Midterm 1

1. [7 points] Complete the code below to achieve the expected result.

Expected Result:

6.00 3.00 1.50 0.75 0.38 0.19

Code:

double num = 6.0;

for (int i = 1; i<=6; i++) {

/\*

Your code goes here

\*/

}

2. [7 points] What will be the output of the following code?

|  |
| --- |
| for ( i=0; i<10; i++) {  if (i > 6)  continue; } System.out.println(i); |

A. 6

B. 7

C. 10

D. 11

E. Compilation Fails

3. [7 points] Write code that prompts the user for 3 integer values, calculate the average and outputs exactly the following:



4. [7 points]

a. Name 3 types of modifiers used in a method header, provide examples of each, and explain how each are used

b. Name 5 primitive data types

5 [8 points] a. What is the output of x at A, B, and C

x = \_\_ at A

x = \_\_ at B

x = \_\_ at C

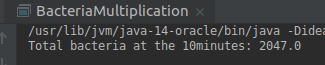
|  |
| --- |
| public class Increment {   public static void main(String[] args) {  int x = 1;  System.out.println("Before the call, x is " + x);// A  increment(x);  System.out.println("After the call, x is " + x); // B  }   public static void increment(int n) {  n++;  System.out.println("n inside the method is " + n); // C  } } |

5b. How would you modify the above code so that x is increment by 1 at B

6. [7 points] We have a bacteria, the bacteria splits into 2, every minute. You can express the number of bacteria created in a series of number 1, 2, 4, 8, 16, etc. At the start, the bacteria count is 1, the 2nd minute the 1 bacteria splits into 2 so the sum is 3 (i.e. 2+1), the 3rd minute, the 2 will split again and total the count is 4 + 2 + 1, etc.

Please use a loop and a Math function to get the sum of all the bacteria after 1 hour.

Example output

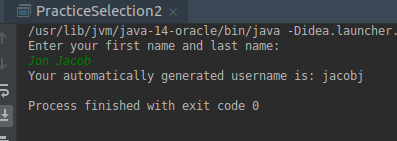


7. [7 points] Complete the following code to generate a username that is constructed out of last name and first letter of the last name.

We have prompted the user to enter their First Name and Last Name, for example Jon Jacob.

* Save an automatically generated username in a String variable that is compiled by concatenating the last name first then the first character of the first name, and all will be in lower case. So an entry from the user of “Jon Jacob”, will have a username automatically generated as “jacobj”
* Print out the user name to the console as “Your automatically generated username is jacobj”

|  |
| --- |
| Scanner scan = new Scanner(System.in);  System.out.println("Enter your first name and last name, separated by a space: ");  String first = scan.next();  String last = scan.next();  /\*  Write your code here  \*/ |



8. [7 points]

a. Each method in a class must have a different name. True/False?

b. What is method overloading?

9. [7 points] What are the values of DAYS\_IN\_WEEK for each row number?

1 final int DAYS\_IN\_WEEK = 7;

2 DAYS\_IN\_WEEK += 7;

3 System.out.print(DAYS\_IN\_WEEK + 7);

10. Please trace the following values for the below program and identify the data type

a. length at row #2 : value \_\_ datatype is \_\_\_

b. temp at row # 7 when (isDigit(temp)) evaluates to true : value \_\_ datatype is \_\_\_

c. username.substring(i) at row # 8: value \_\_ datatype is \_\_\_

d. i at row #8: value \_\_ datatype is \_\_\_

e. userDigit at row#12: value \_\_ datatype is \_\_\_

|  |
| --- |
| 1 String username = "monalisa55"; 2 int length = username.length(); 3 char temp; 4 int userDigit=0; 5 for (int i = 0; i< length; i++){ 6 temp = username.charAt(i); 7 if (isDigit(temp)){ 8 userDigit = Integer.parseInt((username.substring(i))); 9 break; 10 } 11 } 12 System.out.println(userDigit); |
|  |

11.[7 points] How would you modify this code into a do-while loop?

|  |
| --- |
| System.out.println("Enter your jokes or enter "q" to quit:") String input = scan.nextLine(); // say the user enters 6 System.out.println("You entered :" + input);  while (input != "q" ) {  System.out.println("Enter more jokes or enter "q" to quit:")  input = scan.nextLine();  System.out.println("You entered :" + input);  } System.out.println("Thank you for all your jokes"); |

12. [7 points] Please write the method header that would output the following if main contains the following code:

|  |
| --- |
| public static void main(String[] args) {   String hi = "Hi!";  String bye = "Bye!";   getGreeting(hi,bye,1);  System.out.println();  getGreeting(hi,bye,5);   } |

Output

|  |
| --- |
| Again 1 time  Hi!  Bye!  Again 5 times  Hi!  Bye!  Hi!  Bye!  Hi!  Bye!  Hi!  Bye!  Hi!  Bye! |

13. [7 points]

a. Please explain with examples what is the difference between high level programming language and low level programming language?

b. Java is a low level language , True or False?

14. [8 points] Identify the errors in this program and explain your rationale

a. logic error(s) on row #

row # .. rationale :

row # .. rationale :

b. syntax error(s) on row #

row # .. rationale :

row # .. rationale :

|  |
| --- |
| 1 System.out.println("Enter your written exam score" );  2 scan.nextInt();  // if smaller than 0 then assign to 0 // if larger than 500 assign to 500  3 int scoreMax = 500; 4 int scoreMin = 0;  5 if (writtenScore > scoreMin ){ 6 writtenScore = 0 ; 7 System.out.println("Your written score is rewritten to : " , writtenScore );  8 }else if (writtenScore < scoreMax ){ 9 writtenScore = 500 ; 10 System.out.printf("Your written score is rewritten to: $d" , writtenScore );  11 }// if score entered is between 0 and 500 12 else { 13 System.out.println("Your written score is " + writtenScore); } |

c. Please rewrite the code and fix the errors you’ve found