

# SDA LAB.

- [Sp22-bse-104](#)
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## [Admission system.](#)

Q: Make a Admission system for pipe and filter

- Eligibility filter.
- Test filter.
- Interview filter.
- Merit list.

CODE OF SYSTEM:

```
import java.util.*;

public class AdmissionSystem {

    static class Candidate {
        String name;
        boolean eligible;
        int testScore;
        int interviewScore;
        int totalScore;

        public Candidate(String name, int testScore, int interviewScore) {
            this.name = name;
            this.testScore = testScore;
            this.interviewScore = interviewScore;
            this.eligible = false;
            this.totalScore = 0;
        }

        public String getName() {
            return name;
        }

        public boolean isEligible() {
            return eligible;
        }

        public void setEligible(boolean eligible) {
            this.eligible = eligible;
        }

        public int getTestScore() {
            return testScore;
        }

        public int getInterviewScore() {
            return interviewScore;
        }

        public int getTotalScore() {
            return totalScore;
        }
    }
}
```

```

        public void calculateTotalScore() {
            this.totalScore = this.testScore + this.interviewScore;
        }

        @Override
        public String toString() {
            return name + " | Eligibility: " + eligible + " | Test Score: " + testScore + " | Interview Score: " + interviewScore + " | Total Score: " + totalScore;
        }
    }

    abstract static class Filter {
        public abstract void process(Candidate candidate);
    }

    static class EligibilityFilter extends Filter {
        @Override
        public void process(Candidate candidate) {
            if (candidate.getTestScore() >= 50) {
                candidate.setEligible(true);
            }
        }
    }

    static class TestFilter extends Filter {
        @Override
        public void process(Candidate candidate) {
            if (candidate.getTestScore() >= 60) {
                System.out.println(candidate.getName() + " passed the test filter.");
            } else {
                candidate.setEligible(false);
                System.out.println(candidate.getName() + " failed the test filter.");
            }
        }
    }
}

```

```

static class InterviewFilter extends Filter {
    @Override
    public void process(Candidate candidate) {
        // Check if the candidate has a minimum interview score of 30
        if (candidate.getInterviewScore() >= 30) {
            System.out.println(candidate.getName() + " passed the interview filter.");
        } else {
            candidate.setEligible(false);
            System.out.println(candidate.getName() + " failed the interview filter.");
        }
    }
}

static class MeritListFilter extends Filter {
    @Override
    public void process(Candidate candidate) {
        candidate.calculateTotalScore();
    }

    public static void generateMeritList(List<Candidate> candidates) {
        candidates.sort(Comparator.comparingInt(Candidate::getTotalScore).reversed());

        System.out.println("\nMerit List:");
        for (Candidate candidate : candidates) {
            if (candidate.isEligible()) {
                System.out.println(candidate);
            }
        }
    }
}

```

```

public static void main(String[] args) {

    List<Candidate> candidates = new ArrayList<>();
    candidates.add(new Candidate("Ubaid", 74, 41));
    candidates.add(new Candidate("Usman", 56, 44));
    candidates.add(new Candidate("Hashim", 41, 33));
    candidates.add(new Candidate("khan", 63, 49));

    List<Filter> filters = new ArrayList<>();
    filters.add(new EligibilityFilter());
    filters.add(new TestFilter());
    filters.add(new InterviewFilter());

    for (Candidate candidate : candidates) {
        for (Filter filter : filters) {
            filter.process(candidate);
        }
    }

    MeritListFilter.generateMeritList(candidates);
}
}

```

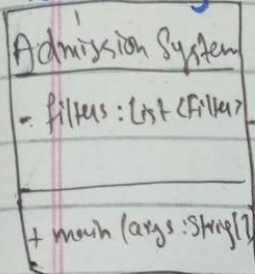
## Class diagram.

# Class Diagram:

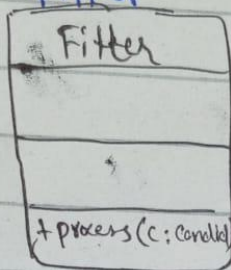
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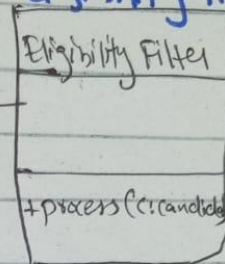
AdmissionSys



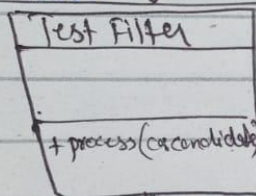
Filter



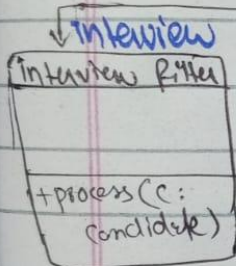
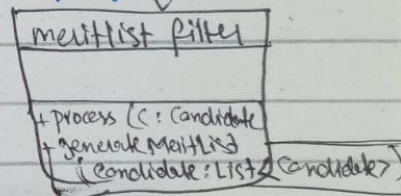
Eligibility Filter



Test



Merit



Candidate

