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 :-

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·π of P is always equal to the crossing number of P with respect to any ray R emanating from P

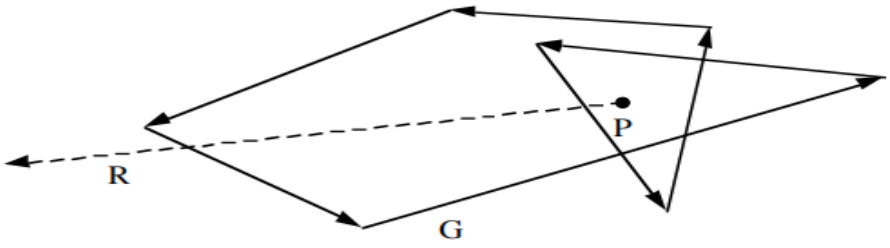
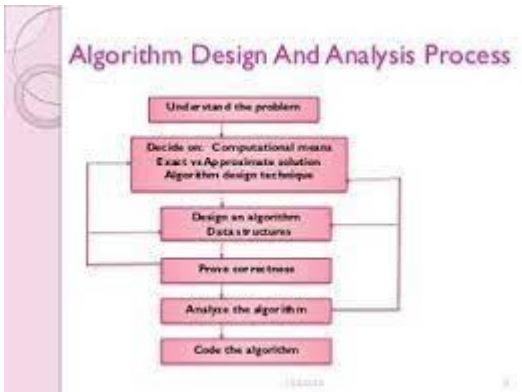
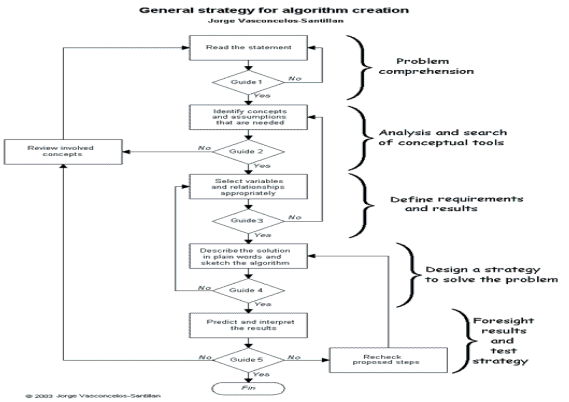


Figure 24.18: Winding number and crossing number of a polygon G with respect to P.

Solution :-





Outcome :- Following are the outcomes that make 'Problem Based Learning 'be more effective that traditional learning

1. **Increase Engagement.**
2. **Enhance problem solving skills.**
3. **Improve logical thinking.**
4. **Improve Interactions with the students.**

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