**CSC 130 – Exam 2**

**Multiple choice questions – 5 points each**

* 1. The looping mechanism that always executes at least once is the do … while statement.
     1. if…else
     2. do…while
     3. while
     4. for
  2. When the number of repetitions are known in advance, you should use a For statement.
     1. while
     2. do…while
     3. for
     4. None of the above
  3. A Break statement terminates the current iteration of a loop.
     1. Break
     2. Continue
     3. Switch
     4. Assert
  4. Common loop errors are:
     1. Off-by-one
     2. Infinite loops
     3. Both a and b
     4. None of the above
  5. Good debugging techniques include:
     1. Inserting output statements in your program.
     2. Tracing variables
     3. Using an IDE debugger
     4. All of the above
  6. The new operator:
     1. allocates memory
     2. is used to create an object of a class
     3. associates an object with a variable that names it.
     4. All of the above.
  7. A method that performs some action other than returning a value is called a void method.
     1. null
     2. void
     3. public
     4. private
  8. The body of a method that returns a value must contain at least one return statement.
     1. void
     2. invocation
     3. thows
     4. return
  9. Two methods that are expected to be in all Java classes are:
     1. getName and setName
     2. toString and equals
     3. compareTo and charAt
     4. toLowerCase and toUpperCase
  10. A program whose only task is to test a method is called a:
      1. driver program
      2. stub
      3. bottom-up test
      4. recursive method
  11. A set method is:
      1. an accessor method
      2. a mutator method
      3. a recursive method
      4. none of the above
  12. What is the correct expression for accessing the 5th element in an array named colors?
      1. colors[3]
      2. colors[4]
      3. colors[5]
      4. colors[6]
  13. Consider the following array:

|  |  |
| --- | --- |
| myArray[0] | 7 |
| myArray[1] | 9 |
| myArray[2] | -3 |
| myArray[3] | 6 |
| myArray[4] | 1 |
| myArray[5] | -1 |

What is the value of myArray[myArray[1] – myArray[0]]

* + 1. 7
    2. 9
    3. -3
    4. 6

myArray[1] => 9 myArray[0] => 7 9-7=2 myArray[2] => -3

* 1. The correct syntax for accessing the length of an array named Numbers is:
     1. Numbers.length()
     2. Numbers.length
     3. both A and B
     4. none of the above
  2. Which of the following initializer lists correctly initializes the indexed variables of an array named myDoubles?
     1. double myDoubles[double] = {0.0, 1.0, 1.5, 2.0, 2.5};
     2. double myDoubles[5] = new double(0.0, 1.0, 1.5, 2.0, 2.5);
     3. double[] myDoubles = {0.0, 1.0, 1.5, 2.0, 2.5};
     4. array myDoubles[double] = {0.0, 1.0, 1.5, 2.0, 2.5};
  3. The base type of an array may be all of the following **but**:
     1. string
     2. boolean
     3. long
     4. all of these may be a base type of an array.
  4. The correct syntax for passing an array as an argument in a method is:
     1. a[]
     2. a()
     3. a
     4. a[0]..a[a.length]
  5. Java provides a looping mechanism for objects of a collection. This looping mechanism is called a \_\_\_\_\_\_\_\_\_\_ loop.
     1. While
     2. For
     3. For each
     4. All of the above

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* 1. The name of the sorting algorithm that locates the smallest unsorted value in an array and places it in the next sorted position of the array is called:
     1. bubble sort
     2. merge sort
     3. radix sort
     4. selection sort

The only sort we did in class

* 1. A \_\_\_\_\_\_\_\_ loop is a good way to step through the elements of an array and perform some program action on each indexed variable.
     1. while
     2. do…while
     3. for
     4. all of the above

**Short Answers Questions (10 points each)**

* 1. Write Java code that uses a do…while loop that prints even numbers from 2 through 10.

|  |  |
| --- | --- |
| int x = 1;  do  {  if(x%2==0)  {  System.out.println(x + "\t");  }  x++;  } while (x <= 10); |  |

* 1. Write Java code that uses a while loop to print even numbers from 2 through 10.

|  |  |
| --- | --- |
| int x = 1;  while (x <= 10)  {  if(x%2==0)  {  System.*out*.println(x + "\t");  }  x++;  } |  |

* 1. What is a sentinel value and how is it used?

A sentinel value is an explicit value that ends a loop. It would have to be something unique. For example we could have do … while loop that reads the user’s input and populates an array. We could use Q as a sentinel value. If the user enters Q we end the loop.

* 1. Write Java code that uses a for statement to sum the numbers from 1 through 50. Display the total sum to the console.

|  |  |
| --- | --- |
| int sum = 0;  for (int x = 0; x < 51 ; x++)  {  sum = sum + x;  }  System.out.println("Sum of all numbers from 1 to 50 is:\t" + sum); |  |

* 1. What is the output of the following code segment?

**public** **static** **void** main(String[] args)

{

**int** x = 5;

System.out.println("The value of x is:" + x);

**while**(x > 0)

{

x++;

}

System.out.println("The value of x is:" + x);

}

First it prints a line that says the value of x is: 5

Next it goes into an infinite loop. X will always be greater than 0 so the loop never ends. But because the second print statement is outside the loop there will be no indication on the console.

Write a method called power the computes xn where x and n and positive integers. The method has two integer parameters and returns a value of type long.

|  |
| --- |
| public static long power(int base , int toPower)  {  int x = base;  int n = toPower;  long answer = 1;  for (int y = 0; y < n; y++)  {  answer = answer \* x;  }  return answer;  } |

Write a method called isEqual that returns a Boolean value. The method compares two integers for equality.

|  |
| --- |
| public boolean isEqual(int intInput , int intOther)  {  return intInput = = intOther;  } |

Create a class named Appointment that contains instance variables startTime, endTime, dayOfWeek (valid values are Sunday through Saturday), and a date which consists of a month, day and year. All times should be in military time, therefore it is appropriate to use integers to represent the time. Create the appropriate accessor and mutator methods.

|  |
| --- |
| public class Appointment(int startTime, int endTime, String dayofWeek)  {  private int startTime;  private int endTime;  private String dayofWeek;  //getters or accessors  public int getStartTime()  {  return startTime;  }  public int getEndTime()  {  return endTime;  }  public int getDayofWeek()  {  return dayofWeek;  }  //setters or mutators  public void (int startTime)  {  this.startTime = startTime;  }  public void (int endTime)  {  this.endTime = endTime;  }  public void (String dayofWeek)  {  this.dayofWeek = dayofWeek;  }  } |

Write a complete Java console application that prompts the user for a series of quiz scores. The user should type -1 to signify that the input of quiz scores is complete. Your program should then average the scores and display the result back to the user.

|  |
| --- |
| import java.util.Scanner;  public class finalTest7  {  //- declare the main method        public static void main (String[] args)  {  //29) Write a complete Java console application that prompts the user for a series of quiz scores.  //The user should type -1 to signify that the input of quiz scores is complete.  //Your program should then average the scores and display the result back to the user.    Scanner keyboard = new Scanner(System.in);  System.out.print("I can average out you quizes. ");  int dataInput = 0;  int sum = 0;  int counter = 0;  do  {  System.out.print("Please enter a test score. Enter -1 to end data input. ");  dataInput = keyboard.nextInt();  if(dataInput > 0)  {  sum = sum + dataInput;  counter++;  }    }while (dataInput > -1);  int average = sum / counter;  System.out.println("The average of the scores you entered is: " + average + " conter " + counter + " sum " + sum);  }  } |
|  |

Declare and create a 10 x 10 multidimensional array of doubles.

Initialize the array created in number 11 above to -1.0.

|  |
| --- |
| import java.util.Scanner;  public class finalTest8  {  //- declare the main method        public static void main (String[] args)  {  //30 Declare and create a 10 x 10 multidimensional array of doubles.  // Initialize the array created in number 11 above to -1.0.    double[][] table = new double[10][10];  for (int row = 0 ; row < 10; row++)  {  for (int column = 0 ; column < 10; column++)  {  table[row][column] = -1.0;  }  }  for (int row = 0 ; row < 10; row++)  {  for (int column = 0 ; column < 10; column++)  {  System.out.print(table[row][column] + " ");  }  System.out.print("\n");  }  }  } |
|  |