

LOCATION: SWANSEA

LLEOLIAD: ABERTAWE

LEVEL 4

LEFEL 4

EXAMINATION PERIOD
MAY 2019

CYFNOD ARHOLIADAU
MAI 2019

MODULE CODE: ACCA4017
SOFTWARE DEVELOPMENT

TIME: 2 HOURS

ANSWER ALL QUESTIONS

NOTE: IN-CLASS TEST, TIME/DATE TO BE ARRANGED BY LECTURER

Equipment or materials required – Computers with Visual Studio installed

Adnoddau neu ddefnyddiau sydd eu hangen – Cyfrifiraduron gyda Visual Studio

Candidate Name	Daniel Sergeant
Student ID	525 158 262 54
Signed	
Date	07 / 05 / 2019

ANSWER ALL QUESTIONS

1. a) Which variable type would be most suitable to store each of the following values?

3.142	 ~~Single~~ Double ✓
123	 integer ✓
Jim	 String ✓
79.6	 Single ✓
a	 ~~String~~ Char ✓
-34.52	 Single ✓

[1 mark each - 6 marks total]

1 b) What errors are present in the following program to calculate the area of a triangle?

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace ExamQ1b
{
    class Program
    {
        static void Main(string[] args)
        {
            Console.WriteLine("Area of Triangle");
            Console.Read("Enter base length");
            write double b = double.Parse(Console.ReadLine());
            Console.Write("Enter base height");
            double h = double.Parse(Console.ReadLine());
            double area = b * h * 0.5;
            Console.WriteLine("Area of triangle is {0}", area.ToString("0.00"));
            Console.ReadLine(); //pause
        }
    }
}
```

Handwritten notes:

- ✓ ~~write~~ (pointing to `Console.Read`)
- ✓ ~~no brackets~~ (pointing to `Console.ReadLine()`)
- ✓ ~~0~~ (pointing to `0` in `Console.ReadLine()`)
- ✓ ~~double~~ (pointing to `double` in `area = b * h * 0.5;`)
- 3 (circled, indicating 3 errors)

[5 marks]

1 c) How many iterations do the following loops have?

i)

```
for (int index=0; index<12; index++)
{
    Console.WriteLine(index);
}
```

12 ✓

ii)

```
int index=1;
while(index<6)
{
    Console.WriteLine(index);
    index = index + 1;
}
```

5 ✓

1 = 1 + 1
2 = 2 + 1
3 = 3 + 1
4
5
6

[4 marks]

2

1 d) What is the value of the integer variable total after the following code is executed?

```
int total=1;
for (x=0; x<7; x++)
{
    total=total+x;
    if(x == 4)
    {
        total=0;
    }
}
```

.....

[3 marks]

0

1 e) Given the following program:

```
void main()
{
    int x = 3;
    if( x < 5 )
    {
        Console.WriteLine("x does not exceed 3");
    }
    else if( x > 5 )
    {
        Console.WriteLine("x exceeds 5" );
    }
    else
    {
        Console.WriteLine ("x is " + x );
    }
}
```

i) Write the code you would use to test x in the first condition:

if (x < 3) [1 mark]

ii) Write the code you would use to test x in the second condition x:

if (x > 5) [1 mark]

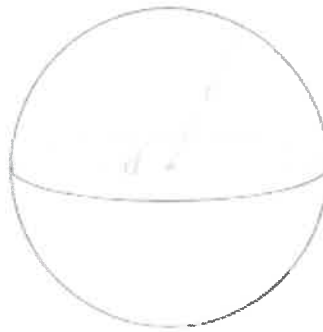
[20 marks total for Question 1]

2. Calculating the surface area of a sphere

The surface area of a sphere is calculated using the formula:

$$A = 4\pi r^2$$

area = $4 \times 3.14 \times r^2$



Task:

Write a program to calculate the ^{area} volume using the above formula displaying the answer in a suitable message and showing value to 2 decimal places.

Allow the user to enter the measurement for r . You may set PI as 3.142

[10 marks total for Question 2]

3. Using arrays

Task:

Prompt the user to enter 5 temperatures into an array (in Celsius). ✓

After the temperatures have been entered, print each of the values on the screen using a loop. ✓

After this, convert the five temperatures to Fahrenheit and print them on the screen to two decimal places.

Formula: $Fahrenheit = (Celsius * 9/5) + 32$

[15 marks total for Question 3]

4. Using Array Search Pattern

Ask the user to enter 8 names. ✓

Ask the user to enter a search name. ✓

Search the previously entered names for the search name.

Either display a message "Found It" or a message "Failed to find it".

[15 marks total for Question 4]

Diwedd/End


```

1  using System;
2  using System.Collections.Generic;
3  using System.Linq;
4  using System.Text;
5  using System.Threading.Tasks;
6
7  namespace Q2
8  {
9      class Program
10     {
11         static void Main(string[] args)
12         {
13             //Code By Daniel Sergeant
14             int[] area;
15             Double PI = 3.142;
16             Console.WriteLine("Please enter your R value:"); //this is asking
17             the user to enter their value for R.
18             Console.ReadLine(); // this allows the users to enter their value
19             for R.
20
21
22
23
24
25
26
27
28             Console.ReadLine(); //pause
29         }
30     }
31 }
32

```

Constans 1
 Variables 1
 Formula - 0
 o/p 0

2




```

1  using System
2  using System.Collections.Generic;
3  using System.Linq;
4  using System.Text;
5  using System.Threading.Tasks;
6
7  namespace q3
8  {
9      class Program
10     {
11         static void Main(string[] args)
12         { // Code by Daniel Sergeant
13             int[] values = new int[5]; // this is an empty array.
14             string Prompt;
15
16
17
18
19             Console.WriteLine("Please enter your 5 Celsius values: "); // this
                is telling the user what is being asked of them.
20
21             for (int i = 0; i < values.Length; i++)
22             {
23                 Prompt = Console.ReadLine(); // this allows the user to enter
                their 5 values.
24                 values[i] = int.Parse(Prompt); // this converts the string to
                numbers.
25             }
26
27
28             for (int i = 0; i < values.Length ; i++)
29             {
30                 Console.WriteLine("The values are {0}", values[i]); //this is
                displaying the values to the user.
31             }
32
33
34
35
36
37             Console.ReadLine(); //Pause.
38         }
39     }
40 }
41

```

No comes on!

loops 2 (missin final loop)
 arrays 5
 2dp 2 ✓
 Count 0

9


```

1  using System;
2  using System.Collections.Generic;
3  using System.Linq;
4  using System.Text;
5  using System.Threading.Tasks;
6
7  namespace Q4
8  {
9      class Program
10     {
11         static void Main(string[] args)
12         { //code by daniel Sergeant
13             string[] values = new string[8]; // this is an empty array.
14             string Prompt;
15             string Answer;
16
17
18
19             Console.WriteLine("Please enter your 8 names: "); // this is telling
                the user what is being asked of them.
20
21             for (int i = 0; i < values.Length; i++)
22             {
23                 Prompt = Console.ReadLine(); // this allows the user to enter
                    their 8 values.
24             }
25
26             Console.WriteLine("Please enter a name to be serched for: "); //
                this is telling the user what is being asked of them.
27
28             Console.ReadLine();
29
30
31
32             if (Answer=values)
33             {
34                 Console.WriteLine("Found it");
35             }
36             Console.WriteLine("Failed to find");
37
38
39             Console.ReadLine(); // pause
40         }
41     }
42 }
43
44

```

var k =

— No search?

individual prompt?

Date type 3

Adress 2

Search: 0

7



Message: 1 (ok, but pointless!)

Code strain 1

