

Spring AU '21 – Design Pattern – Morning Session

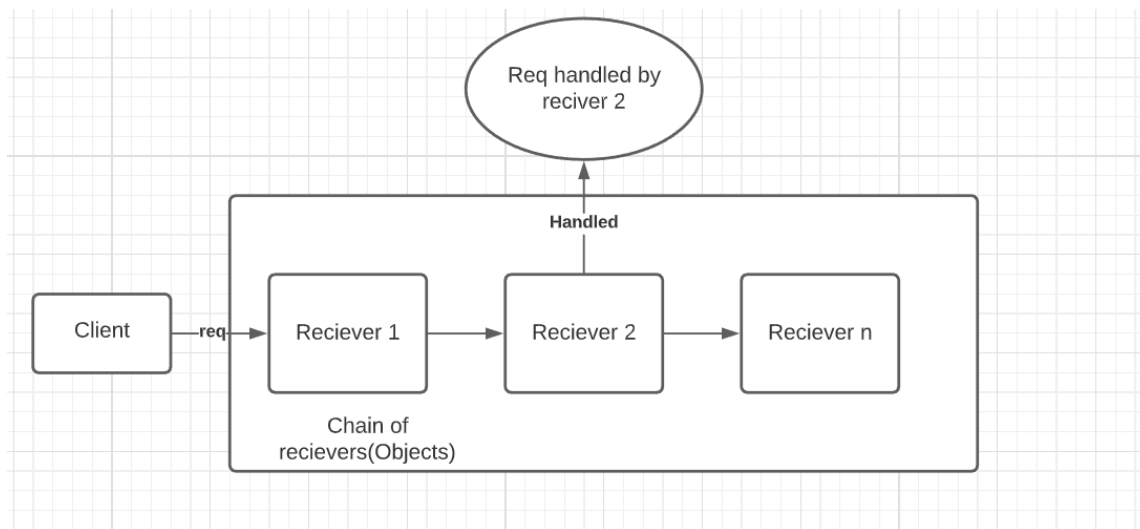
Name: Sheik Abudhahir K

Date: 22/01/2021

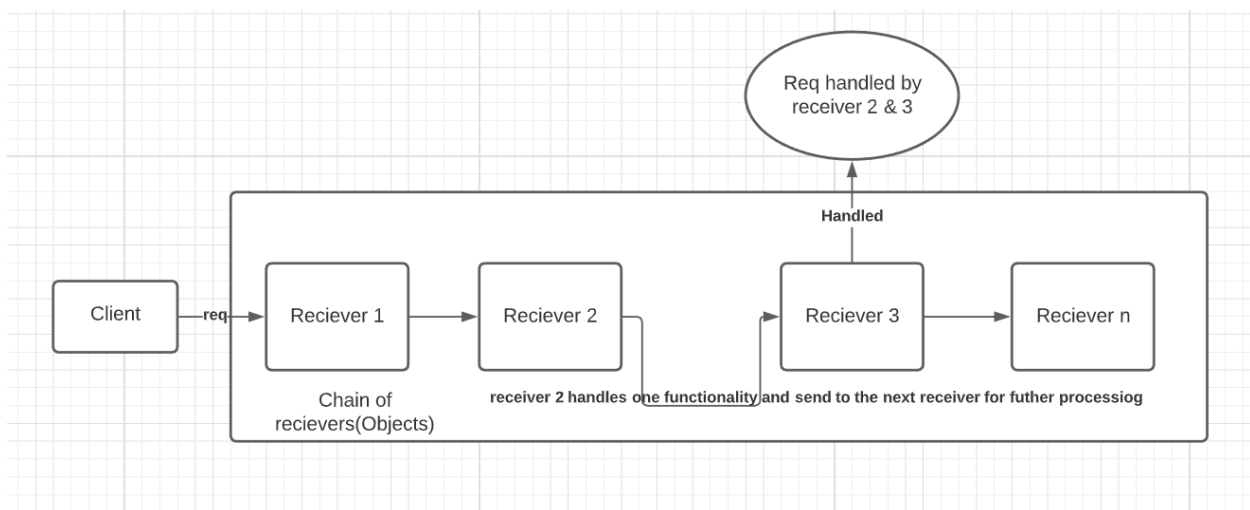
Chain of Responsibilities:

- To achieve loose coupling in software design
- De-couple sender & receiver by giving multiple objects a chance to handle request
- Each receiver objects had reference of next receiver object
- Sometimes one receiver handle request
- Sometime two or more receiver that handles single request depends upon the sender needs

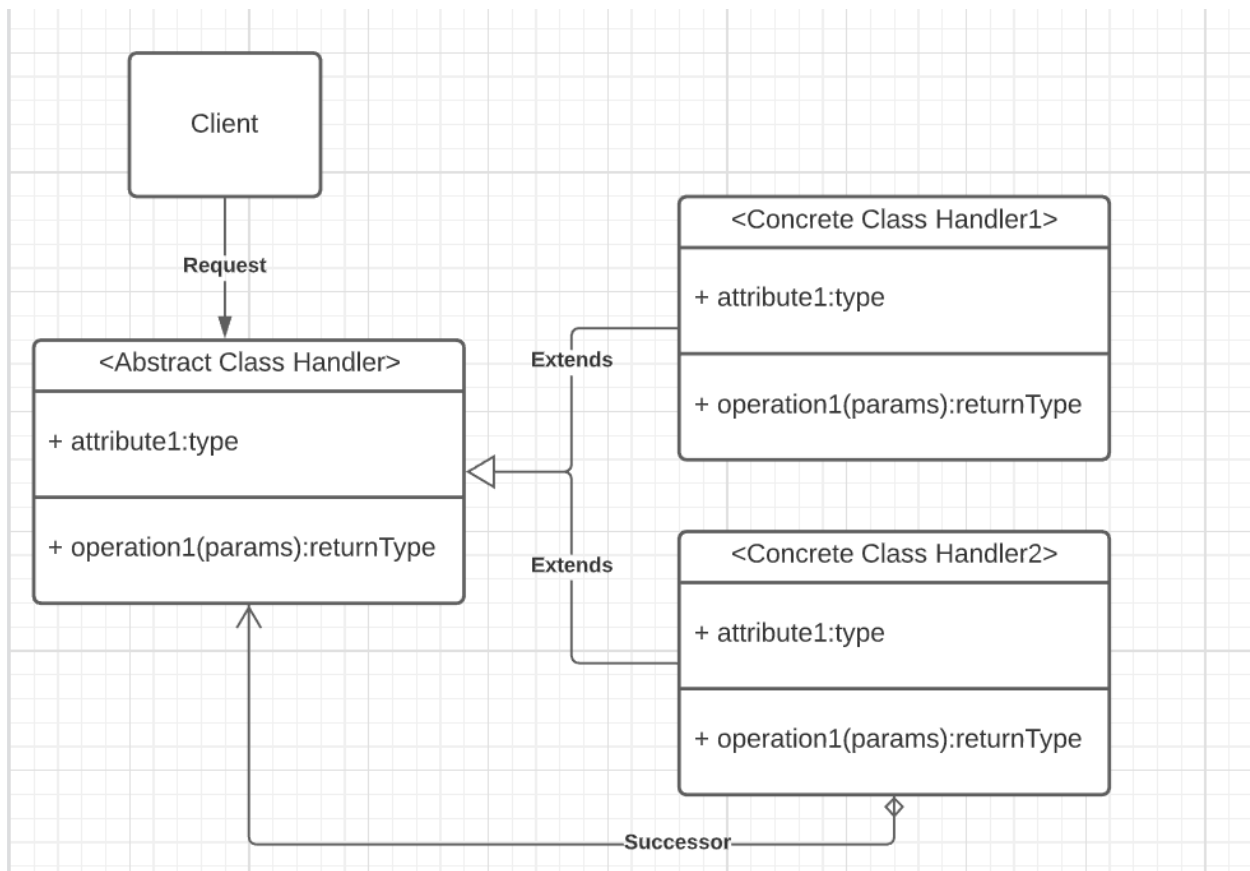
Eg: any one of the receiver handles in chain



Eg: Two receivers handles because some functionality not there in receiver2, So another receiver handles that functionality in the same request



Class Diagram for chain of responsibility:



Example: Hiring Process of a candidate

Step1: Candidate comes to attend interview

Step2: Rounds are the receivers here

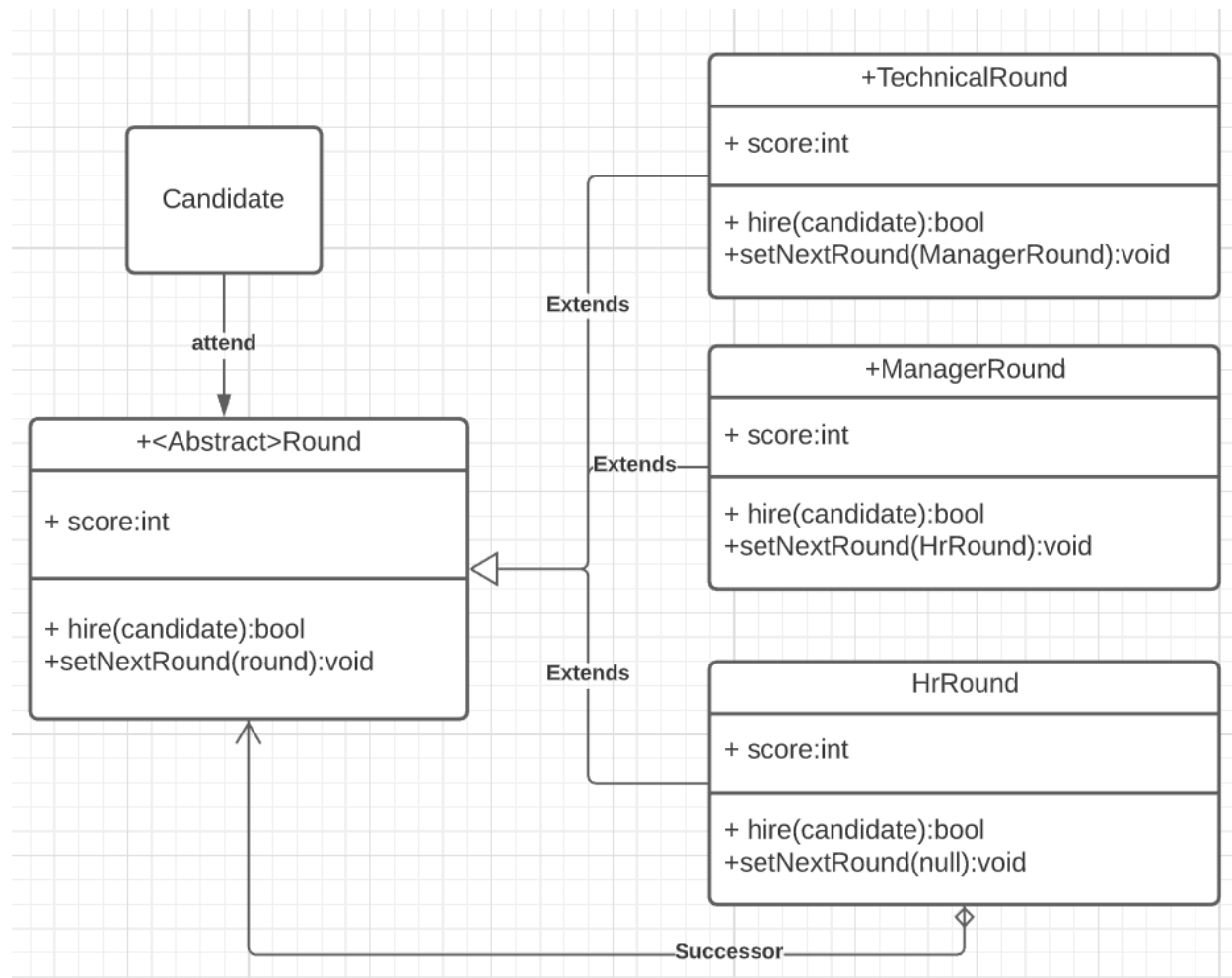
Step3: Candidate attend the Technical Round if he passed then selected to Manager Round

Step4: He attend the Manager Round if he passed then selected to HR round

Step5: He attend the HR Round if he passed then selected for the position.

Example class diagram is attached in next page

Hiring process – chain of responsibility – Class diagram



Question 2: Prototype (creational design pattern)

- Cloning of an existing object instead of creating new one.
- We customize the cloned object as per our requirements.

Eg:

- In database, we get the data from database – here we need to modify the data multiple times, for each time we create the object is not a good practice, at that time we use deep cloning the existing object and use as per our needs. It will not affect the original object.

Java code of the design pattern is uploaded.

Output is attached in next page

Output:

```
Console 23
<terminated> Main (3) [Java Application] C:\Program Files\Java\jre1.8.0_261\bin\javaw.exe (Jan 25, 20
Original Object
Ramesh Suresh Hari Vicky Ganesh

Cloned Object
Ramesh Suresh Hari Vicky Ganesh

3 index is modified in cloned object for some purpose

Cloned Object
Ramesh Suresh Hari Rajesh Ganesh

The modification does not affect the original object

Original Object
Ramesh Suresh Hari Vicky Ganesh
```