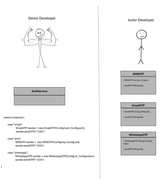
Problem Statement

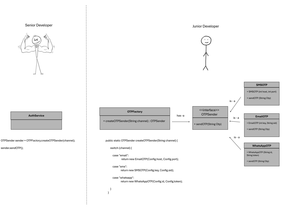
Build a User Authentication Service (Auth Service). The authentication happens through an otp which can be sent through multiples ways:

Email - Connect to SMTP server with hostport config
SMS - Use Twilio API with ID and token
WhatsApp - Use WhatsApp Business API with ID and token



Failure Scenarios:

1) Add new class -> senior needs to know the implementation and the configs to use to build an object.
2) Refactor original class -> senior needs to refactor it too.
3) Modify constructor Params -> senior needs to pass new params.
4) If there are multiple uses of the classes then at all those places you need these updates.

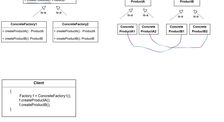


Simple Factory Pattern UML Diagram

Factory Method UML Diagram

Note:
Factory always give products
Factory can be a abstract class or an interface or a method

OTP Example Using Factory Method UML Diagram

Abstract Factory Pattern

Abstract Factory Pattern