CSE 1321 CSE 1321 Test 3A

Rutvik Dhira Marakana

TOTAL POINTS

94 / 100

QUESTION 1

Array - Unlucky Numbers 35 pts

1.1 Declare the Array 5 / 5

✓ **+ 5 pts** **Correctly declared array.**

+ 0 pts Incorrectly declared array or unattempted.

1.2 Scan the array 20 / 30

✓ **+ 10 pts** **Correctly used a loop to scan the array. E.g.: for (i is 1 to less than myArray Length, i ++) or while (count < myArray Length) or FOREACH in myArray**

+ 10 pts Correctly printed statement if 17 is not found after scanning array. E.g.: If (myArray[i] != 17) print ("Buona fortuna!")

✓ **+ 5 pts** **Correctly printed statement if 17 is not found while scanning array instead of after as the question states.**

+ 10 pts Correctly printed statement if 17 is found after scanning array or broke from loop once found. E.g.: If (myArray[i] == 17) print ("Che Brutto!"), Else statement is also acceptable.

✓ **+ 5 pts** **Correctly printed statement if 17 is found while scanning array instead of after as the question states.**

+ 0 pts Incorrect/Unattempted. E.g.: Did not scan the array correctly or at all.

QUESTION 2

2 SpyTurtle Class Declaration 43 / 45

✓ **+ 5 pts** **Class keyword/Begin**

+ 2 pts End class

✓ **+ 6 pts** **Attributes/variables declared**

✓ **+ 5 pts** **Constructor keyword**

✓ **+ 2 pts** **End constructor**

✓ **+ 5 pts** **Appropriate pairing of parameters to variables in constructor**

✓ **+ 6 pts** **Attributes initialized in the constructor**

✓ **+ 5 pts** **DropMic method declared**

✓ **+ 2 pts** **No parameters for DropMic**

✓ **+ 5 pts** **Number of mics decreased by 1 in the DropMic method**

✓ **+ 2 pts** **End DropMic method**

+ 0 pts No credit

- 1 pts DropMic shouldn't return a value

- 3 pts Not the correct way to declare attributes

- 2 pts Missing variable/attribute declaration

- 2 pts If passing parameters to the constructor, you should use them to initialize the attributes

QUESTION 3

3 Using Dog Class 20 / 20

✓ **+ 8 pts** **Properly declared and initialized two Dog objects.**

+ 4 pts Dog objects are declared, but are missing necessary arguments.

+ 0 pts Dog objects are not properly declared.

✓ **+ 4 pts** **Correctly called the eat method.**

+ 2 pts Called the eat method, but did not pass appropriate arguments.

+ 0 pts Incorrect call for eat method.

✓ **+ 4 pts** **Correctly called the bark method for each object.**

+ 0 pts Incorrect call(s) for bark method.

✓ **+ 4 pts** **Correct output for both Dog objects.**

+ 2 pts Output provided for both dogs, but failed to increase the first dog's weight.

+ 0 pts Incorrect output.

+ 0 pts No submission.

+ 0 pts Output does not match the objects that were created.

QUESTION 4

4 Extra Credit 1 / 0

✓ + **1 pts** **Correct**

+ **0 pts** Blank

QUESTION 5

5 Curve 5 / 0

✓ + **5 pts** **Correct**

CSE 1321 Lecture Test 3 Cover Sheet

1) **Print your Name, ID# and NetID on each page.**
2) Student has 45 minutes to complete the exam
3) Student MAY NOT use notes or book
4) Student should write their code responses in Pseudocode in the Answer boxes on the test paper
5) Student is not allowed any electronic devices that can be used to look up or store answers. A standard calculator (non-graphing is acceptable)
6) Partial credit will be given.

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Date: November 12

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Q1 (35 points): UNLUCKY NUMBERS. Did you know that unlucky numbers vary around the world? For example, China's is 4, Japan's is 9, Italy's is 17, and Afghanistan's is 39. For this question, you will do two things. First, in pseudocode, you will declare an array of 1,000,000 numbers. Second, we're going to help Italy out and scan the array to make sure the number 17 doesn't appear in the array. Before you scan it in step 2, you can assume the array has been initialized with random numbers.

In pseudocode, declare an array of 1,000,000 numbers:

```
CREATE array numbers[1000000]
```

Using the array above, write pseudocode to scan the array – searching for the number 17. After scanning, if a 17 was found, print "Che brutto!" (How horrible!). If 17 isn't found, print "Buona fortuna!" (Good luck!). Try not to spend the rest of the day speaking with an Italian accent.

```
FOR (i ← 1 ; i < 1000000 ; i ← i + 1)
    IF (numbers[i] == 17) THEN
        PRINT "Che brutto!"
    ELSE
        PRINT "Buona fortuna!"
    ENDIF
END FOR
```

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Q2 (45 points): The government is working on a TOP SECRET project and needs your help. They want you to prototype a SpyTurtle! They need to know where the turtle is at all times, so each turtle has an X and Y coordinate. The turtle can hold up to 10 microphones and has the ability to drop a microphone, decreasing the number of microphones by 1. For this question, you will write a class, class variables, and a constructor for the SpyTurtle. You will also write a method called "DropMic" that decreases the number of microphones by 1. Fill in the comments below.

```
// Start your class here
CLASS SpyTurtle
BEGIN

    // Put class attributes/variables here
    CREATE X
    CREATE Y
    CREATE microphones

    // Put constructor here. It should take in the starting X/Y position and initialize the variables
    CONSTRUCTOR SpyTurtle (x, y)
    BEGIN
        X ← x
        Y ← y
        microphones ← 10
    END CONSTRUCTOR

    // Put method DropMic here
    METHOD DropMic()
    BEGIN
        microphones ← microphones - 1
    END METHOD
```

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Q3 (20 points): Imagine someone has written a Dog class for you with the following methods:

// Constructor
Dog (parameters: name (string), weight (integer))

// Method1 – it makes the dog gain weight by a certain amount
eat (parameter: amount_of_food (integer))

// Method 2 – prints out the name of the dog, a comma, and its weight
bark (parameters: none)

// Declare two objects/variables of type Dog and initialize them correctly:

```
CREATE d1 AS Dog    // First Dog object
d1 ← new Dog("Bruno", 45)
CREATE d2 AS Dog    // Second Dog object
d2 ← new Dog("Dory", 37)
```

// Write the single statement to make the first Dog eat (an arbitrary amount of food)

```
d1.eat(30)
```

// Write the two statements to make both Dogs bark

```
d1.bark()
d2.bark()
```

// Write the output of making both dogs bark here

```
Bruno, 75
Dory, 37
```

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Extra credit (+1 pt): Draw something.