

Backend assignment

Software Engineering Assignment

MODULE: 1

SE – Overview of IT Industry

1. What is software? What is software engineering?
2. Explain types of software
3. What is SDLC? Explain each phase of SDLC
4. What is DFD? Create a DFD diagram on Flipkart
5. What is Flow chart? Create a flowchart to make addition of two numbers
6. What is Use case Diagram? Create a use-case on bill payment on paytm.

MODULE: 2

SE – HTML and CSS

1. Define the terms: Website, Webpage, Web browser, Web server, HTML, CSS
2. Create a webpage to show “This is my first HTML page”
3. Display top 10 IT companies list in html webpage
4. Create a dropdown list
5. Create a Table Of college Management system using row span & colspan.
6. Create below table using HTML table tags

European Roulette													
0	3	6	9	12	15	18	21	24	27	30	33	36	2to1
	2	5	8	11	14	17	20	23	26	29	32	35	2to1
	1	4	7	10	13	16	19	22	25	28	31	34	2to1
	1st12				2nd12				3rd12				
	1to18		EVEN						ODD		19to36		

CSS3 Browser Support (latest browser versions)					
CSS Property	Internet Explorer	FireFox	Chrome	Safari	Opera
Border Radius	YES	YES	YES	YES	YES
Box Shadow	YES	YES	YES	YES	YES
CSS Animations	NO	NO	YES	YES	NO

7. Create Registration form using HTML, CSS
8. In how many ways can a CSS be integrated as a web page?
9. Create simple three pages using External CSS, Internal CSS, and Inline CSS.
10. Create below page using HTML CSS

Individual Registration

User Particulars

* Login ID

* Password

* Confirm Password

Personal Particulars

* Salutation <input type="text" value="Select"/>	* First Name <input type="text"/>
Middle Name <input type="text"/>	* Last Name <input type="text"/>
* Resident Status <input type="text" value="Select"/>	* Country <input type="text" value="Select"/>
* Email-Id <input type="text"/>	* Mobile Number <input type="text"/>

Account Particulars

* 15 Digit Account No <input type="text"/>	* Nick Name <input type="text"/>
* Fund Transfer <input type="text" value="Select"/>	

DECLARATION

I have read, understood and hereby agree to the Terms and Conditions in respect of all products and channels.

I understand that any changes in the terms and conditions applicable to this relationship would be made available to me on request at any IOB branches. I confirm that all accounts under this login name are operated singly and in case of joint account operated by either or survivor / anyone or survivor(s) under his/her joint name respectively. I do hereby declare that information furnished in this form is true to the best of my knowledge and belief.

11. Create link-pseudo classes using external css, to format links on the pages.
12. Create a dynamic pseudo class using HTML, CSS

MODULE: 3

SE – Fundamentals of Programming

Topics Covered

Basic Syntax
Data Structures
Variables
Operators

Basic Logic Program

1. Display This Information using printf
 - a. Your Name
 - b. Your Birth date
 - c. Your Age
 - d. Your Address
2. Write a program to make Simple calculator (to make addition, subtraction, multiplication, division and modulo)
3. WAP to Find Area And Circumference of Circle
4. Find Area of Square formula : $a = a^2$
5. Find Area of Cube formula : $a = 6a^2$
6. Find area of Triangle Formula : $A = 1/2 \times b \times h$
7. Find area of Rectangle Formula : $A = wl$
8. Find circumference of Rectangle formula : $C = 4 * a$
9. Find circumference of Triangle formula : $triangle = a + b + c$
10. find the area of a rectangular prism formula : $A = 2(wl + hl + hw)$
11. Find circumference of square formula : $C = 4 * a$
12. Accept number of students from user. I need to give 5 apples to each student. How many apples are required?
13. Find character value from ascii
14. Find ascii value of given number
15. Convert school's name in abbreviated form

16. Convert country's name in abbreviate form
17. Calculate person's insurance premium based on salary
18. Calculate person's Annual salary
19. Calculate compound interest
20. Accept monthly salary from the user and deduct 10% insurance premium, 10% loan installment find out of remaining salary.
21. Accept 2 numbers from user and swap 2 numbers with using 3rd variable and without using 3rd variable
22. Calculate compound interest (Compound Interest formula:
 - a. Formula to calculate compound interest annually is given by:
$$\text{Amount} = P(1 + R/100)^t$$
 - b. Compound Interest = Amount - P
23. WAP to calculate swap 2 numbers with using of multiplication and division.
24. Accept 5 employees name and salary and count average and total salary
25. Accept 5 expense from user and find average of expense
26. Convert temperature Fahrenheit to Celsius
27. Convert days into months
28. Convert years into days and months
29. Convert minutes into seconds and hours
30. WAP to convert years into days and days into years
31. Convert kilometers into meters
32. Accept 2 numbers and find out its sum check it size
33. C Program to Read Integer and Print First Three Powers (N^1 , N^2 , N^3)

Topics Covered

Control statements

Conditional Statements

Conditional Logic Programs:

1. Write a C program to accept two integers and check whether they are equal or not
2. Write a C program to read the value of an integer m and display the value of n is 1 when m is larger than 0, 0 when m is 0 and -1 when m is less than 0
3. WAP to check if the given year is a leap year or not.
4. WAP to make simple calculator (operation include Addition, Subtraction, Multiplication, Division, modulo) using conditional statement
5. Check Number Is Positive or Negative
6. Find the Character Is Vowel or Not
7. Accept marks from user and check pass or fail

8. WAP to accept the height of a person in centimeters and categorize the person according to their height.
9. C Program to Check Uppercase or Lowercase or Digit or Special Character
- 10.WAP to check whether a number is negative, positive or zero.
- 11.WAP to find number is even or odd using ternary operator
- 12.WAP to find maximum number among 3 numbers using ternary operator
- 13.WAP to find minimum number among 3 numbers using ternary operator
- 14.WAP to find the largest of three numbers.
15. Write a C program to determine eligibility for admission to a professional course based on the following criteria
 Eligibility Criteria : Marks in Maths ≥ 65 and Marks in Phy ≥ 55 and Marks in Chem ≥ 50 and Total in all three subject ≥ 190 or Total in Maths and Physics ≥ 140 -----Input the marks obtained in Physics :65 Input the marks obtained in Chemistry :51 Input the marks obtained in Mathematics :72 Total marks of Maths, Physics and Chemistry : 188 Total marks of Maths and Physics : 137 The candidate is not eligible.
16. Write a C program to read temperature in centigrade and display a suitable message according to the temperature state below:
 Temp < 0 then Freezing weather
 Temp 0-10 then Very Cold weather
 Temp 10-20 then Cold weather
 Temp 20-30 then Normal in Temp
 Temp 30-40 then Its Hot
 Temp ≥ 40 then Its Very Hot
17. Write a C program to check whether a triangle can be formed with the given values for the angles.
18. Write a C program to calculate profit and loss on a transaction.
19. Write a program in C to calculate and print the electricity bill of a given customer. The customer ID, name, and unit consumed by the user should be captured from the keyboard to display the total amount to be paid to the customer. The charge are as follow :

20. Unit	21. Charge/unit
22. upto 350	23. @1.20
24. 350 and above but less than 600	25. @1.50
26. 600 and above but less than 800	27. @1.80
28. 800 and above	29. @2.00

30. If bill exceeds Rs. 800 then a surcharge of 18% will be charged and the minimum bill should be of Rs. 256/-
31. Write a program in C to read any Month Number in integer and display the number of days for this month.
32. Write a C program to input basic salary of an employee and calculate its Gross salary according to following:
Basic Salary \leq 10000 : HRA = 20%, DA = 80%
Basic Salary \leq 20000 : HRA = 25%, DA = 90%
Basic Salary $>$ 20000 : HRA = 30%, DA = 95%
33. WAP to input the week number and print week day.
34. Accept month number and display month name
35. Accept the input month number and print number of days in that month.
36. Write a C program to input electricity unit charges and calculate total electricity bill according to the given condition:
For first 50 units Rs. 0.50/unit
For next 100 units Rs. 0.75/unit
For next 100 units Rs. 1.20/unit
For unit above 250 Rs. 1.50/unit
An additional surcharge of 20% is added to the bill
37. WAP to show
- Monday to Sunday using switch case
 - Vowel or Consonant using switch case

Topics Covered

Looping Statements

Conditional Statements

- WAP to print 972 to 897 using for loop
- WAP to accept 5 numbers from user and display all numbers
- WAP to take 10 no. Input from user find out below values
 - How many Even numbers are there
 - How many odd numbers are there
 - Sum of even numbers
 - Sum of odd numbers
- WAP to print table up to given numbers

5. WAP to print factorial of given number
6. WAP to print Fibonacci series up to given numbers
7. WAP to print number in reverse order e.g.: number = 64728 ---> reverse = 82746
8. Write a program to find out the max from given number (E.g., No: -1562
Max number is 6)
9. Write a program make a summation of given number (E.g., 1523 Ans: -11)
10. Write a program you have to make a summation of first and last Digit. (E.g., 1234 Ans: -5)
11. Accept 5 names from user at run time.
12. Program of Armstrong Number in C Using For Loop & While Loop
13. calculate the Factorial of a Given Number using while loop
14. Accept 5 numbers from user and find those numbers factorials
15. Calculate sum of 10 numbers using of while loop
16. Calculate the Sum of Natural Numbers Using the While Loop
17. Calculate 5 numbers from user and calculate number of even and odd using of while loop
18. Write a C Program to Print the Multiplication Table of N
 - i. E.g. $5 * 1 = 5$
 - ii. $5 * 2 = 10$
 1. .
 2. .
 - iii. $5 * 10 = 50$
19. Patterns:

1	A	*	*
1 0	B C	* * *	* *
1 0 1	D E F	* * * * *	* * *
1 0 1 0	G H I J	* * * * * *	* * * *
1 0 1 0 1	K L M N O	* * * * * *	* * * * *
			* * * * *
			* * * * *
			* * * *
			* *
			*

1	A	
2 3	A B	
4 5 6	A B C	
7 8 9 10	A B C D	
11 12 13 14 15	A B C D E	

1	2	3	4	5	6	7	8	9	10
36	37	38	39	40	41	42	43	44	11
35	64	65	66	67	68	69	70	45	12
34	63	84	85	86	87	88	71	46	13
33	62	83	96	97	98	89	72	47	14
32	61	82	95	100	99	90	73	48	15
31	60	81	94	93	92	91	74	49	16
30	59	80	79	78	77	76	75	50	17
29	58	57	56	55	54	53	52	51	18
28	27	26	25	24	23	22	21	20	19

20. WAP program to print below output using for loop

01 02 03 04 05 06 07 08 09 10

11 12 13 14 15 16 17 18 19 20

.....

.....

41 42 43 44 45 46 47 48 49 50

22. Accept 3 numbers from user using while loop and check each numbers palindrome

23. C Program to Reverse a Number Using FOR Loop

Series Program:

24. $1 + 2 + 3 + 4 + 5 + \dots + n$

25. $(1*1) + (2*2) + (3*3) + (4*4) + (5*5) + \dots + (n*n)$

26. $(1) + (1+2) + (1+2+3) + (1+2+3+4) + \dots + (1+2+3+4+\dots+n)$

27. $1/2 - 2/3 + 3/4 - 4/5 + 5/6 \dots \dots \dots n$

28. 1 2 3 6 9 18 27 54...

Topics Covered

Function

Array

1. Write a program to find out the max number from given array using function
2. WAP of Addition, Subtraction, Multiplication and Division using Switch case.(Must Be Menu Driven)
3. WAP to find reverse of string using recursion
4. WAP to find factorial using recursion
5. WAP to take two Array input from user and sort them in ascending or descending order as per user's choice

6. WAP to make addition, Subtraction and multiplication of two matrix using 2-D Array
7. WAP Find out length of string without using inbuilt function
8. WAP to reverse a string and check that the string is palindrome or not
Write a program of structure employee that provides the following
 - a. information -print and display empno, empname, address and age
 - b. Write a program of structure for five employee that provides the following information -print and display empno, empname, address and age
9. WAP to show difference between Structure and Union.
10. WAP to perform Palindrome number using for loop and function
11. WAP to accept 5 numbers from user and display in reverse order using for loop and array
12. WAP to accept 5 students name and store it in array
13. WAP to accept 5 numbers from user and check entered number is even or odd using of array
14. Perform 2D matrix array
15. Store 5 numbers in array and sort it in ascending order
16. Accept 5 numbers from user and perform sum of array
17. WAP to show difference between Structure and Union.

Topics Covered

String

1. Write a program in C to find the length of a string without using library functions.
2. Write a program in C to separate individual characters from a string.
3. Write a program in C to print individual characters of a string in reverse order
4. Write a program in C to count the total number of words in a string.
5. Write a program in C to compare two strings without using string library functions.
6. Write a program in C to count the total number of alphabets, digits and special characters in a string.
7. Write a program in C to copy one string to another string.

8. Write a program in C to count the total number of vowels or consonants in a string.
9. Write a program in C to find the maximum number of characters in a string.
10. Write a program in C to extract a substring from a given string
11. Write a program in C to read a sentence and replace lowercase characters with uppercase and vice versa.
12. Write a program in C to find the number of times a given word 'is' appears in the given string.
13. Write a program in C to remove characters from a string except alphabets.
14. Write a program in C to combine two strings manually
15. Write a program in C to find the largest and smallest words in a string.

MODULE: 4

OOPS Concept

Topics Covered

Basic Concepts of OOP

1. WAP to print “Hello World” using C++
2. What is OOP? List OOP concepts
3. What is the difference between OOP and POP?

Topics Covered

Basic Concepts of OOP

1. WAP to create simple calculator using class
2. Define a class to represent a bank account. Include the following members:
3. Data Member:

- Name of the depositor
- Account Number
- Type of Account
- Balance amount in the account

Member Functions

- To assign values
- To deposited an amount
- To withdraw an amount after checking balance
- To display name and balance

4. Write a C++ program to implement a class called Circle that has private member variables for radius. Include member functions to calculate the circle's area and circumference.
5. Write a C++ program to create a class called Rectangle that has private member variables for length and width. Implement member functions to calculate the rectangle's area and perimeter.
6. Write a C++ program to create a class called Person that has private member variables for name, age and country. Implement member functions to set and get the values of these variables.

Topics Covered

Constructor

Destructor

Encapsulation

Abstraction

1. Write a program to find the multiplication values and the cubic values using inline function
2. Write a program of Addition, Subtraction, Division, Multiplication using constructor.
3. Write a C++ program to create a class called Car that has private member variables for company, model, and year. Implement member functions to get and set these variables.
4. Write a C++ program to implement a class called Bank Account that has private member variables for account number and balance. Include member functions to deposit and withdraw money from the account.
5. Write a C++ program to create a class called Triangle that has private member variables for the lengths of its three sides. Implement member functions to determine if the triangle is equilateral, isosceles, or scalene.
6. Write a C++ program to implement a class called Employee that has private member variables for name, employee ID, and salary. Include member functions to calculate and set salary based on employee performance. Using of constructor
7. Write a C++ program to implement a class called Date that has private member variables for day, month, and year. Include member functions to set and get these variables, as well as to validate if the date is valid.
8. Write a C++ program to implement a class called Student that has private member variables for name, class, roll number, and marks. Include member functions to calculate the grade based on the marks and display the student's information. Accept address from each student implement using of aggregation

Topics Covered

Inheritance

Polymorphism

1. Assume a class cricketer is declared. Declare a derived class batsman from cricketer. Data member of batsman. Total runs, Average runs and best performance. Member functions input data, calculate average runs, Display data. (Single Inheritance)
2. Write a C++ Program to find Area of Rectangle using inheritance
3. Create a class person having members name and age. Derive a class student having member percentage. Derive another class teacher having member salary. Write necessary member function to initialize, read and write data. Write also Main function (Multiple Inheritance)
4. Write a C++ Program display Student Mark sheet using Multiple inheritance
5. Assume that the test results of a batch of students are stored in three different classes. Class Students are storing the roll number. Class Test stores the marks obtained in two subjects and class result contains the total marks obtained in the test. The class result can inherit the details of the marks obtained in the test and roll number of students. (Multilevel Inheritance)
6. Write a C++ Program to show access to Private Public and Protected using Inheritance
7. Write a C++ Program to illustrates the use of Constructors in multilevel inheritance
8. Write a program to Mathematic operation like Addition, Subtraction, Multiplication, Division Of two number using different parameters and Function Overloading
9. Write a Program of Two 1D Matrix Addition using Operator Overloading
10. Write a program to concatenate the two strings using Operator Overloading
11. Write a program to calculate the area of circle, rectangle and triangle using Function Overloading
Rectangle: Area * breadth
Triangle: $\frac{1}{2}$ * Area * breadth
Circle: Pi * Area * Area

12. Write a program to swap the two numbers using friend function without using third variable
13. Write a program to find the max number from given two numbers using friend function

- **Topics Covered**

Templates

1. Write a program of to swap the two values using template
2. Write a program of to sort the array using templates

MODULE: 5 (Database)

- **Topics Covered**

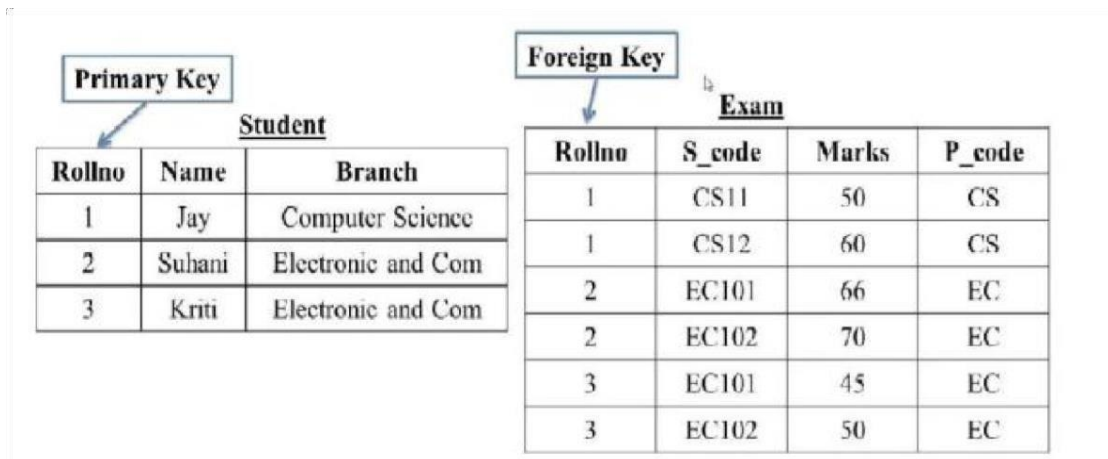
Basics of Database

1. What do you understand By Database
2. What is Normalization?
3. What is Difference between DBMS and RDBMS?
4. What is MF Cod Rule of RDBMS Systems?
5. What do you understand By Data Redundancy?
6. What is DDL Interpreter?
7. What is DML Compiler in SQL?
8. What is SQL Key Constraints writing an Example of SQL Key Constraints
9. What is save Point? How to create a save Point write a Query?
10. What is trigger and how to create a Trigger in SQL?

Topics Covered

SQL Queries

1. Create Table Name : Student and Exam



2. Create table given below: Employee and IncentiveTable

Employee_id	First_name	Last_name	Salary	Joining_date	Department
1	John	Abraham	1000000	01-JAN-13 12.00.00 AM	Banking
2	Michael	Clarke	800000	01-JAN-13 12.00.00 AM	Insurance
3	Roy	Thomas	700000	01-FEB-13 12.00.00 AM	Banking
4	Tom	Jose	600000	01-FEB-13 12.00.00 AM	Insurance
5	Jerry	Pinto	650000	01-FEB-13 12.00.00 AM	Insurance
6	Philip	Mathew	750000	01-JAN-13 12.00.00 AM	Services
7	TestName1	123	650000	01-JAN-13 12.00.00 AM	Services
8	TestName2	Lname%	600000	01-FEB-13 12.00.00 AM	Insurance

Name: Employee

Table Name: Incentive

Employee_ref_id	Incentive_date	Incentive_amount
1	01-FEB-13	5000
2	01-FEB-13	3000
3	01-FEB-13	4000
1	01-JAN-13	4500
2	01-JAN-13	3500

3. Get First_Name from employee table using Tom name “Employee Name”.
4. Get FIRST_NAME, Joining Date, and Salary from employee table.
5. Get all employee details from the employee table order by First_Name

Ascending and Salary descending?

6. Get employee details from employee table whose first name contains 'J'.
7. Get department wise maximum salary from employee table order by
8. salaryascending?
9. Select first_name, incentive amount from employee and incentives table forthose employees who have incentives and incentive amount greater than 3000
10. Create After Insert trigger on Employee table which insert records in viewtable
11. Create table given below: Salesperson and Customer

TABLE-1

TABLE NAME- SALSEPERSON

(PK)SNo	SNAME	CITY	COMM
1001	Peel	London	.12
1002	Serres	San Jose	.13
1004	Motika	London	.11
1007	Rafkin	Barcelona	.15
1003	Axelrod	New York	.1

TABLE-2

TABLE NAME- CUSTOMER

(PK)CNM.	CNAME	CITY	RATING	(FK)SNo
201	Hoffman	London	100	1001
202	Giovanne	Roe	200	1003
203	Liu	San Jose	300	1002
204	Grass	Barcelona	100	1002
206	Clemens	London	300	1007
207	Pereira	Roe	100	1004

12. Retrieve the below data from above table

13. All orders for more than \$1000.

14. Names and cities of all salespeople in London with commission above 0.12

15. All salespeople either in Barcelona or in London

16. All salespeople with commission between 0.10 and 0.12. (Boundary

values should be excluded).

17. All customers excluding those with rating ≤ 100 unless they are located in Rome

18. Write a SQL statement that displays all the information about all salespeople

salesman_id	name	city	commission
5001	James Hoog	New York	0.15
5002	Nail Knite	Paris	0.13
5005	Pit Alex	London	0.11
5006	Mc Lyon	Paris	0.14
5007	Paul Adam	Rome	0.13
5003	Lauson Hen	San Jose	0.12

19. From the following table, write a SQL query to find orders that are delivered by a salesperson with ID. 5001. Return ord_no, ord_date, purch_amt.

Sample table: orders

ord_no	purch_amt	ord_date	customer_id	salesman_id
70001	150.5	2012-10-05	3005	5002
70009	270.65	2012-09-10	3001	5005
70002	65.26	2012-10-05	3002	5001
70004	110.5	2012-08-17	3009	5003
70007	948.5	2012-09-10	3005	5002
70005	2400.6	2012-07-27	3007	5001
70008	5760	2012-09-10	3002	5001
70010	1983.43	2012-10-10	3004	5006
70003	2480.4	2012-10-10	3009	5003
70012	250.45	2012-06-27	3008	5002
70011	75.29	2012-08-17	3003	5007
70013	3045.6	2012-04-25	3002	5001

20. From the following table, write a SQL query to select a range of products whose price is in the range Rs.200 to Rs.600. Begin and end values are included. Return pro_id, pro_name, pro_price, and pro_com.

Sample table: item_mast

PRO_ID	PRO_NAME	PRO_PRICE	PRO_COM
101	Mother Board	3200.00	15
102	Key Board	450.00	16
103	ZIP drive	250.00	14
104	Speaker	550.00	16
105	Monitor	5000.00	11
106	DVD drive	900.00	12
107	CD drive	800.00	12
108	Printer	2600.00	13
109	Refill cartridge	350.00	13
110	Mouse	250.00	12

21. From the following table, write a SQL query to calculate the average price for a manufacturer code of 16. Return avg.

Sample table: item_mast

PRO_ID	PRO_NAME	PRO_PRICE	PRO_COM
101	Mother Board	3200.00	15
102	Key Board	450.00	16
103	ZIP drive	250.00	14
104	Speaker	550.00	16
105	Monitor	5000.00	11
106	DVD drive	900.00	12
107	CD drive	800.00	12
108	Printer	2600.00	13
109	Refill cartridge	350.00	13
110	Mouse	250.00	12

22. From the following table, write a SQL query to display the pro_name as 'Item Name' and pro_price as 'Price in Rs.'

Sample table: item_mast

PRO_ID	PRO_NAME	PRO_PRICE	PRO_COM
101	Mother Board	3200.00	15
102	Key Board	450.00	16
103	ZIP drive	250.00	14
104	Speaker	550.00	16
105	Monitor	5000.00	11
106	DVD drive	900.00	12
107	CD drive	800.00	12
108	Printer	2600.00	13
109	Refill cartridge	350.00	13
110	Mouse	250.00	12

23. From the following table, write a SQL query to find the items whose prices are higher than or equal to \$250. Order the result by product price in descending, then product name in ascending. Return pro_name and pro_price.

Sample table: item_mast

PRO_ID	PRO_NAME	PRO_PRICE	PRO_COM
101	Mother Board	3200.00	15
102	Key Board	450.00	16
103	ZIP drive	250.00	14
104	Speaker	550.00	16
105	Monitor	5000.00	11
106	DVD drive	900.00	12
107	CD drive	800.00	12
108	Printer	2600.00	13
109	Refill cartridge	350.00	13
110	Mouse	250.00	12

24. From the following table, write a SQL query to calculate average price of the items for each company. Return average price and companycode.

Sample table: item_mast

PRO_ID	PRO_NAME	PRO_PRICE	PRO_COM
101	Mother Board	3200.00	15
102	Key Board	450.00	16
103	ZIP drive	250.00	14
104	Speaker	550.00	16
105	Monitor	5000.00	11
106	DVD drive	900.00	12
107	CD drive	800.00	12
108	Printer	2600.00	13
109	Refill cartridge	350.00	13
110	Mouse	250.00	12

Web Designing Assignment

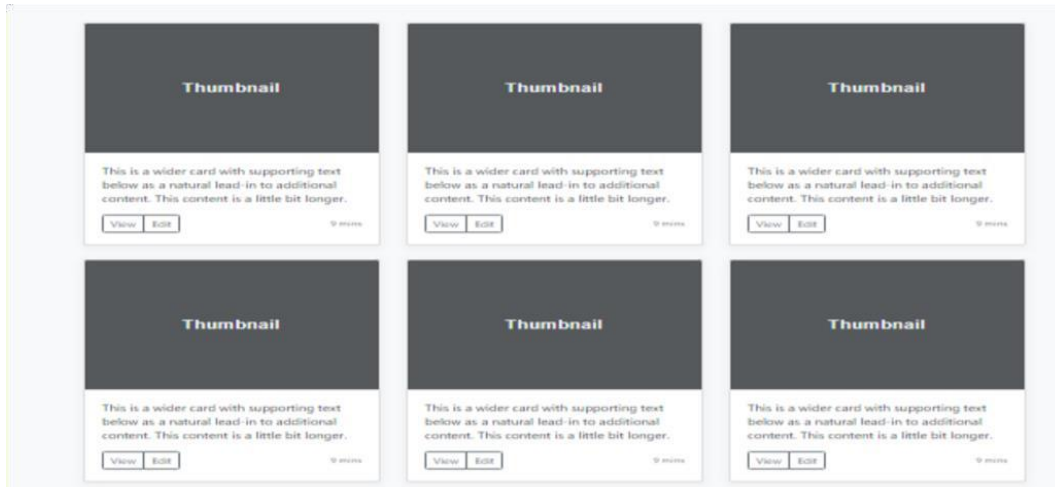
Term-1

Module (HTML) -1

- Are the HTML tags and elements the same thing?
- What are tags and attributes in HTML?
- What are void elements in HTML?
- What are HTML Entities?
- What are different types of lists in HTML?
- What is the 'class' attribute in HTML?
- What is the difference between the 'id' attribute and the 'class' attribute of HTML elements?
- What are the various formatting tags in HTML?
- How is Cell Padding different from Cell Spacing?
- How can we club two or more rows or columns into a single row or column in an HTML table?
- What is the difference between a block-level element and an inline element?
- How to create a Hyperlink in HTML?
- What is the use of an iframe tag?
- What is the use of a span tag? Explain with example?
- How to insert a picture into a background image of a web page?
- How are active links different from normal links?
- What are the different tags to separate sections of text?
- What is SVG?
- What is difference between HTML and XHTML?
- What are logical and physical tags in HTML?

Module (CSS and CSS 3) -2

- What are the benefits of using CSS?
- What are the disadvantages of CSS?
- What is the difference between CSS2 and CSS3?
- Name a few CSS style components
- What do you understand by CSS opacity?
- How can the background color of an element be changed?
- How can image repetition of the backup be controlled?
- What is the use of the background-position property?
- Which property controls the image scroll in the background?
- Why should background and color be used as separate properties?
- How to center block elements using CSS1?
- How to maintain the CSS specifications?
- What are the ways to integrate CSS as a web page?
- What is embedded style sheets?
- What are the external style sheets?
- What are the advantages and disadvantages of using external style sheets?
- What is the meaning of the CSS selector?
- What are the media types allowed by CSS?
- What is the rule set?
- Create Layouts



Module (HTML5) – 3

- What are the new tags added in HTML5?
- How to embed audio and video in a webpage?
- Semantic element in HTML5?
- Canvas and SVG tags

Module (JAVASCRIPT BASIC & DOM) – 4

- What is JavaScript?
- What is the use of isNaN function?
- What is negative Infinity?

- Which company developed JavaScript?
- What are undeclared and undefined variables?
- Write the code for adding new elements dynamically?
- What is the difference between ViewState and SessionState?
- What is === operator?
- How can the style/class of an element be changed?
- How to read and write a file using JavaScript?
- What are all the looping structures in JavaScript?
- How can you convert the string of any base to an integer in JavaScript?
- What is the function of the delete operator?
- What are all the types of Pop up boxes available in JavaScript?
- What is the use of Void (0)?
- How can a page be forced to load another page in JavaScript?
- What are the disadvantages of using innerHTML in JavaScript?

Module (jQuery Basic, Effects & Advanced) – 5

- What is jQuery?
- How to Apply CSS Using JQuery, How to Add Class and Remove Class in JQuery , JQuery Animation?
- How to create slider with animation?

Module (Bootstrap Basic & Advanced) – 6

- What are the advantages of Bootstrap?
- What is a Bootstrap Container, and how does it work?

- What are the default Bootstrap text settings?
- What do you know about the Bootstrap Grid System?
- What is the difference between Bootstrap 4 and Bootstrap 5
- What is a Button Group, and what is the class for a basic Button Group?
- How can you use Bootstrap to make thumbnails?
- In Bootstrap 4, what is flexbox?
- How can one create an alert in Bootstrap?
- What is a bootstrap card and how would you create one?



Java Assignments

Module – 2 (Core Java)

- Write a Java program to Take three numbers from the user and print the greatest number.
- Write a Java program that takes the user to provide a single character from the alphabet. Print Vowel or Consonant, depending on the user input. If the user input is not a letter (between a and z or A and Z), or is a string of length > 1, print an error message.
- Write a Java program that takes a year from user and print whether that year is a leap year or not. B19. Write a program in Java to display the first 10 natural numbers using while loop.
- Write a program in Java to input 5 numbers from keyboard and find their sum and average using for loop.
- Write a program in Java to display the pattern like right angle triangle with a number.

1

12

123

1234

12345

- Write a program in Java to make such a pattern like right angle triangle with number increased by 1 The pattern like:

1

2 3

4 5 6

7 8 9 10

- Write a Java program that reads a positive integer and count the number of digits the number.

Input an integer number less than ten billion: 125463

Number of digits in the number: 6

- Write a Java program to count the letters, spaces, numbers and other characters of an input string.
- Write a Java program to print the ASCII value of a given character.
- Write a Java program that accepts an integer (n) and computes the value of $n+nn+nnn$. Input number: 5

5 + 55 + 555

- Write a Java program to display the system time.
- Write a Java program to print numbers between 1 to 100 which are divisible by 3, 5 and by both.
- W.A.J.P to get the character at the given index within the String. Original String = Tops Technologies! The character at position 0 is T, The character at position 10 is o
- W.A.J.P to concatenate a given string to the end of another string.
- W.A.J.P to compare a given string to the specified character sequence. Comparing topsint.com and topsint.com: true Comparing Topsint.com and topsint.com: false
- W.A.J.P to check whether a given string ends with the contents of another string. "Java Exercises" ends with "se"? False "Java Exercise" ends with "se"? True
- W.A.J.P to check whether a given string starts with the contents of another string. Red is favorite color. Starts with Red? True Orange is also my favorite color. Starts with Red? False I3.
- W.A.J.P to find all interleaving of given strings.

The given strings are: WX YZ

The interleaving strings are: YWZX WYZX YWXZ WXYZ YZWX WYXZ

- W.A.J.P to find the second most frequent character in a given string. The given string is: successes The second most frequent char in the string is: c
- Create a class named 'Print Number' to print various numbers of different data types by creating different methods with the same name 'printn' having a parameter for each data type.
- Create a class to print an integer and a character with two methods having the same name but different sequence of the integer and the character parameters. For

example, if the parameters of the first method are of the form (int n, char c), then that of the second method will be of the form (char c, int n).

- Create a class to print the area of a square and a rectangle. The class has two methods with the same name but different number of parameters. The method for printing area of a rectangle has two parameters which are length and breadth respectively while the other method for printing area of square has one parameter which is side of square.
- Create a class with a method that prints "This is a parent class" and its subclass with another method that prints "This is child class". Now, create an object for each of the class and call 1 - method of parent class by object of parent class 2 - method of child class by object of child class 3 - method of parent class by object of child class
- Create a class named 'Member' having the following members:
 1. Data members
 2. Name
 3. Age
 4. Phone number
 5. Address
 6. Salary

It also has a method named 'printSalary' which prints the salary of the members.

- Create a class named 'Rectangle' with two data members 'length' and 'breadth' and two methods to print the area and perimeter of the rectangle respectively. Its constructor having parameters for length and breadth is used to initialize the length and breadth of the rectangle. Let class 'Square' inherit the 'Rectangle' class with its constructor having a parameter for its side (suppose s) calling the constructor of its parent class as 'super (s, s)'. Print the area and perimeter of a rectangle and a square.
- Write a program to print the area and perimeter of a triangle having sides of 3, 4 and 5 units by creating a class named 'Triangle' without any parameter in its constructor.
- Print the sum, difference and product of two complex numbers by creating a class named 'Complex' with separate methods for each operation whose real and imaginary parts are entered by user.
- Create an abstract class 'Parent' with a method 'message'. It has two subclasses each having a method with the same name 'message' that prints "This is first subclass" and "This is second subclass" respectively. Call the methods 'message' by creating an object for each subclass.
- Create an abstract class 'Bank' with an abstract method 'getBalance'. \$100, \$150 and \$200 are deposited in banks A, B and C respectively. 'BankA', 'BankB' and 'BankC'

are subclasses of class 'Bank', each having a method named 'getBalance'. Call this method by creating an object of each of the three classes.

- We have to calculate the percentage of marks obtained in three subjects (each out of 100) by student A and in four subjects (each out of 100) by student B. Create an abstract class 'Marks' with an abstract method 'getPercentage'. It is inherited by two other classes 'A' and 'B' each having a method with the same name which returns the percentage of the students. The constructor of student A takes the marks in three subjects as its parameters and the marks in four subjects as its parameters for student B. Create an object for each of the two classes and print the percentage of marks for both the students.
- Write a program to print the factorial of a number by defining a method named 'Factorial'. Factorial of any number n is represented by n! And is equal to $1*2*3*...*(n-1)*n$. E.g.-

$$4! = 1*2*3*4 = 24$$

$$3! = 3*2*1 = 6$$

$$2! = 2*1 = 2$$

Also, $1! = 1$

$$0! = 0$$

- We have to calculate the area of a rectangle, a square and a circle. Create an abstract class 'Shape' with three abstract methods namely 'RectangleArea' taking two parameters, 'SquareArea' and 'CircleArea' taking one parameter each. The parameters of 'RectangleArea' are its length and breadth, that of 'SquareArea' is its side and that of 'CircleArea' is its radius. Now create another class 'Area' containing all the three methods 'RectangleArea', 'SquareArea' and 'CircleArea' for printing the area of rectangle, square and circle respectively. Create an object of class 'Area' and call all the three methods. I3. Write a program which will ask the user to enter his/her marks (out of 100). Define a method that will display grades according to the marks entered as below:

Marks Grade

1-100	A
1-90	B
1-80	B
1-70	C
1-60	D
41-50	DD

40 Fail

- Create a class named 'Shape' with a method to print "This is this is shape". Then create two other classes named 'Rectangle', 'Circle' inheriting the Shape class, both having a method to print "This is rectangular shape" and "This is circular shape" respectively. Create a subclass 'Square' of 'Rectangle' having a method to print "Square is a rectangle". Now call the method of 'Shape' and 'Rectangle' class by the object of 'Square' class.
- W.A.J. P to demonstrate try catch block,
- Take two numbers from the user and perform the division operation and handle Arithmetic Exception. O/P- Enter two numbers: 10 0

Exception in thread main java.lang.ArithmeticException:/ by zero

- W.A.J. P to demonstrate multiple catch blocks, (one is to handle divide by zero exception and another one is to handle

ArrayIndexOutOfBoundsException) int a [] =new int [5]; a [5]=30/0;

- W.A.J. P to implement the above program (pro.no-B27) using nesting of try-catch block. try {

try

{//code}

catch (Exception e)

{//code}

catch (Exception e)

{//code}

- W.A.J. P to demonstrate try catch block, take two numbers from the user by Command line argument and perform the division operation and handle Arithmetic

O/P-

Exception in thread main java. Lang. Arithmetic Exception:/ by zero

- W.A.J.P to create the validate method that takes integer value as a parameter. If the age is less than 18, then throw an Arithmetic Exception otherwise print a message welcome to vote.

O/P- Enter your age: 16

Exception in thread main java. Lang. Arithmetic Exception: not valid

- W.A.J.P to create a custom exception if Customer withdraw amount which is greater than account balance then program will show custom exception otherwise amount

will deduct from account balance. Account balance is: 2000 Enter withdraw amount: 2500

Sorry, insufficient balance, you need more 500 Rs. To perform this transaction.

- W.A.J.P to create a class Student with attributes roll no, name, age and course. Initialize values through parameterized constructor. If age of student is not in between 15 and 21 then generate user defined exception "AgeNotWithinRangeException". If name contains numbers or special symbols raise exception "NameNotValidException". Define the two exception classes.

- W.A.J. P to create one thread by implementing Runnable interface in Class.

- W.A.J. P to create one thread by extending Thread class in another Class.
- W.A.J.P to create 2 threads and execute that threads by providing sleep time as 2000ms and check the execution.
- W.A.J.P to start the same Thread twice by calling start () method twice. Test ThreadTwice1 t1=new TestThreadTwice1(); t1.start (); t1.start ();
- W.A.J.P to create 2 threads and make one thread as Daemon Thread by using set Daemon () method of Thread class and check whether the thread is set daemon or not by using is Daemon () method.

```
TestDaemonThread2 t1=new TestDaemonThread2();
```

```
TestDaemonThread2 t2=new TestDaemonThread2(); t1.start();
```

```
t1.setDaemon(true);//will throw exception here t2.start();
```

Write a Java program to create a new array list, add some colors (string) and print out the collection.

- Write a Java program to iterate through all elements in an array list.
- Write a Java program to insert an element into the array list at the first position.
- Write a Java program to retrieve an element (at a specified index) from a given array list.
- Write a Java program to update specific array element by given element.
- Write a Java program to remove the third element from an array list.
- Write a Java program to search an element in an array list.
- Write a Java program to sort a given array list.
- Write a Java program to copy one array list into another.
- Write a Java program to shuffle elements in an array list.
- Write a Java program to append the specified element to the end of a hash set.

- Write a Java program to iterate through all elements in a hash list.
- Write a Java program to get the number of elements in a hash set.
- Write a Java program to associate the specified value with the specified key in a Hash Map.
- Write a Java program to count the number of key-value (size) mappings in a map.
- Write a Java program to reverse elements in an array list.
- Write a Java program to extract a portion of an array list.
- Write a Java program to compare two array lists.
- Write a Java program of swap two elements in an array list.
- Write a Java program to join two array lists.
- Write a Java program to convert a hash set to an array.
- Write a Java program to convert a hash set to a List/Array List.
- Write a Java program to check whether a map contains key-value mappings (empty) or not.
- Write a Java program to increase the size of an array list.
- Write a Java program to replace the second element of an Array List with the specified element.
- Write a Java program to print all the elements of an Array List using the position of the elements.
- Write a Java program to compare two sets and retain elements which are same on both sets.
- Write a Java program to get a collection view of the values contained in this map.

Module –3 (RDBMS & Database Programming With JDBC)

Field	Type	Null	Key	Default
Empno	int(4)	NO	PRI	0
Ename	varchar(10)	YES		(NULL)
Job	varchar(9)	YES		(NULL)
Mgr	int(4)	YES		(NULL)
Hiredate	date	YES		(NULL)
Sal	decimal(7,2)	YES		(NULL)
Comm	decimal(7,2)	YES		(NULL)
Deptno	int(2)	YES	MUL	(NULL)

DEPT TABLE:

Field	Type	Null	Key	Default
Deptno	int(2)	NO	PRI	0
Dname	varchar(14)	YES		(NULL)
Loc	varchar(13)	YES		(NULL)

STUDENT TABLE:

Field	Type	Null	Key	Default
Rno	int(2)	NO	PRI	0
Sname	varchar(14)	YES		(NULL)
City	varchar(20)	YES		(NULL)
State	Varchar(20)	YES		(NULL)

EMP LOG TABLE:

Field	Type	Null	Key	Default
Emp_id	int(5)	NO		(NULL)

Log_date	Date	YES		(NULL)
New_salary	Int(10)	YES		(NULL)
Action	Varchar(20)	YES		(NULL)

DEPT TABLE DATA:

Deptno	dname	loc
10	ACCOUNTING	NEW YORK
20	RESEARCH	DALLAS
30	SALES	CHICAGO
40	OPERATIONS	BOSTON

EMP TABLE DATA:

Empno	ename	job	mgr	hiredate	sal	comm	deptno
7369	SMITH	CLERK	7902	1980-12-17	800.00	(NULL)	20
7499	ALLEN	SALESMAN	7698	1981-02-20	1600.00	300.00	30
7521	WARD	SALESMAN	7698	1981-02-22	1250.00	500.00	30
7566	JONES	MANAGER	7839	1981-04-02	2975.00	(NULL)	20
7654	MARTIN	SALESMAN	7698	1981-09-28	1250.00	1400.00	30
7698	BLAKE	MANAGER	7839	1981-05-01	2850.00	(NULL)	30
7782	CLARK	MANAGER	7839	1981-06-09	2450.00	(NULL)	10
7788	SCOTT	ANALYST	7566	1987-06-11	3000.00	(NULL)	20
7839	KING	PRESIDENT	(NULL)	1981-11-17	5000.00	(NULL)	10
7844	TURNER	SALESMAN	7698	1981-08-09	1500.00	0.00	30
7876	ADAMS	CLERK	7788	1987-07-13	1100.00	(NULL)	20

7900	JAMES	CLERK	7698	1981-03-12	950.00	(NULL)	30
7902	FORD	ANALYST	7566	1981-03-12	3000.00	(NULL)	20
7934	MILLER	CLERK	7782	1982-01-23	1300.00	(NULL)	10

- i. Select unique job from EMP table.
- ii. List the details of the emps in asc order of the Dptnos and desc of Jobs?
- iii. Display all the unique job groups in the descending order?
- iv. List the emps who joined before 1981.
- v. List the Empno, Ename, Sal, Daily sal of all emps in the asc order of Annsal.
- vi. List the Empno, Ename, Sal, Exp of all emps working for Mgr 7369.
- vii. Display all the details of the emps who's Comm. Is more than their Sal?
- viii. List the emps who are either 'CLERK' or 'ANALYST' in the Desc order.
- ix. List the emps Who Annual sal ranging from 22000 and 45000.
- x. List the Enames those are starting with 'S' and with five characters.
- xi. List the emps whose Empno not starting with digit 78.
- xii. List all the Clerks of Deptno 20.
- xiii. List the Emps who are senior to their own MGRS.
- xiv. List the Emps of Deptno 20 who's Jobs are same as Deptno 10.
- xv. List the Emps who's Sal is same as FORD or SMITH in desc order of Sal.
- xvi. List the emps whose jobs same as SMITH or ALLEN.
- xvii. Any jobs of deptno 10 those that are not found in deptno 20.
- xviii. Find the highest sal of EMP table.
- xix. Find details of highest paid employee.
- xx. Find the total sal given to the MGR.
- xxi. List the emps whose names contains 'A'.
- xxii. Find all the emps who earn the minimum Salary for each job wise in ascending order.
- xxiii. List the emps whose sal greater than Blake's sal.
- xxiv. Create view v1 to select ename, job, dname, loc whose deptno are same.
- xxv. Create a procedure with dno as input parameter to fetch ename and dname.
- xxvi. Add column Pin with bigint data type in table student.

xxvii. Modify the student table to change the sname length from 14 to 40. Create trigger to insert data in emp_log table whenever any update of sal in EMP table. You can set action as 'New Salary'.

2. Write swing example with database connectivity to achieve the following.



S.No	ID	Name	Gender	Address	Contact
------	----	------	--------	---------	---------

Module – 4 (Web Technologies in Java)

- Write a Java program to fetch data from web.xml to Servlet using ServletConfig.
- Write a Java program to fetch data from web.xml to Servlet using ServletContext.
- Write a Java program to submit student information (fname, lname, email, mobile, gender, password) using jsp form to servlet. Fetch data at servlet and print all the data in console.
- Write above Java program and print fetched data on another jsp using expression language.
- Write a Java program to fetch all the data from database table and print on jsp page using JSTL SQL tag library.
- Write a Java program to validate jsp form server side.

First Name: Only Alphabets Last Name: Only Alphabets Mobile: Only 10 Numbers
Email: Standard Email Id

Password: Minimum One 1 Upper, Minimum 1 Lower, Minimum 1 Digit, Minimum 1 Special Character from @, #, \$, %, _, & I2. Write CRUD operation using jsp only.

- Write a jsp/servlet CRUD operation for following.

Student:

- a. Int id;(primary key, Auto Increment)
 - b. String fname, lname, email, mobile, gender, password;
 - c. Need to use bootstrap responsive template for the same.
 - d. Use client side validation to for all data input.
 - e. Use regular expression for email for standard email input.
 - f. Use regular expression for password like(Test@123)
 - g. Use server side validation (Filter) same as client side validation.
 - h. All the inserted data should be show in show.jsp with edit and delete functionality.
 - i. Store all the deleted record in table named deleted data.
- Write a Java dynamic application “Message Passing System “using MVC and JDBC.

User:

Int uid ;(primary key, auto increment)

String fname, lname, email, mobile; Message:

Int uid;

String from, to, msg;

- Create one registration form to register user.
 - i. Do client and server side validation. o Use AJAX to register with unique email id.
 - ii. After successful registration confirmation email should be sent to user's email id with one OTP.
 - iii. Verify OTP and then and then allowed to login to the user. o After successful login user can edit their profile.
 - iv. Also one user can send some msg to another user using their email id.
 - v. When another user logged in they are able to see msg sent by a particular user and also can reply.
 - vi. Logout button is there to invalidate session.
 - vii. Also take care when user logged out and press back button on browser then it should be in logged out mode.
- W.A.J.P to insert below data from jsp to MySQL database using “. cfg.cml” and “. hbm.xml” file. Variable id must be primary key and auto increment

Int id

String first name, last name, email, mobile, password, gender

- W.A.J.P using above configuration with annotation and also show login jsp after data insert or registration.
- Write above Java program for after successful registration student can login and if login credentials are correct then show student's home page with his/her detail.
- Write above Java program for after successful login student can able to view and edit his/her profile with logout option. Also need to upload and show student's picture on his/her profile's home page.

All the Questions Below Need to Perform Using Some Bootstrap

Design Templates “

- Write a program to establish One to One Relationship between given 2 classes and perform a CRUD operation.

Student:

Int studentId; String studentName; Address; Address: Int addressId;
String street, city, state, zip code;

- Write a program to establish one to many and Many to One relationship between given 2 classes and perform a CRUD operation.

Cart:

int cartId; double total;
String name; Set<Item> items;

Items:

Int id;
String itemId;

Double itemTotal;

Int quantity;

Cart cart;

- Write a program to establish many to many relationships between given 2 classes and perform a CRUD operation.

Reader:

Int readerId;
String email, firstName, lastName;
Set<Subscription> subscriptions; Subscription: Int subscriptionId;
String subscriptionName; Set<Reader> readers;

Module – 5 (Rest Framework)

- Write a program to demonstrate the setter based dependency injection.
- Write a program to demonstrate the constructor based dependency injection.
- Write a program to demonstrate the object based dependency injection and also implement inner bean concept in your spring beans configuration file.
- Write a program to collect 5 student information using spring collection(List) in spring bean configuration file.

Student:

Int id;

String fname, lname, email, mobile.

- Write a Spring ORM application to demonstrate following things.
 1. Need to use bootstrap template.
 2. There will be 2 modules. User and Admin.
 3. User (id, firstname, lastname, email, mobile, password, gender, profile_pic) have to register to the site. (registration.jsp)
 4. Then user have to login(login.jsp) and can able to edit profile like email, mobile or profile_pic.
 5. Admin can login to the site and able see all the user registered with system and also able to delete profile of a user.

- Write a Spring MVC+ORM application to demonstrate the following

Spring MVC Form

Add User

All Users

#ID	Name	Email	framework	Action
100	mkyong	mkyong@gmail.com	Spring MVC , GWT	Query Update Delete
101	alex	alex@yahoo.com	Spring MVC , PLAY	Query Update Delete
102	joel	joel@gmail.com	Spring MVC , JSF 2	Query Update Delete

things.



1. Add user with validation.
2. On clicking Query display single user data.
3. Update is for changes in user data.
4. Delete data.
5. Use bootstrap for UI part.