important , accurate and unfailing method
- Better than DNA profiling
- Not inherited

# Absolute identification

- Pattern is absolutely individual
- Chances of matching sixteen characteristics in two individual are infinitely small

# Why specific?

- Chances of matching almost rare: absolutely individual
- Since birth
- In epidermis and dermis
- Unchanged

# advantages

- Applicable to all ages
- Decomposed body
- Drowning
- Burns
- Absolute
- No special training
- No expense
- Easy classification
- Record available
- storage
- Transmitted as coded or digitalised message
- Computerised automated fingerprint identification system [AFIS]

# types

- Core: A ridge recurving on itself
- Delta: convergence of ridges from three direction



- Neither core or delta- an arch 7%



# Plain or Tented arches 7%



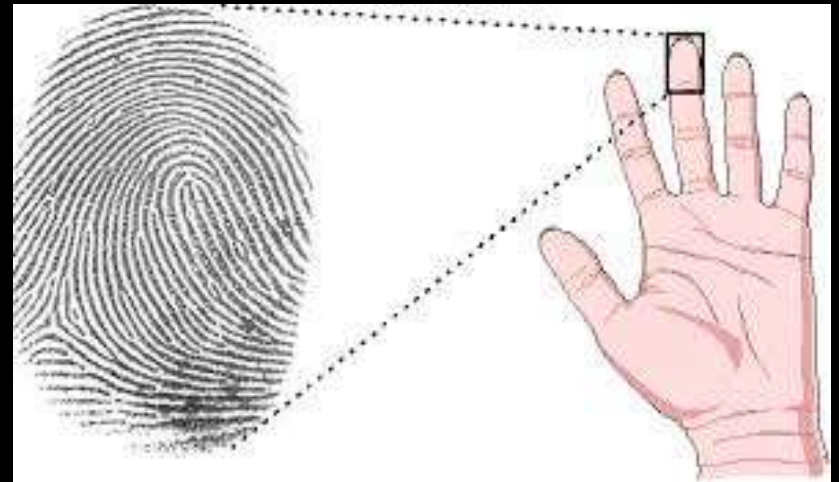
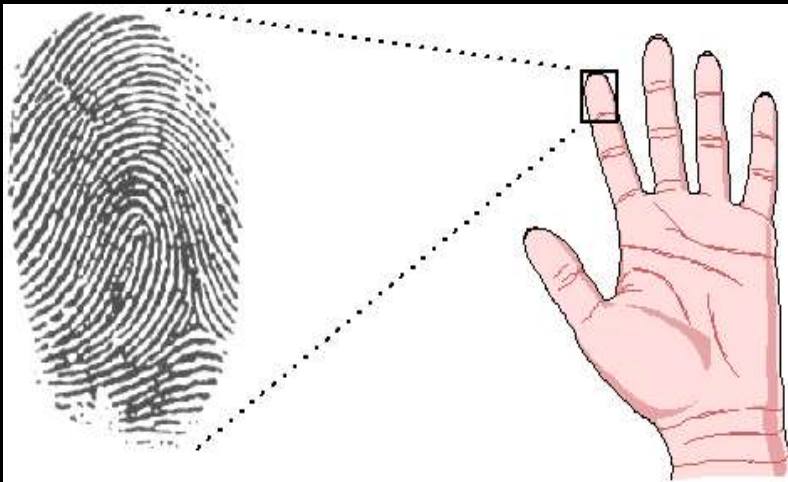


- 1 core and  
1 delta → loop 67%



# Radial loop and Ulnar loop

- From radial side to back radial side
- From ulnar side to back ulnar side



# Whorls

Whorls have at least one ridge that makes (or tends to make) a complete circuit. They also have at least two deltas.

## Types

- Plain whorls
- Central pocket whorls

- 1/1+core and  
2/2+ delta: → whorl  
25%



- Composites  
...mixed pattern 1 %

Love **W**ife **A**nd **C**hildren: from most common to least common **L**oop **W**horl  
Arch **C**omposite

# Latent print

- Due to oils and perspiration
- Not visible or barely visible
- Most common and poses the most problems
- Need to be developed

# Plastic: 3 dimensional known as indented or molded prints

- On malleable, soft & sticky



# Patent prints

## known as contaminated prints

- Positive: by contaminated fingerprints
- Negative: finger print ridges remove surface



[dreamstime.com](http://dreamstime.com)



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<https://in.pcmag.com/smartphones/107082/apple-patents-method-to-catch-phone-thiefs-fingerprints>

# Methods

- Plain: press finger pad → more clear but less area
- Rolled: move from one side to another side → less clear but more area
- Take both

# Study : ACE-V

- Analysis
- Comparison
- Evaluation
- Verification

# Lifting of finger prints

- If on wall like immovable part
- Stick cello tap
- Then lift
- Mirror image is used

# Development of FP

- Hard and non absorbent
  - Grey powder
  - Black powder
- Soft and absorbent
  - Iodine vapour
  - Silver nitrate
  - Ninhydrin

# Basic and composite ridge characteristics (minutiae)

Minutiae

Example

Minutiae

Example

ridge ending



bridge



bifurcation



double bifurcation



dot



trifurcation



island (short ridge)



opposed bifurcations



lake (enclosure)



ridge crossing



hook (spur)



opposed bifurcation/ridge ending

