**CHALLENGE 1:**

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Purpose: values of data types using different variables

@author: Chanpreet

@date: 31 January,2023

@time: 10.00p.m

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 public class StudentRecord

 {

    String firstName;  // instance variables

    String lastName;

    int studentID;

    int gradeCourseOne=100;

    String gradeCourse;

    // constructor that takes no arguments

    public StudentRecord()

    {

    }

     // constructor that takes four arguments

    public StudentRecord( String firstName, String lastName, int studentID, int gradeCourseOne, String gradeCourse)

    {

        this.firstName=firstName;

        this.lastName=lastName;

        this.studentID=studentID;

        this.gradeCourseOne=gradeCourseOne;

    }

         // getter method for each field

         public String getfirstName()

        {

            return firstName;

        }

        public String getlastName()

        {

            return lastName;

        }

        public int getstudentID()

        {

            return studentID;

        }

        public int getgradeCourseOne()

        {

            return gradeCourseOne;

        }

        // setter method for each field

        public void setfirstName(String firstName)

        {

          this.firstName=firstName;

        }

        public void setlastName(String lastName)

        {

           this.lastName=lastName;

        }

        public void setstudentID(int studentID)

        {

          this.studentID=studentID;

        }

            public void setgradeCouseOne(int gradeCourseOne)

        {

         this.gradeCourseOne=gradeCourseOne;

        }

         // creating a method which is returning grade

       public char getgradeCourse()

       {

        if(this.gradeCourseOne>=90 && this.gradeCourseOne<=100)

       {

        return'A';

       }

       else if(this.gradeCourseOne>=80 && this.gradeCourseOne<=89)

       {

        return'B';

       }

        else if(this.gradeCourseOne>=70 && this.gradeCourseOne<=79)

       {

        return'C';

       }

        else if(this.gradeCourseOne>=60 && this.gradeCourseOne<=69)

       {

        return'D';

       }

        else if(this.gradeCourseOne>=50 && this.gradeCourseOne<=59)

       {

        return'E';

       }

        else

       {

        return'F';

       }

       }

       // another method which is returning number of vowels

       public  int getNumberofVowels()

       {

       int count=0;

            for (int i=0 ; i<=5; i++)

            {

         char ch = firstName.charAt(i);

         if(ch == 'a'|| ch == 'e'|| ch == 'i' ||ch == 'o' ||ch == 'u')

         {

            count ++;

         }

            }

         return count;

 }

 }

**CHALLENGE 2 AND 3:**

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Purpose: values of data types using different variables

@author: Chanpreet

@date: 2 february,2023

@time: 1.00p.m

 \*/

import java.util.Scanner;

public class StudentRecordTestHarness

{

    public static void main(String[] args)

    {

        // Instantiate a student record object

        StudentRecord s1 = new StudentRecord("Chanpreet", "kaur", 2004567,45," "  );

         // printing the data of  student record

        System.out.println(s1.getfirstName());

         System.out.println(s1.getlastName());

          System.out.println(s1.getstudentID());

           System.out.println(s1.getgradeCourseOne());

           System.out.println(s1.getgradeCourse());

            // Instantiate second student record object

           StudentRecord s2= new StudentRecord();

           Scanner studentRecord2= new Scanner(System.in);

             // ask the user for the data

           System.out.println("Enter First Name");

           String fName = studentRecord2.nextLine();

           System.out.println("First Name is:"  +fName);

           System.out.println("Enter Last Name");

           String lName = studentRecord2.nextLine();

           System.out.println("Last Name is:"  +lName);

           System.out.println("Enter Student ID");

           int stuID = studentRecord2.nextInt();

           System.out.println("Student ID is:"  +stuID);

           System.out.println("Enter Grade Course One");

           int g1 = studentRecord2.nextInt();

           System.out.println("Grade Course One is:"  +g1);

            // using the appropriate setter methods

           s2.setfirstName(fName);

           s2.setlastName(lName);

           s2.setstudentID(stuID);

           s2.setgradeCouseOne(g1);

           // printing the data for second student record

            System.out.println(s2.getfirstName());

         System.out.println(s2.getlastName());

          System.out.println(s2.getstudentID());

           System.out.println(s2.getgradeCourseOne());

           System.out.println(s2.getgradeCourse());

           Scanner studentRecord3= new Scanner(System.in);

           System.out.println("Enter First Name that is 5 letter long");

           String firstName = studentRecord3.nextLine();

           System.out.println("First Name that is five letter long:"  +firstName);

           System.out.println("Enter Last Name");

           String lastName = studentRecord3.nextLine();

           System.out.println("Last Name is:"  +lastName);

           System.out.println("Enter Student ID");

           int studentID = studentRecord3.nextInt();

           System.out.println("Student ID is:"  +studentID);

           System.out.println("Enter Grade Course One");

           int gradeCourseOne= studentRecord3.nextInt();

           System.out.println("Grade Course One is:"  +gradeCourseOne);

                 // Instantiate third student record object

            StudentRecord s3= new StudentRecord(firstName, lastName, studentID, gradeCourseOne, "" );

            System.out.println(s3.getfirstName());

         System.out.println(s3.getlastName());

          System.out.println(s3.getstudentID());

           System.out.println(s3.getgradeCourseOne());

           System.out.println(s3.getgradeCourse());

           System.out.println(s3.getNumberofVowels());

    }

}

**OUTPUT:**

A screenshot of a computer

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