

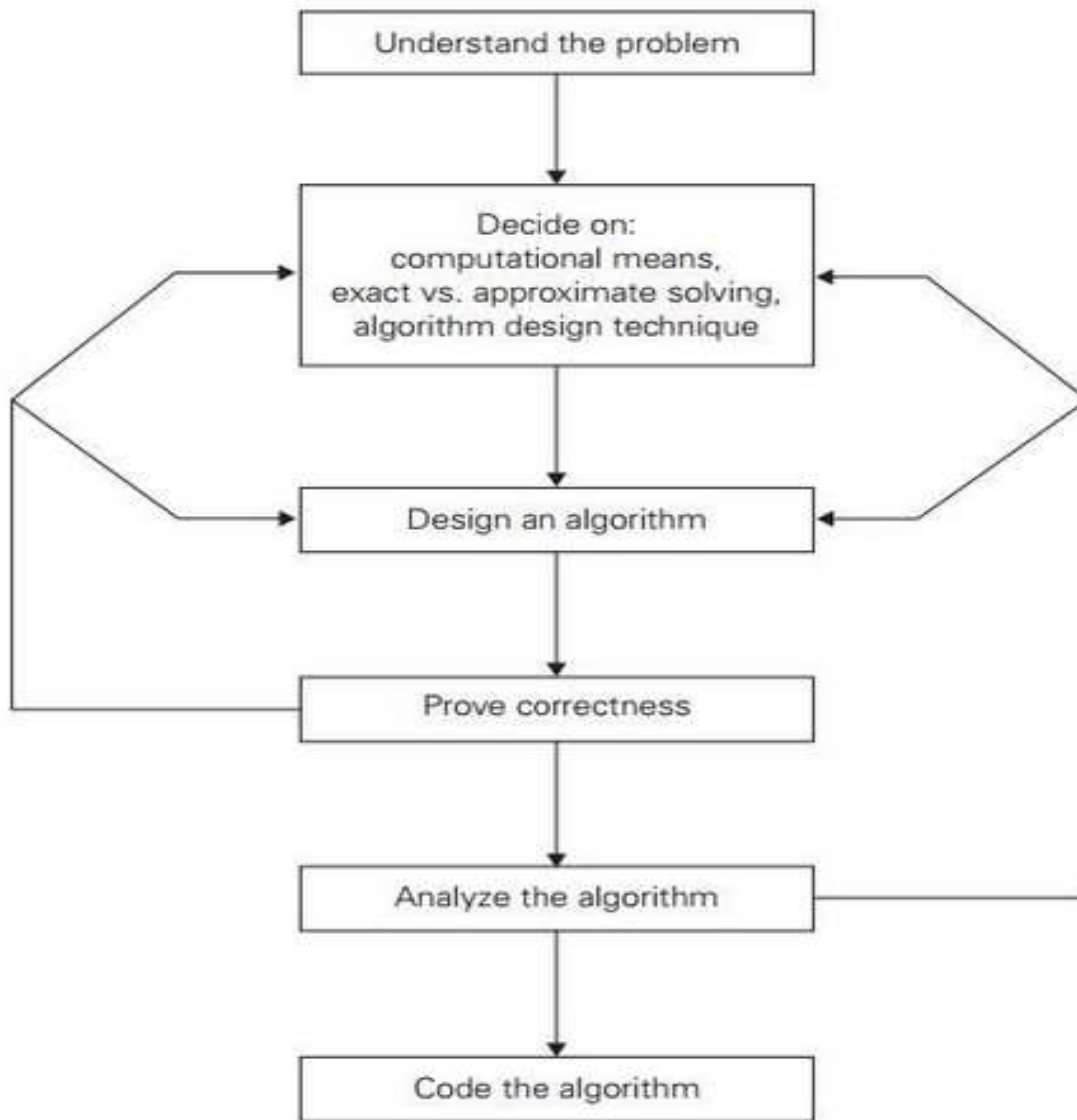


# SNS College of Engineering Coimbatore - 641107



## Fundamentals of Algorithmic Problem Solving

AP/IT



**FIGURE 1.2** Algorithm design and analysis process.



# Understanding the Problem



- What are problem objects?
- What are operations to the objects?



# Decide on Computation



- How object would be represented?
- How operation would be implemented?



# Design an algorithm



- Build computational model of solution process



# Prove Correctness



Correct output of every legitimate

- ✓ Input in finite time
- Based on correct math formula
- By induction method
- ✓ Tracing can prove correctness



# Analyze the Algorithm



- Efficiency-time and space
- Simplicity-clear and sequence
- Generality-range of input
- Optimality-optimal algorithm



# Code the algorithm



- How objects and operations in algorithm are represented in chosen programming language?
- Can every problem be solved by algorithm?





# Assessment



- 1) What are the three properties of algorithm?
- 2) Enlist the procedure of algorithm?
- 3) Draw Framework



# Solution



1)

- Correctness
- Termination
- Efficiency

2)

- Finite
- Complete
- Unique
- Effective