





























OR

10. a) Which design pattern is suitable for spelling checking and hyphenation? Explain it with



b)







Explain the concept of recursive composition with example.











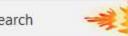




























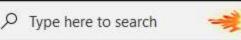






























































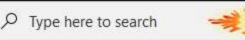




























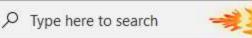


























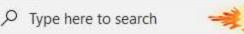




























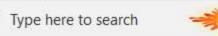




























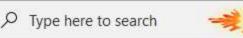




































OR

List and explain the seven design problem for document editor application. 10.

















































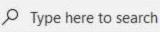


































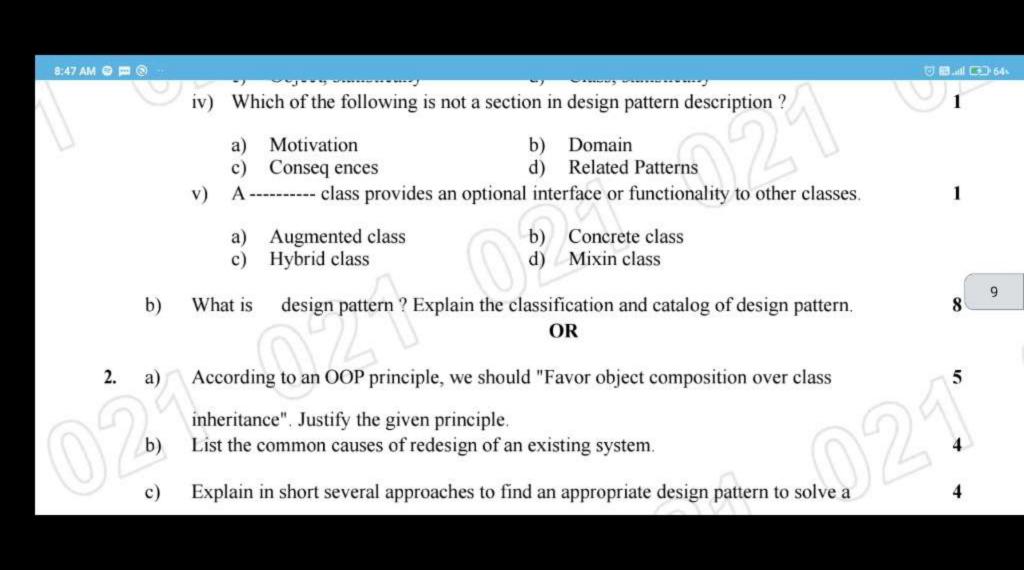








M2006C3MII





























- Differentiate between factory method and Abstract factory design patterns.
 - Explain the features of creational design patterns.





















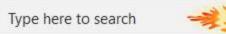




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9

An interactive role playing game is to be designed in which a he o needs to reach to his a)

destination. On the way, the hero encounters a large number of monste s. It is expected to evolve a monster as the landscape changes - for example, for land, a land monster is required for water, a fish monster and for air a bird monster is required. As the landscape changes dynamically, you need to change (create) appropriate monsters while the game is running. Identify a suitable design pattern to handle the dynamic creation of different objects and to reduce the overhead creating same objects repeatedly. Ju tify your answer and draw a class diagram for the solution.

- Explain the different ways for making a singleton cla hread afe.
- Consider an example of a Duck simulation applica ion which uses Duck objects. A Duck class is represented as follows:

Duck quack () fly ()

ck objects are limited and hence it is decided to use a Due to some reason, the number of

























Consider an example of a Duck simulation applica ion which uses Duck objects. A Duck 5. 14 a) class is represented as follows:

> Duck quack () fly ()

ck objects are limited and hence it is decided to use a Due to some reason, the number of Turkey in place of Duck. A Turkey class is represented as follows:

Turkey gobble () fly ()

A turkey

cannot di ectly eplace a duck because their operations are different. Design a

Turkey adapter' class sing Adapter design pattern and use this class to make a turkey object perform duck operations. Also, explain the advantages and disadvantages of Adapter design pattern.

OR



























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- Expl in the bridge design pattern in terms of its intent, applicability, structure and 6. consequences.
 - A coffee shop makes different types of coffees like expresso, Decaf, Darkroast and Mocha. Alongwith these beverages it also offers a variety of toppings used to top on the coffee. Different toppings available are Chocolate, Cream & Milk. A coffee can be topped with any combination and any number of toppings. Design a solution which will be capable of making any type of coffee with a variety of toppings on it. (Use decorator design pattern to decorate a coffee with toppings)
- Compare state and strategy design patterns in terms of their intent, motivation, applicability, consequences, collaborations and structure.

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b)

























10

A restaurant offering breakfast menu has decided to merge with other restaurant that offers b) lunch menu. The existing implementation of both the restaurant's systems are different. Both the systems use same representation of a menu item which is

MenuItem price : double name: string getPrice () getName ()

The breakfast menu is represented using breakfastmenu class and lunch menu is represented using lunchmenu class. Breakfast menu uses an Arraylist to store list of menu items whereas lunchmenu uses an array to store menuitems.

Define an Iterator class using iterator design pattern in order to encapsulate iteration of BreakFastMenu.

OR

Match the following design patterns with the design a pects that design patterns let you vary.



















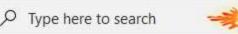






























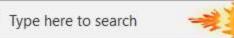
































































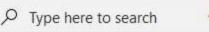




























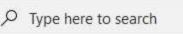








































ii)





Spelling checking & hyphenation.















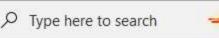












b)





Explain the application of design pa ern in product design.























×



















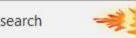


























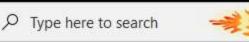










































































































































02 August 2023 Wednesday





























