**Schedule Adherence:-**

**Code Structure:-**

**1) class uploadFile will upload the data from two files PlannedSchedule and ActualSchedule into data base.**

**this class have a enumeration fileType which is either PLANNED or ACTUAL set at the object creation i.e. constructor.**

**2) class ScheduleAdherenceReportGenerate will two private Arrays each representing the number of tasks assigned at each minute in Planned Schedule and Actual Schedule.**

**Algorithm:-**

**Initialise both the arrays with zero.**

**Fetch the data from data base and for each index from interval start to interval end increment the array value by one. Both the Arrays now represents the total jobs assigned and perfomed actually.**

**Total deviation of the day can be calculated as the sum of absolute difference of each index of array.**

**Thus deviation at daily basis is calculated.**

**Private method calculateDeviation does this calculation.**

**Deviation at Weekly and Monthly basis is calculated in real time from previous day calculated deviation to daily deviation of present day and excluding daily deviation of a day a month ago thus producing a continuous deviation of weekly and monthly basis.**

**This class two enumeration**

**1)ReportLevel (USER,INTERVAL,SITE,WORKGROUP)**

**2)Duration(DAILY,WEEKLY,MONTHLY)**

**these are set at object creation.**

**This class will have generateReport method which on basis of ReportLevel and Duration calls calculateDeviation at different levels.**

**3. ScheduleRow class :- this class have attributes Site(String),WorkGroup(String),UserId(String),interval(Interval).**

**These attributes are set at object creation.**

**4.Interval class:-**

**this class have attribues StartTimeStamp (String) EndTimeStamp(String),IntervalType(String).These attributes are set at object creation.**

**Code Flow:-**

**First while processing input file of actual data and planned data create an object of ScheduleRow type and upload into database table.**

**generateReport method is called which on each different ReportLevel and Duration call calculateDeviation method .**

**calculateDeviation method initialise both the arrays with 0.**

**Fetch the data from database and make changes to arrays and calculates deviation as sum of absolute value of difference at each index. Finally it writes the deviation on the output file.**