**STUDENT ID NUMBER GENERATOR**

**Project Objective:**

Create the console based Java Application to generate the Student ID.

**General Instructions:**

1. Do not change the class name / package name / method prototype.

2. Use Scanner Classes to get inputs.

3. Handle the exceptions & inputs properly.

4. Follow proper coding standards.

**Packages Information:**

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| com.wipro.student.basic | Basic Class |
| com.wipro.student.exception | Exception Class |
| com.wipro.student.service | Logic Implementation and Validation Class |
| com.wipro.student.main | Main Class |

**Design Specifications:**

**Package :** com.wipro.student.basic

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| **Class Name** | **Description** |
| Student | String firstName;  String lastName;  int standard;  String gender;  int yearOfBirth;  Generate the Getters and Setters for the above variables. |

**Package :** com.wipro.student.exception

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| **Class Name** | **Description** |
| StudentFirstNameMaxLimitException | This Class should override the toString() method and return the message of “**Student First Name Maximum Limit Exceeded.**” |
| StudentLastNameMaxLimitException | This Class should override the toString() method and return the message of “**Student Last Name Maximum Limit Exceeded.**” |
| StudentInvalidStandardException | This Class should override the toString() method and return the message of “**Please Input Valid Standard.**” |
| StudentInvalidGenderException | This Class should override the toString() method and return the message of “**Please Input Valid Gender.**” |
| StudentInvalidYearOfBirthException | This Class should override the toString() method and return the message of “**Please Input Valid Year Of Birth.**” |

**Package :** com.wipro.student.service

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| **Class Name** | **Description** |
| StudentIDGenerator | public static boolean validateStudentDetails(Student studentObject)  The above highlighted method should validate the student details and need to handle the various exceptions as explained below:  This method should handle StudentFirstNameMaxLimitException, when the length of the Student First Name is greater than **20** **characters**.  This method should handle StudentLastNameMaxLimitException, when the length of the Student Last Name is greater than **25** **characters**.  This method should handle StudentInvalidStandardException, when the Student Standard entered is not in the range of **[1-10](Both Inclusive).**  This method should handle StudentInvalidGenderException, when the Student Gender entered is neither **Male** nor **Female.**  Note: Use equalsIgnoreCase() while doing this gender validation.  This method should handle StudentInvalidYearOfBirthException, when the Student Year Of Birth entered is **not atleast 3 years from the current running year.**  **If all the above specified validations are fine, then this method should return true, else it should return false.**  public static String generateStudentID(Student student)  This method will contains the logic for generating the unique and random ID for each and every student, based on the details provided.  Initially, this method should call validateStudentDetails(student) method and get the response from it.  If the response obtained is **false**, then it should return the message as **Student ID Not Generated. Please Enter Proper Details.**  **If the response obtained is true, then it should implement below logic to generate Student ID:**  **Student ID must be 8 digit length.**  🡪 First 2 characters of Student ID must be first 2 characters of first name.  🡪 3rd character of Student ID must be the first character of last name.  🡪 4th character of Student ID must be the first character of gender.  🡪 5th and 6th characters of Student ID must be the last two digits of year of birth.  🡪 7th and 8th characters of the Student ID must be 2nd and 4th (last) digit of the four digit number generated at random.  Store the above generated Student ID in one variable and return the same, when called from main class. |

**Package :** com.wipro.student.main

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| **Class Name** | **Description** |
| StudentMainClass | In the main method, use the scanner class to get the details of the student first name, last name, standard, gender and year of birth.  Create an object for the **Student** class, and then set the above values collected from the console.  Then, Create an object for the **StudentIDGenerator** class and call the method **generateStudentID()** (pass the recently created Student class object as a parameter to this method) and print the obtained response in the below format (**Student ID** **must be printed in Upper Case**) ::  **Student ID Generated Is :: Obtained Response** |