1. What are the 3 main *type of notations* used in design documents? Explain why it is important to use different notations to describe software design.
2. A software engineering project consists of 6 main *design activities*. State and briefly describe the design activities. For each design activity, determine the design notations that are appropriate to be used.
3. Assuming that you are applying reverse engineering to develop design documents for your company’s legacy systems. Identify and describe 2 types of notations that can be used in documenting user interface design.
4. Differentiate between *cohesion* and *coupling* in system design. Discuss how each of them would affect the maintainability of a system.
5. Compare and contrast between *Coincidental Cohesion* and *Functional Cohesion*. Which one is better in a software design? Justify your answer.
6. Around The Globe (ATG) Sdn Bhd is a travelling agency that is owned by family Berth since 1960s. The company is using a high quality legacy system to manage the staff and customers’ information. However, the maintenance cost is increasing recently as a system requires Pascal experts. Seeing that this system has low business value to the company, Berth Junior (CEO of ATG) consults your company regarding the legacy system’s management strategy.

You have found that ATG legacy system design is highly cohesive and loosely coupled. However, the design is hard to understand as it is presented in informal text. What are the 2 other notations that should be used in a system design? Explain with appropriate example for each notation.

1. Standard Printing Company is established in 1981. The main business is designing and printing advertisement. The graphic designer is using a legacy system to design advertisement for customers. The design is stored as both PDF and DOC in the legacy system. The documentation of the legacy system is incomplete and the system is programmed in an obsoleting programming language. Recently, the company is considering purchasing Atlassian JIRA in assisting their advertisement project management. The owner of the company, Mr. S, is consulting you regarding the cost of the tool.

Suggest and explain to Mr.S 2 designs quality metrics that should be included in improving his legacy system.