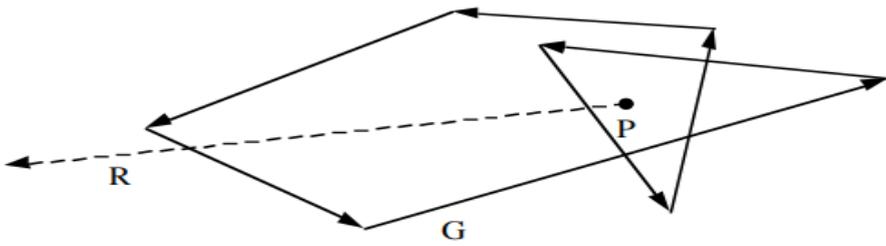
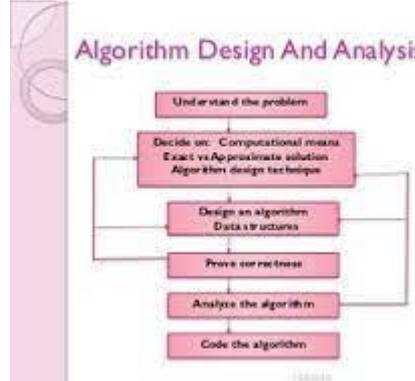
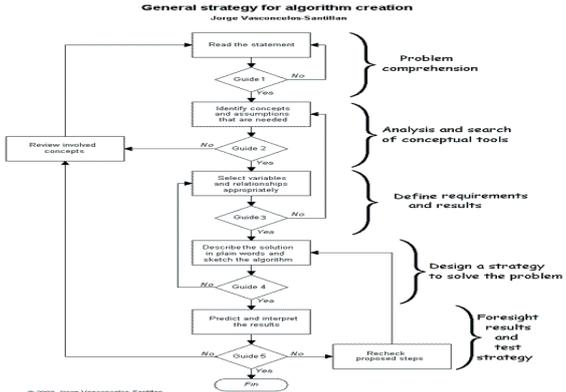




Innovations in Teaching Learning Processes

Department of Computer Engineering

Name of Method:	Problem Based Learning
Description:-	Problem based learning process in which problem is formulated, mathematical model is developed or selected and suitable computational/numerical method is implemented to solve the problem. Solution obtained from developed programming logic is testing or validated by suitable means..
Implemented For:-	AY 2020-21
Subject :-	Design & Analysis of Algorithms (TE –II)
Problem Statement :-	<p>Consider an arbitrary (not necessarily simple) polygon G (Fig. 24.18). Provide an interpretation for the winding number $w(G, P)$ of G around an arbitrary point P not on G, and prove that $w(G, P) / 2 \cdot \pi$ of P is always equal to the crossing number of P with respect to any ray R emanating from P</p>  <p style="text-align: center;">Figure 24.18: Winding number and crossing number of a polygon G with respect to P.</p>
Solution :-	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">  <p style="text-align: center;">Algorithm Design And Analysis Process</p> <pre> graph TD A[Understand the problem] --> B[Decide on: Computational means Exact vs Approximate solution Algorithm design technique] B --> C[Design an algorithm Data structures] C --> D[Prove correctness] D --> E[Analyse the algorithm] E --> F[Code the algorithm] </pre> </div> <div style="width: 50%;"> <p style="text-align: center;">General strategy for algorithm creation Jorge Vasconcelos-Santillan</p>  <p style="text-align: center;">© 2003 Jorge Vasconcelos-Santillan</p> </div> </div>
Outcome :-	<p>Following are the outcomes that make 'Problem Based Learning 'be more effective that traditional learning</p> <ol style="list-style-type: none"> 1. Increase Engagement. 2. Enhance problem solving skills. 3. Improve logical thinking. 4. Improve Interactions with the students.

AAD