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////////Objective////////

The purpose of this document is to provide a structure for the design of a small database application that has three classes, to store student grades for maths, science and computer classes. The object instances to be created by two different ways, one using an array table that is indexed up to 10, and two an arraylist that is dynamic. Every class must override a getSubject method that returns the grades for students. As a complication the user has to be able to input the information via command line and introduction of exceptions into coding

////////Solution////////

There should be three classes which are computer, science and maths that have constructors, getters and setters methods (i.e. setGrade and getGrade) and all classes should override getSubjects method that returns all the information about that specific studentClass .

The solution is obtained by creating few userinterface methods that display to the user and gets the grades through command line. Then, the grades are passed on to an ArrayList by Student student = new AnyStudentClass(String name, double grades) which is polymorphic object creation. When it comes to the printing of the arraylist the printing of the individual class is obtained by calling to the getSubjects method of Student student object that is contained inside the arraylist.

////////Conclusion////////

The difficulty in achieving the goal was grasping of the idea of polymorphism and inheritance. It is understood that in polymorphism While invoking getSubjects() the compiler sees getSubjects() in the student class at compile time, and the JVM invokes getSubjects() in the subClass at run time. Clearly this reduces the printing operation very easy with minimum coding.