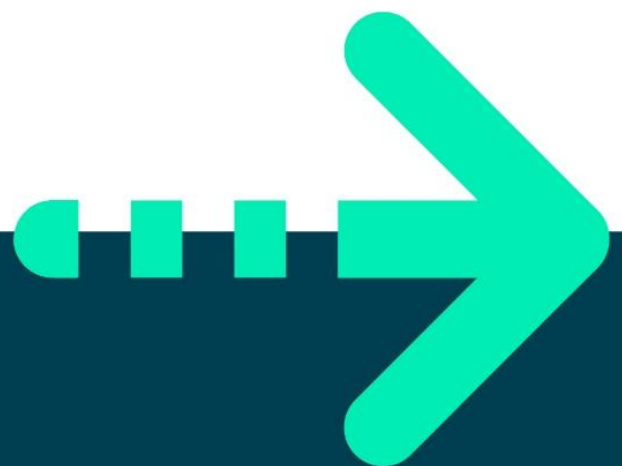# EXERCISE 1, FUNDAMENTALS RECAP

Exercise 1, Fundamentals – recap

Objective

This is a short quiz inviting you to spot possible errors in code fragments and make any comments you see fit.

Overview

Read each code fragment below and record your comments.

Step by step

1.

```
int x = 318;
bool isDivBy3 = x % 3;
```

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2.

```
double d1 = 25.4, d2 = 36.3;
int result = Math.sqrt((int)d1) + Math.sqrt((int)d2);
```

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3.

```
int x = 3, y = 4;
double average = (x + y)/2.0F;
```

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_____

4.

```
public void Whatever(int salary) {
   double bonus = salary * .05;
   return bonus
}
```

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5.

```
public int test(string s) {
   if (s == "Fred") return 20;
   else if (s != "Fred") return 40;

   return 0;
}
int res = test("Fred");
```

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6. Which m4() method is called?

```
class Student {
   public void m1(String x, int y) {}
   public string m2(String x, int y) {return "";}
   public void m3(String name, int age) {}

   public static void m4(short s) {}
   public static void m4(int i)   {}
}

// which method is called in this client code?
Student.m4(12);
```

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7. What will be printed?

```
Console.WriteLine("{0} is definitely {1}. Very {1}!",
                           "Fred", "old");
```

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8. What would this code do?

```
int value = 100;
if (value <= 700) { Console.WriteLine("A"); }
if (value <= 500) { Console.WriteLine("B");}
else {  Console.WriteLine("C"); }
```

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9. What would the variable k contain?

```
String name = "fred";
double k = (name == "Fred") ? 15 : Math.sqrt(100);
```

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10. What will be printed here?

```
for(int i = 0; i <= 10; i++) {
   Console.WriteLine("Current value of i is " + i++);
}
```

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11. What will be printed here?

```
int[4] ages;
for(int i = 0; i < ages.Length; i++) {
   if (ages[i] = 0) {
     Console.WriteLine("Found an element that is 0");
   }
}
```

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12. What will be printed here?

```
var names = new String[2,4];
Console.WriteLine(names.Length);
for (int i = 0; i < names.GetLength(0); i++)
{
    Console.WriteLine(names[0,i]);
}
```

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13. Would this compile? If so, what would be the person's name?

```
class Person {
  private string name;
  public void Person(String name) {
    this.name = name;
  }
  public void Person() {
    this.name = "Has no name";
  }
  ...
}

// client code

Person p1 = new Person("Fred");
Person p2 = new Person();
```

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14. Fill the missing dots. What variable names would you put?

```
class Person {
  // ctor here expects String,int,String as above
  public static String getDetails() {
    return String.format("{0}\t{1}\t{2}", .., .., ..);
  }
}


Person p1 = new Person("Fred", 27, "IT Teacher");
Console.WriteLine(p1.getDetails());
```

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15. Would this code compile?

```
class Person {
  private int retAge = 65;
  private int age = 34;

  public static int yearsToRetirement() {
    return retAge - age;
  }
}
```

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16. Would this code compile? Please note, Car is public and Engin is not. What kind of visibility does Engine has in this assembly? What visibility it has in other assemblies?

```
public class Car {
   private Engine eng = new Engine();
   public Engine getEngine() { return eng;}
}
class Engine {
   public Engine() { /* set up engine */ }
}
```

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17. What would this code print?

```
String s = "    Freddie    ";
s.Trim().ToUpper().Substring(1,3);
Console.WriteLine(s + " is my best colour");
```

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18.

```
...
List<Car> cars = new List<>();
cars.add(new Car("Ford"));
string model = cars[0].getModel();
```

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19.

```
string data = "aeiou";
foreach(char c in data) {
   Console.WriteLine(c + '-' + "is a vowel");
}
```

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