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1. Consider an existing game of bridge written in Java. We are interested in integrating this bridge game into ARENA. Which design pattern would you use?

**I would use a Composite Design Pattern to add new functionality and complexity to the already existing application, or Command Pattern to allow things like Move in ARENA to handle different, new games**

1. Consider a workflow system supporting software developers. The system enables managers to model the process the developers should follow in terms of processes and work products. The manager can assign specific processes to each developer and set deadlines for the delivery of each work product. The system supports several types of work products, including formatted text, picture, and URLs. The manager, while editing the workflow, can dynamically set the type of each work product at run time. Assuming one of your design goals is to **design the system so that more work product types can be added in the future**, which design pattern would you use to represent work products?

**I would use a Bridge Design Pattern in order to be able to support future protocols.**

1. Consider the following design goals. For each of them, indicate the candidate pattern(s) you would consider to satisfy each goal:
   1. Given a legacy banking application, allow a new business logic component to work with the legacy application.   
      ***Adapter***
   2. Given a chess program, enable future developers to substitute the planning algorithm that decides on the next move with a better one.   
      ***Strategy* – to decouple policy and mechanisms & allow algorithms to be interchanged;   
      *Bridge* - to be able to support future protocols**
   3. Given a chess program, enable a monitoring component to switch planning algorithms at runtime, based on the opposing player’s style and response time.   
      ***Strategy***
   4. Consider an application that must select dynamically an encryption algorithm based on security requirements and computing time constraints.   
      ***Command or Strategy***