Review: 1. Buffon ‘s Needle

Reporter: Georgia - Komarovi

Opponent: Bulgaria - Sophia

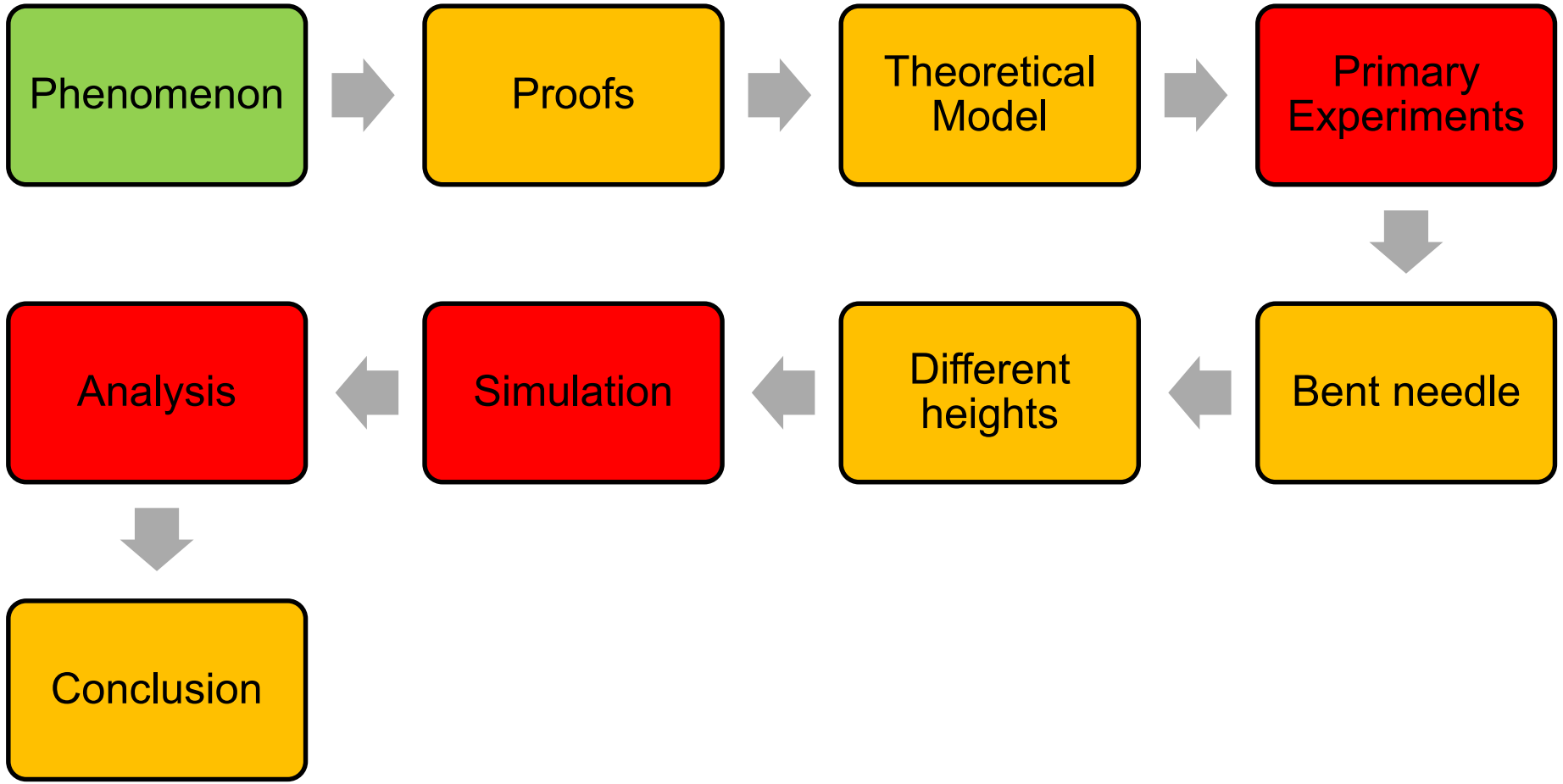
Reviewer: Team Switzerland

Problem

Draw a series of parallel equally spaced lines on a horizontal surface. Pick a bunch of sticks (e.g.matches or needles) slightly shorter or longer than the separation between the lines, and randomly drop them on the surface. It is claimed that the number of times the sticks cross the lines allows estimating the constant π to a high precision. What accuracy can you achieve?

Task partially fulfilled

Outline of Report



Strengths and Weaknesses Reporter

Strengths

- Used bent needles
- Simulation
- Compared mulptiple drops to single drops

Weaknesses

- Best ratio 1 to 1
- Low amount of drops
- Got exactly pi
- No explanation of simulation
- Proofs not explained well
- No definition of randomness
- No mention of the law of large numbers
- No proof of randomness

Strengths and Weaknesses Opponent

Strengths

- Critizised the lack of randomness
- Optimal ratio
- Critisized low number of throws

Weaknesses

- Ideal probability is 1/2
- Missed the large error
- Idea to test randomness
- Didn’t point out that she claimed to get exactly pi

Discussion Topics

- Determining Randomness
- Drop mechanism
- Height of drop
- Difference between needles and matches
- Width of needles
- Amount of drops

Thank you for listening