

STUDENT ACTIVITY 2.1 KEY: OBJECT-ORIENTED PROGRAMMING

MTA Course: Software Development Fundamentals

Topic: Understand error handling

File name: SoftDevFund_SA_2.1_key

Lesson Objective:

2.1: Understand the fundamentals of classes.

Resources, software, and additional files needed for this lesson:

- SoftDevFund_PPT_2.1,
- SoftDevFund_RL_2.1
- SoftDevFund_SA_2.1
- SoftDevFund_SA_2.1_key

Directions to the student:

Complete each activity as described.

Content: (Answers will vary, but will resemble what's given here)

1. Write a constructor for the following class that initializes the variables `idNumber`, `gpa` and `name`.

```
public class Student
{
    private int idNumber;
    private double gpa;
    private String name;

    public Student( int _idNumber, double _gpa, String _name)
    {
        idNumber = _idNumber;
        gpa = _gpa;
        name = _name;
    }
}
```

2. Identify the components of the following method:

```
public double calculateAverage(int score, int total)
{
    return score/total;
}
```

Access modifier	public
Return type	double
Method name	calculateAverage
Parameters	int score, int total

3. Implement a class according to the following description and write a tester/driver class to instantiate an object of the class and call its `displayArea` method.

Write a class called `Triangle` that has two properties: `theBase` and `theHeight`. The constructor for a triangle initializes the `theBase` and `theHeight`, while a method called `displayArea` will calculate its area and display it to the console window. Use the formula $area = .5(base*height)$.

```
public class Triangle
{
    private double TheBase;
    private double TheHeight;

    public double theBase
    {
        get { return TheBase; }
        set { TheBase = value; }
    }

    public double theHeight
    {
        get { return TheHeight; }
        set { TheHeight = value; }
    }

    public Triangle( double _base, double _height)
    {
        TheBase = _base;
        TheHeight = _height;
    }

    public void displayArea()
    {
        Console.WriteLine ("Area: " + .5*TheBase*TheHeight);
    }
}

public class Driver
{
    public static void Main()
    {
        Triangle tri = new Triangle(4, 8);
        tri.displayArea();
        Thread.Sleep(50000);
    }
}
```