

Assignment 5 Report

Riley Hancox -000397119

Kevin Tran - 000375580

Luke Thompson - 000736020

Carla Sison - 000397812

Andrew Panko - 000394436

Problem 1

What pattern or patterns were used to solve the problem?

- The factory pattern was used to solve the problem.

Why the pattern or patterns were chosen to solve the problem?

- The factory pattern was used because this problem requires the creation of objects that have the same underlying structure.

What challenges were faced while attempting to solve the problem?

- The most challenging part of attempting to solve this problem was determining appropriate methods and properties for the different toy items.

Problem 2

What pattern or patterns were used to solve the problem?

- Pattern used was the builder pattern.

Why the pattern or patterns were chosen to solve the problem?

- Because the problem provided two complex objects that require to be split up into interfaces where more items have to be added into the complex part. It is also because it is best suited for the job.

What challenges were faced while attempting to solve the problem?

- The toughest part about this pattern is ensuring that the references were made correctly. But that is more of me not recognizing that I could reference objects.

Problem 3

What pattern or patterns were used to solve the problem?

- The pattern we used was the Reactor pattern.

Why the pattern or patterns were chosen to solve the problem?

- The problem proposed is specifying that requests are constantly being made, and as requests come in they are sent to the proper delegate,

which require many workers to perform the job. Also the Reactor pattern has a single loop which constantly waits for incoming requests.

What challenges were faced while attempting to solve the problem?

- Some of the challenges we encountered is building the pipeline different types of requests, which in this case is the mail. Knowing what the type of mail coming in to delegate to the correct worker is imperative for a functioning mailroom.

Problem 4

What pattern or patterns were used to solve the problem?

- The Observer Pattern.

Why the pattern or patterns were chosen to solve the problem?

- I believe this pattern was implemented for this problem, because it is an efficient way of notifying change to a number of classes.

What challenges were faced while attempting to solve the problem?

- An initial challenge while attempting this problem was understanding the overall flow of how classes interact with each other. Additionally, implementing an object oriented approach to making the process clean and neat adds difficulty. Another challenge that was faced was making sure all the functionality and details of the problem was implemented efficiently and properly. Lastly I think the hardest method to complete was the AddBidderToItem. This is because of the amount of processes and logic that deals with the bidding session which included validation to make a successful bid, removing winner, and announcing item.

Problem 5

What pattern or patterns were used to solve the problem?

- The Adapter Pattern.

Why the pattern or patterns were chosen to solve the problem?

- The Adapter Pattern was chosen so that there would be a seamless connection for plug to outlet regardless of differing types. When a plug encounters an outlet that is of a different type, the connection is automatically retried with an adapter that converts the outlets type to the plug's type.

What challenges were faced while attempting to solve the problem?

- The challenges I faced was understanding how to keep the adapter logic separate from the plug and how to setup the plug, outlet & adapter classes.