University of Engineering & Management, Kolkata

Course: B.Tech. CSE / CSE (AIML) / CSE (IOT-CYS-BCT) / CSBS

Semester: 3rd

Paper Name: IT Workshop Practical

Paper Code: PCC-CS392

Assignment List

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Assignment No 1

1. Write a Java Program to Print "HELLO JAVA".
2. Write a Java Program to add two numbers by declaring variables value.
3. Write a Java Program to calculate factorial value of a declared variable.
4. Write a Java Program to calculate factorial value of a declared variable by creating separate method for factorial segment.
5. Write a Java Program to calculate factorial value of a declared variable by creating separate class and method for factorial segment.
6. Write a Java Program to calculate factorial value of a variable by taking input from command line.
7. Write a Java Program to display whether a number is odd or even
8. Write a Java program to find maximum of three numbers.
9. Write a Java program to swap two numbers.
10. Write a Java program to check whether a year is leap year or not.
11. Write a Java program for following grading system.

    Note: Percentage>=90% : Grade A

    Percentage>=80% : Grade B

    Percentage>=70% : Grade C

    Percentage>=60% : Grade D

    Percentage>=40% : Grade E

    Percentage<40% : Grade F
12. Write a Java program to check whether a number is divisible by 5 or not.

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Assignment No 2

1. Write a java program to create a simple array and access array element.
2. Write a java program to create 2D array and access the array element.
3. Write a Java program to find the sum of even numbers in an integer array.
4. Implementation of default, no argument Constructor.
5. Implementation of parameterized constructor.
6. Implementation of returning the value from the caller method.
7. Implementation of call by value and call by reference.
8. Write a java program to implement BufferedReader class.
9. Write a java program to take input from keyboard using Scanner class.
10. Write a Java program to reverse a number.
11. Write a Java program to check whether a number is palindrome or not.
12. Write a Java program to check whether a number is prime or not.
13. Write a Java program to convert a Binary Number to Decimal and Decimal to Binary.
14. Write a Java program to check whether a given number is Armstrong Number or not.
15. Write java codes to implement the followings –

    Basic string handling concepts- Concept of mutable and immutable string, Methods of String class-charAt(), compareTo(), equals(), equalsIgnoreCase(), indexOf(), length() , substring().; toCharArray(), toLowerCase(), toString(), toUpperCase() , trim() , valueOf() methods, Methods of Stringbuffer class: append(), capacity(), charAt(), delete(), deleteCharAt().; ensureCapacity(), getChars(), indexOf(), insert(), length(), setCharAt(), setLength(), substring(), toString().

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Assignment No 3

1. Implementation of method overloading with respect to parameter number, parameter data type.
2. Write a java program to implement of constructor overloading.
3. Implementation of this keyword to invoke current class method.
4. Implementation of this keyword to invoke current class constructor.
5. Implementation of this keyword to pass as an argument in the method.
6. Implementation of this keyword to pass as argument in the constructor call.
7. Implement - this keyword can be used to return current class instance.
8. Prove that this keyword refers to the current class instance variable.
9. Implementation of this keyword as local variable suppressor.
10. Create a general class ThreeDObject and derive the classes Box, Cube, Cylinder and Cone from it. The class ThreeDObject has methods wholeSurfaceArea ( ) and volume ( ). Override these two methods in each of the derived classes to calculate the volume and whole surface area of each type of three-dimensional objects. The dimensions of the objects are to be taken from the users and passed through the respective constructors of each derived class. Write a main method to test these classes.

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Assignment No 4

1. Write a java program to implement the static keyword in java.
2. Write a java program to implement the static method in java.
3. Write a java program to implement the single inheritance in java.
4. Write a java program to implement the hierarchical inheritance in java.
5. Write a java program to implement the multilevel inheritance in java.
6. Multiple inheritance does not support in java – justify.
7. Implementation of method overriding in java.
8. Implementation of dynamic method dispatch in java.
9. Write a java program to stop method overriding.
10. Create a "circle" class & a "point" class. The coordinates of the circle are given and used within the "circle" class as object of the "point" class. Display the area of circle
11. Write a program to define a class Employee to accept emp_id, emp _name, basic_salary from the user and display the gross_salary.
12. Write a program to define a class Fraction having data members numerator and denominator. Initialize three objects using different constructors and display its fractional value.
13. Write a program to define a class Item containing code and price. Accept this data for five objects using array of objects. Display code, price in tabular form and also, display total price of all items.

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Assignment No 5

1. Write a java program to implement the abstraction property.
2. Write a java program to implement interface.
3. Write a java program to implement multiple inheritance with the help of interface.
4. Write a java program to implement the inheritance in interface.
5. Write a java program to implement multiple inheritance using interface.
6. Write a java program to implement super keyword in java.
7. Write a java program to implement super() method without parameter.
8. Write a java program to implement super() method with parameter.
9. Implementation of final keyword before a variable.
10. Implementation of final keyword before a method.
11. Implementation of final keyword before a class.
12. Create an interface called Player. The interface has an abstract method called play() that displays a message describing the meaning of "play" to the class. Create classes called Child, Musician, and Actor that all implement Player. Create an application that demonstrates the use of the classes(UsePlayer.java
13. Create an abstract class Accounts with the following details:
    Data Members: Balance (b) accountNumber (c) accountHoldersName (d) address
    Methods: withdrawl()- abstract , (b) deposit()- abstract , (c) display() to show the balance of the account number
    Create a subclass of this class SavingsAccount and add the following details:
    Data Members: (a) rateOfInterest
    Methods: (a) calculateAount()

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Assignment No 6

1. Write a java program to create package and subpackage.
2. Write a java program to access the methods from package & subpackage.
3. Exception CASE-1: Problem without exception handling

   CASE-2: Exception creates but properly handled

   CASE-3: Exception creates but not handled
4. Write a java program to implement Java Multi catch block
5. Write a java program to implement Java Nested try statement
6. Write a java program to implement the throw keyword.
7. Write a java program to implement the throws keyword.
8. Finally CASE – 1 : Case 1: finally example where exception doesn't occur.

   Case 2: finally example where exception occurs and not handled.

   Case 3: finally example where exception occurs and handled.

9. Create a user-defined exception named CheckArgument to check the number of arguments passed through the command line. If the number of argument is less than 5, throw the CheckArgumentexception,else print the addition of all the five numbers.

10. Consider a Student examination database system that prints the mark sheet of students. Input the following from the command line.
    (a) Student's Name
    (b) Marks in six subjects

    These marks should be between 0 to 50. If the marks are not in the specified range, raise a RangeException, else find the total marks and prints the percentage of the students.

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Assignment No 7

1. Write a java program to create Thread by extending the Thread class.
2. Write a java program to create Thread by implementing the Runnable interface.
3. Write a java program to implement the yield( ) method in thread programming.
4. Write a java program to implement the sleep(n) method in thread programming.
5. Write a java program to implement the suspend( ) & resume( ) method in thread programming.
6. Write a java program to implement the sleep(n) method in thread programming.
7. Create 4 threads with priority 1,3,5,7 respectively. Update a counter in each of the threads for 10 ms. Print the final value of count for each thread.
8. Write a Java Program to Synchronize the Threads Acting on the Same Object. The Synchronized Block in the Program can be Executed by Only One Thread at a Time.
9. Write a Java Program to Check a Thread is Alive or Not.
10. Write a Java Program to Get the Name of a Running Thread.
11. Write a java program to implement JButton Class.
12. Write a java program to implement JTextField Class.
13. Write a java program to implement JPanel Class.
14. Write a java program to implement JMenu Class.
15. Write a java program to implement Chat Frame comprising JFrame, JMenuBar, JMenu, JMenuItem, JPanel, JLabel, JTextField, JButton etc.

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Assignment No 8

Assignments on Matlab

1. Calculate the following:

i. (1/(5^2) + 3/2*pi - 1)^(-3)

ii. 2*pi - pi^0.5

iii. 1 + ½ + 1/2^2 + 1/3^3 + 1/2^4

2. I f u = 1 and v = 3 then calculate

i. (4*u) / (3*v)

ii. (2*v^-2) / (u+v)^2

iii. v^3/(v^3 - u^3)

iv. (4/3)*pi*v^2

v. u*sqrt(v) + 1

vi. log10((v+u) / (v-u))

3. Create a script file for the above problem.

4. Create a script file to calculate the approximate circumference of an ellipse with axes a = 5 and b = 10

5. Create a script file to calculate the area and circumference of a circle if radius r, and then also calculate the volume and surface area of sphere.

6. Analysis about Plot- i) Creating simple plots ii) Adding titles, axis labels, and annotations iii) Multiple data sets in one plot

7. Matrix generation – i) Entering a matrix ii) Matrix indexing iii) Creating a sub-matrix iv) Deleting row or column v) Transposing a matrix vi) Matrix generators

8. Basic command to create a function- : i) Add any two numbers ii) Multiply two numbers iii) Transform years in days iv) receives a vector and display all the elements of this vector
9. Create a script for line specifications
10. Create a script for disp() and fprintf() operation
11. Create a script for Input values from keyboard
12. Create a script for system clock information
13. Create a script for linear vector spacing
14. Create a script for logarithmic vector spacing
15. Create a script to plot a line on 3D plane
16. Create a script for plotting the values in logarithmic domain
17. Create a script for displaying of multiple figure in single iteration
18. Create a script for polar line plotting operation
19. Create a script to show the area of a circle as string format using input concept
20. Create a MATLAB Script to convert an input temperature from degrees Fahrenheit to an output temperature in kelvin. Also use a subplot to convert the output in centigrade domain as well.

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Assignment No 9

Assignments on Web Technologies

1. Write an HTML program to create a web page to display the following:
   a. Text field to enter Name, Nationality, Age, Phone No, Address
   b. Radio button to enter Vaccination Status (Received 1st Dose Only/Received 2nd Dose/Not Vaccinated)
   c. Check box to enter Allergies if known any with fields like Food, Dust, Medicine etc.
   d. One drop down list for stream (B.Tech, BCA, M. Tech, MCA) and another drop down list for branch(CSE, ECE, ME, CIVIL etc.)
   e. HTML table to display vaccination status of family members with member name, relation, age, date of vaccination etc.

2. Design your web page with HTML for building resume -
   a. Add a heading. (Example – Your name)
   b. Add a title. (Example – Contact Details)
   c. Start the <body> section.
   d. Add text describing academic credentials using <H1> and </H1>tags
   e. Add a horizontal line
   f. Add text describing work experience using <H2> and </H2> tags
   g. Add another horizontal line.
   h. Insert an image to your web page (the image should be referred with just the filename and NOT the entire pathname to the file).

3. Design a web page for your food habit details using HTML with the following -

   a. Add a heading (Example – Your name).
   b. Add a title. (Example – Contact Details)
   c. Start the <body>section. (Example – Describe your favorite food)
   d. Create an unordered list with favorite soft drinks (Example – Pepsi, coke)
   e. Create an ordered list with favorite dessert items (Example – pastry, ice-cream)
   f. Use various bullet styles
   g. Created nested lists to include main course dishes

4. Design your web page with HTML to display your reading habits–

a. Add a heading (Example - Your Name).
b. Add a title. (Example – Contact Details)
c. Start the <body>section.
d. Start a new paragraph. (Example – To describe your favourite books)
e. Start another paragraph (Example – To describe your favourite writers)
e. Create Hyperlinks to another URL. (Example – To take to the Wikipedia biography pages of the writers)

5. Write an HTML program to create a web page to display the following:
a. Text field to enter Name, Nationality, Age, Phone No, Address
b. Radio button to enter Vaccination Status (Received 1st Dose Only/Received 2nd Dose/Not Vaccinated)
c. Check box to enter Allergies if known any with fields like Food, Dust, Medicine etc.
d. One drop down list for stream (B.Tech, BCA, M. Tech, MCA) and another drop down list for branch(CSE, ECE, ME, CIVIL etc.)
e. HTML table to display vaccination status of family members with member name, relation, age, date of vaccination etc.

6. Write a JavaScript program to find out the roots of a quadratic equation and display the roots.

7. Develop a JavaScript program to display a message “HI! GOOD MORNING”. When a page is loaded and display a message “THANKS FOR VISITING OUR WEB PAGE” when a page is un-loaded.

8. Write a JavaScript program to calculate product of two numbers. Enter the numbers in textboxes and return the product as an alert/popup.

9. Write a JavaScript to get the number of Fibonacci elements to be generated from the user using prompt () and display the Fibonacci series using a popup.

10. Write a JavaScript program to convert a given string to lowercase using toLowerCase().

11. Write a JavaScript program to validate an email ID.

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Assignment No 10

Assignment on AR-VR

1. Adding colors to Game Object
2. Adding textures to Game Object
3. Create one AR Greeting Card
4. Moving Rotating Scaling Game Object inside Unity
5. Creating virtual button
6. Creating ground plane scene

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Assignment No 11

Assignment on Android

1. Build an android app to print “Hello World”
2. Build an android app to make a calculator
3. Build an android app to design a form to take input from user.
4. Work on Android - User Interface
5. Drag and Drop using DragLinearLayout in Android
6. Creating Splash screen using handler in Android
7. Groupwise Android project.