

S.E (SOFTWARE ENGINNERING)

Please ensure it is the student's responsibility to complete all assignments on time and as per the lecture schedules. Assignment Kit will help every student gain confidence in the technology as well as get comfort in understanding how industry is working.

The assignments are laid out as per exam and lecture schedules.

Module 1 [Software]

- B1. What is software?
- B2. Types of software
- B3. What is Software Development Methodology?
- B4. What is Design Pattern?

Intermediate

- I1 1. What is the difference between Application software and system software?
- I2 . 2 Explain the SDLC Each face Process
- I3 . 3.Create the DFD,Flow Chart of Login Process of facebook.com

Advance

- A.1 .1 Create the Project Documentation of Assignment Project With all diagrams

MODULE-2 (Web Development)

- B1 Create a web page that shows a message "This is my first HTML page".
- B2.Create Registration Form of bank Using HTML and CSS.
- B3 How to specify the column properties of each column within a colgroup element?
- B4. How to define a container for an external (non-HTML) application?
- B5. How to define an option in a drop-down list?
- B6. How to underline a text in an HTML document?

Intermediate

- I1. Create Tabular Layout using HTML and CSS:
- I2. Create elastic Page Layout.

Individual Registration

User Particulars

* Login ID

* Password

* Confirm Password

Personal Particulars

* Salutation <input type="button" value="Select ▾"/>	* First Name <input type="text"/>
Middle Name <input type="text"/>	* Last Name <input type="text"/>
* Resident Status <input type="button" value="Select ▾"/>	* Country <input type="button" 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="button" 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.

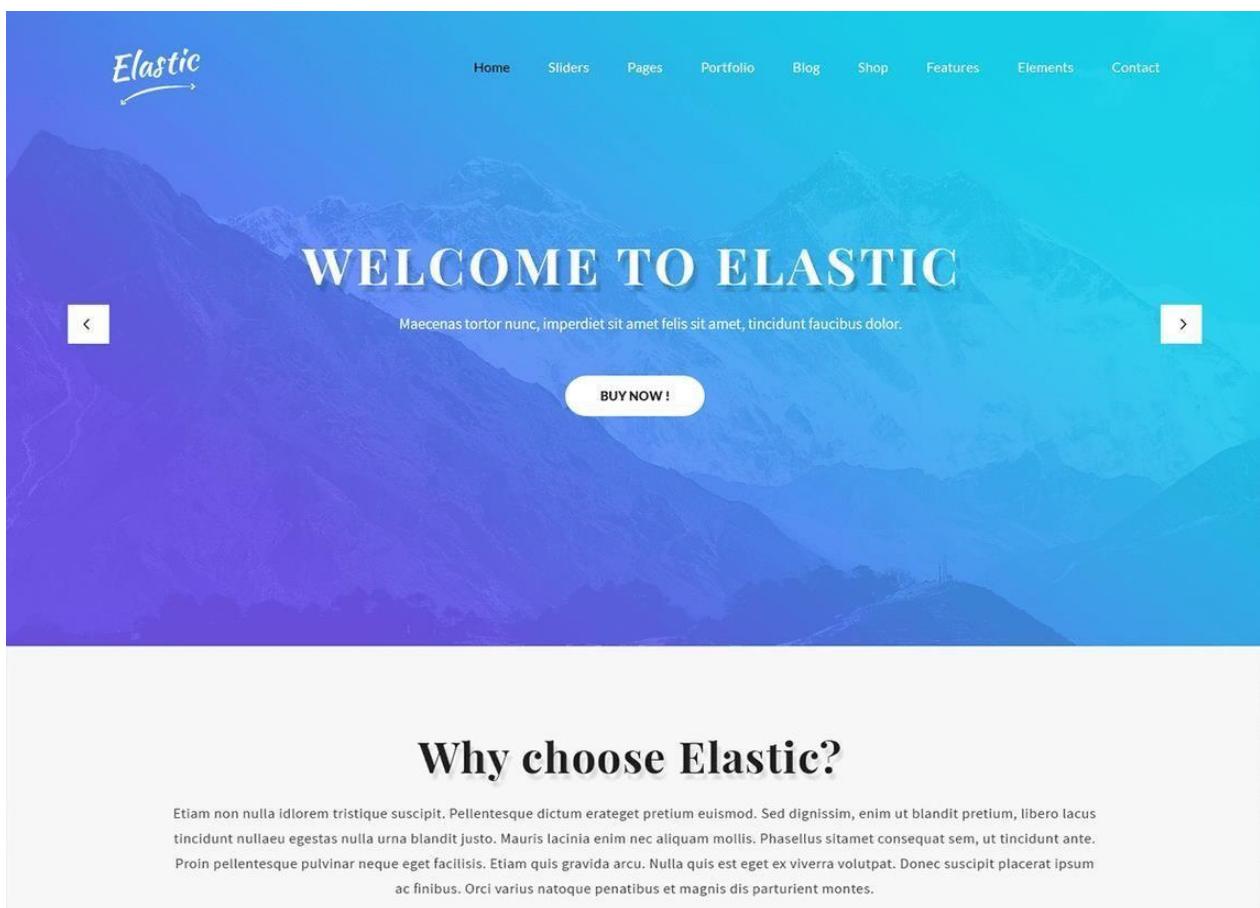
I3. Create simple website template using HTML and CSS it contains: Header, Main Content and Footer.

I4. Create simple three pages using External CSS, Internal CSS, Inline CSS.

I5. In how many ways can a CSS be integrated as a web page?

Advance

A1. Design below page like html page



Elastic

Home Sliders Pages Portfolio Blog Shop Features Elements Contact

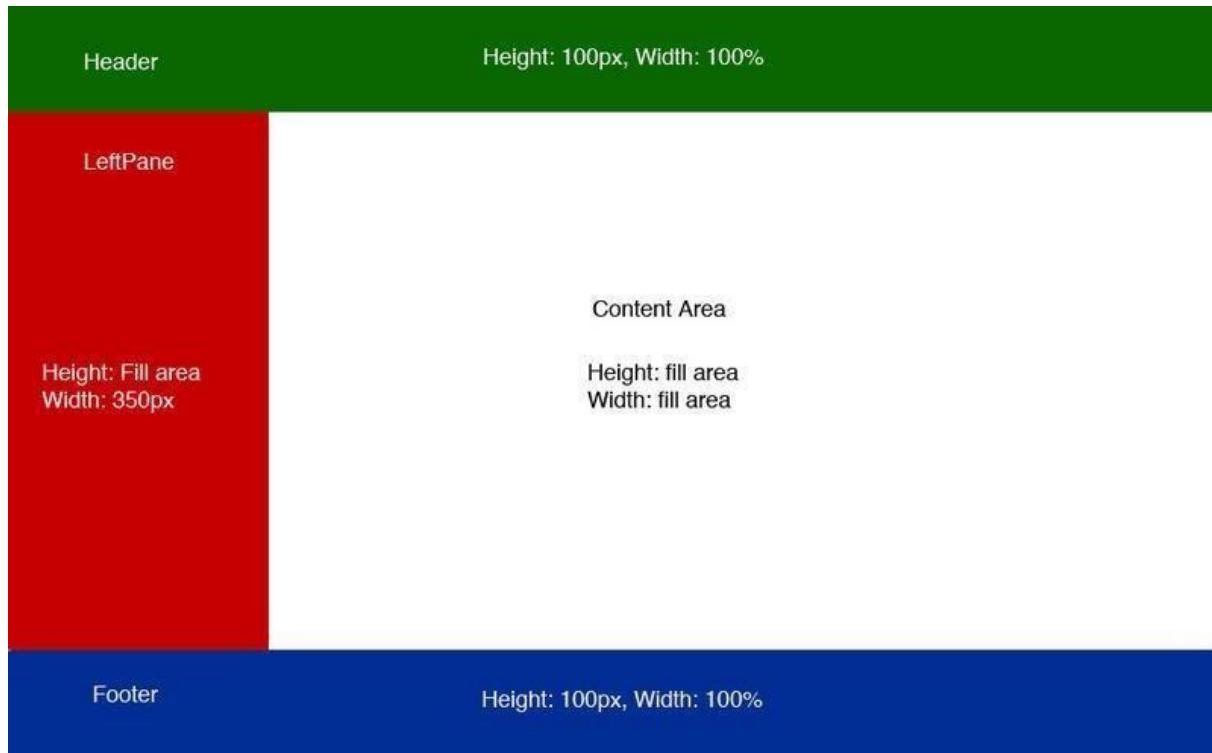
WELCOME TO ELASTIC

Maecenas tortor nunc, imperdiet sit amet felis sit amet, tincidunt faucibus dolor.

BUY NOW!

Why choose Elastic?

Etiam non nulla id lorem tristique suscipit. Pellentesque dictum erat et pretium euismod. Sed dignissim, enim ut blandit pretium, libero lacus tincidunt nullaeu egestas nulla urna blandit justo. Mauris lacinia enim nec aliquam mollis. Phasellus sitamet consequat sem, ut tincidunt ante. Proin pellentesque pulvinar neque eget facilisis. Etiam quis gravida arcu. Nulla quis est eget ex viverra volutpat. Donec suscipit placerat ipsum ac finibus. Orci varius natoque penatibus et magnis dis parturient montes.



A2. Create a List Item on the topic Restaurant.

A3. Create a Table Of college Management system using row span & colspan.



	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
7.30	Wake up	Wake up	Wake up	Wake up	Wake up		
7.30 – 8.15	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast	Wake up	Wake up
8.45 – 9.00	Assembly	Assembly	Assembly	Assembly	Assembly	Breakfast	Breakfast
9.00 – 10.00	Maths [RmA4]	Tutorial [RmA4]	Sub Sup 1 [RmA4]	History [RmA2]	Maths [RmA4]		
10.00 – 10.25	MORNING BREAK						
10.25 – 11.25	Science [RmA4]	ESOL [RmA4]	ESOL [RmA4]	Science [RmA4]	Science [RmA4]		
11.25 – 12.25	Geography [RmA2]	Skills for Life [RmA4]	ESOL [Computer Rm]	Maths [RmA4]	Geography [RmA2]		
12.25 – 1.20	LUNCH						
1.20-1.25	REGISTRATION						
1.25 – 2.25	Skills for Life [RmA4]	Drama and Literature [RmA4]	Drama and Literature [Library]	History [RmA2]	Verbal Reasoning [RmA4]	ACTIVITIES	ALL DAY
2.25 – 3.25	ESOL [RmA4]	ESOL [RmA4]	Sub Sup 2 [A4]	PE/Music/Art [RmA4]	ESOL [RmA4]		
3.25 – 3.50	AFTERNOON BREAK						
3.50 – 4.50	SPORT						
PREP 4.50 – 5.50							
6.30 – 7.00	SUPPER						
7.00 – 7.30	ACTIVITIES	ACTIVITIES	ACTIVITIES	ACTIVITIES	ACTIVITIES	ACTIVITIES	ACTIVITIES
8:15	Bedtime onwards						

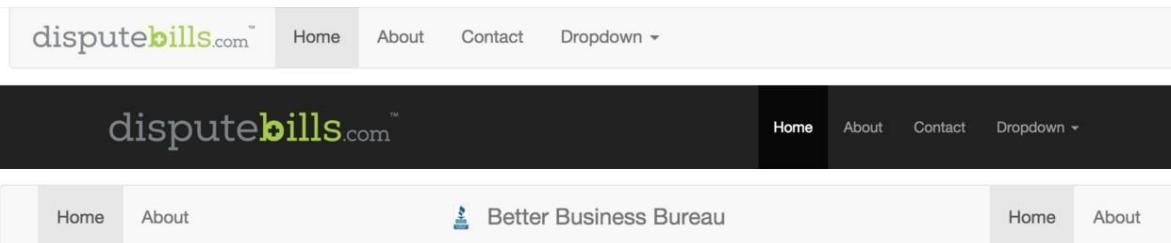
A4. Create link-pseudo classes using external css, to format links on the pages.

A5. Create a division which should not resize on browser resize.

A6. Create one Page Layout

A8.What is the usage of Class selector?

1) Create Navbar like as



The first example shows a light gray header bar with the logo 'disputebills.com' on the left and a dropdown menu on the right. The second example shows a dark header bar with the logo on the left and a dropdown menu on the right. The third example shows a footer bar with links for 'Home' and 'About' on the left, a 'Better Business Bureau' logo in the center, and links for 'Home' and 'About' on the right.

2) Dropdown menu using ul li



Home Profile Messages Courses Admin

Tutorial At Home
Free Tutorial for All

.NET
Java
MSOffice

Word
Excel
Power Point
Access

Basic
Advance



Module- 3 [C Programming]

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 addition, Subtraction, Multiplication and Division of Two Numbers.
3. Write a program to make a square and cube of number.
4. Write a program to find the Area of Circle
5. Write a program to find the Area of Triangle
6. Write a program to find the simple Interest.
7. Write a program to convert temperature from degree centigrade to Fahrenheit.
8. Write a program to calculate sum of 5 subjects & find the percentage.
Subject marks entered by user.
9. Write a Program to show swap of two No's without using third variable.
10. Write a Program to check the given number is Positive, Negative.
11. Write a Program to check the given year is leap year or not.
12. Write a Program to check the given number is prime or not prime.
13. Write a program to find the Max number from the given three number using Nested If
14. Write a program to find the Max number from the given three number using Ternary Operator
15. Write a program to find the Max number from the given three number using Nested If
16. Write a program user enter the 5 subjects mark. You have to make a total and find the percentage.

 percentage > 75 you have to print "Distinction"
 Percentage > 60 and percentage <= 75 you have to print "First class"
 percentage > 50 and percentage <= 60 you have to print "Second class"
 percentage > 35 and percentage <= 50 you have to print "Pass class"
 Otherwise print "Fail"
17. Write Program use switch statement. Display Monday to Sunday
18. Write a Program of Addition, Subtraction ,Multiplication and Division using Switch case.(Must Be Menu Driven)
19. Write a program of to find out the Area of Triangle, Rectangle and Circle using If Condition.(Must Be Menu Driven)
20. Looping Programs
 - a. Write a program to print the 1 to 10 using For loop.

- b. Write a Program to print the 51 to 60 using while loop
- c. write a program to print the 100 to 81 using do ...while loop
- d .write a program you have to find the factorial of given number.
- e. Write a program you have to print the Fibonacci series up to user given number
- f. write a program you have to print the table of given number.
- g. Write a program to print the number in reverse order.
- h .Write a program to find out the max from given number
(E.g. No: -1562 Max number is 6)
- i. Write a program make a summation of given number(E.g. 1523 ans :-11)
- j. Write a program you have to make a summation of first and last Digit.
(E.g. 1234 ans:-5)

18. Pyramid Programs

*	1	1	*
**	12	22	**
***	123	333	***
****	1234	4444	****
*****	12345	55555	*****
1	*	*	1
21	**	* *	1 2
321	***	* * *	1 2 3
4321	****	* * *	1 2 3 4
5432	****	*	1 2 3 4 5
1	*	* * * *	*
1	1	1	1
2 2	2 3	0 1	4 4
3 3 3	4 5 6	1 0 1	9 9 9
4 4 4 4	7 8 9 10	1 0 1 0	16 16 16 16
5 5 5 5 5	11 12 13 14 15	1 0 1 0 1	25 25 25 25 25
*	* * * * *	*****	*
**	* * * *	**** * ***	* *
***	* * *	*** ***	* * *
*** *	* *	** **	* * * *
*** * *	*	* *	* * * *
*** *			* * *
***			* * *

- 19..Write a program to enter a five elements using Array and print it on a screen.
20. Write a program to enter a five elements using Array and print it on a screen.
- 21 . Write a program to enter a ten elements using Array and find out the to count thetotal number of odd and even numbers
22. Write a program to enter a ten elements using Array and make a summation of the numbers and average of summation
23. Write a program to find out the max number from given 10 elements of array.
24. Write a program to sort the array of 5 elements
25. Write a program to find out the second smallest number from the array.
26. Write a Program of find the element of given position from the array
27. Write a program to print the Matrix using 2-D Array
28. Write a program of two make Addition of two matrix using 2-D Array.
29. Write a program of two make Subtraction of two matrix using 2-D Array.
30. Write a program of Multiplication make Subtraction of two matrix using 2-D Array.
31. Write a program to find out the Max number from given Matrix
32. Write a program to convert the string from uppercase to lowercase and vice versa
33. Write a program to find out the length of given string without using string function
34. write a program to count the total number of word from given string without using string function
35. Write a program to copy string from one string to another string without using string function
36. Write a program to make string reverse and check the given string is palindrome or not without using string function
37. Write a program co concatenate the two string without using string function
38. Write a program to perform addition, subtraction, multiplication and division of two numbers using Function
39. write a program to find out the Square and cube of given number using function
40. Write a program to find out the factorial of given number using function
41. write a program to print the Fibonacci series using function
42. Write a program to find out the max number from given array using function
43. write a program to sort the array using function
44. write a program to print the string in reverse order using function
45. Write a Program of Factorial using Recursive Function
46. Write a Program of Print a number and check the number is palindrome or not using recursive Function
47. Write a Program of Make a string reverse using recursive Function.
- 48 . Write a program of structure employee that provides the following information
 - print and display empno,empname,address and age
49. Write a program of structure for five employee that provides the following information
 - print and display empno,empname,address and age

50. Describe the structure student having rollno and marks of three subjects of five students.

-Write a program to print all the information and total marks and percentage of each student.

51. Write program to make a addition of two number using pointer

52. write a program to swap the two numbers without using third variable using pointer

53. Write a program to concatenate the two string using pointer.

54. Write a program to sort the numbers using pointer and functions

55. Write a program of singly link list (Using Dynamic Memory Allocation)

- To add The elements in link list
- To Remove the elements from link list
- To display the element from the link list

-Write a program to write data in file.

56. Write a program to read data from file.

57. Write a program to read and write data from the file.

58. Write a program to append data into already existed file.

59. Create Macro in program using Preprocessor.

[C++ Programming]

1. Write a program of Fibonacci and factorial using Class

2. Write a program to Addition, Subtraction, Multiplication, and Division of two numbers using Class

3. Write a program of to display a matrix using class

4. Write a program of Addition of two Matrix using Class.

5. Define a class to represent a bank account. Include the following members:

Data Member:

- Name of the depositor
- Account Number
- Type of Account

-Balance amount in the accountMember

Functions

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

6. Define a class to represent a book shop Include the following members:

Data Member:

- Name of Author
- Name of Title
- Name of Price

-Name PublisherMember

Functions

- To Assign Values
- To Display Values

7. Define a class to represent lecture details. Include the following members and the program should handle at least details of 5 lecturer.

Data members

Name of the lecturer
Name of the subject
Name of course
Number of lecturers

Data functions

To assign initial values
To add a lecture details
To display name and lecture details

8. Write a program of to display in this format using class

Roll No	Sub1	Sub2	Sub3	Total	Percentage
1	30	25	45	100	
2	25	20	25	70	
3	20	15	35	70	
4	35	30	40	105	

29. Write a program of Addition, Subtraction, Division, Multiplication using constructor.

30. Write a program of find the simple interest using constructor with dynamic initialization. Make constructor like

Interest (int principal, int year, int rate) Interest
(int principal, int year, float rate = 2.5)

31. Write a program to calculate the area of circle, rectangle and triangle using Function Overloading

Circle: $\pi * \text{Area} * \text{Area}$;
Rectangle: $\text{Area} * \text{breadth}$
Triangle: $\frac{1}{2} * \text{Area} * \text{breadth}$

32. Write a program to find the multiplication values and the cubic values using inline function.

33. Write a program to Mathematic operation like Addition, Subtraction, Multiplication, Division Of two number using different parameters and Function Overloading

34. Write a Program of Two 1D Matrix Addition using Operator Overloading

35. Write a program of to concatenate the two strings using Operator Overloading

36. Write a program of Addition, subtraction and multiplication of two numbers using Binary Operator overloading with switch case.

37. 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)

38. 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)

39. Assume that the test results of a batch of students are stored in three different classes. Class Students are stores 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)

40. Assume that a bank maintains two kinds of accounts for customer, one called as saving account and other as current accounts provides Simple interest and withdraw facilities but no cheque book facility. The current account provides cheque book facility but no interest. Current account holders should maintain a minimum balance and if the balance falls below this level a service charges is imposed

Create a class account that stores customer name, account number and type of account. From this derive classes curr_acc and sav_acct to make them more specific to their requirements. Include necessary member functions in order to achieve the following tasks

- a. Accepts deposit from a customer and update balance.
- b. Display the balance.
- c. Compute and deposit interest.
- d. Permit withdraws and updates the balance.
- e. Check for the minimum balance, impose penalty, necessary and update the balance.

41. Write a program to find the multiplication values and the cubic values using inlinefunction.

42. Write a program to find the max number from given two numbers using friendfunction

43. Write a program to swap the two numbers using friend function

44. Write a program to swap the two numbers using friend function(Not Use of third variable)

45. Write a program to add data in text File.

46. Write a program to read data from text file.

47. Write a program to read and write data in to file.

48. Write a Program to read and write data into file using class Object.

49. Write a program of to swap the two values using templates50. Write a program of to sort the array using templates.

51. create a example of use delete and new operator.

Module – 4[OOPS]

B1	What Is class in Object Oriented Programming Language?
B2	What is an Object in Object Oriented Programming Language?
B3	What Is Difference Between Class And Interface?
B4	What Is Method Overloading in Object Oriented Programming Language?
B5	What Is Data hiding in Object Oriented Programming Language?
B6	What are the differences between abstract classes and interfaces?
B7	What are the Virtual Function in Object Oriented Programming?

B8	What is Constructor in Object Oriented Programming ?
B9	What is Abstract class in Object Oriented Programming?
B10	What is Final Keyword in Object Oriented Programming?
B11	What is Pure Virtual function in Object Oriented Programming?
B12	What are Sealed Modifier in Object Oriented Programming?
B13	What is Dynamic or run time Polymorphism in oops ?
B14	What is Access Modifier in Object Oriented Programming ?
B15	What is Friend Function in Object Oriented Programming?
B16	What is Overriding in Object Oriented Programming?
B17	What is the role of mutable storage class specifier?

Module-5 [Database Fundamentals]

Task-1 SQL Practices

Table Name : Student and Exam

Student			Exam			
Rollno	Name	Branch	Rollno	S_code	Marks	P_code
1	Jay	Computer Science	1	CS11	50	CS
2	Suhani	Electronic and Com	1	CS12	60	CS
3	Kriti	Electronic and Com	2	EC101	66	EC
			2	EC102	70	EC
			3	EC101	45	EC
			3	EC102	50	EC

First Name	Last Name	Address	City	Age
Mickey	Mouse	123 Fantasy Way	Anaheim	73
Bat	Man	321 Cavern Ave	Gotham	54
Wonder	Woman	987 Truth Way	Paradise	39
Donald	Duck	555 Quack Street	Mallard	65
Bugs	Bunny	567 Carrot Street	Rascal	58
Wiley	Coyote	999 Acme Way	Canyon	61
Cat	Woman	234 Purrfect Street	Hairball	32
Tweety	Bird	543	Itotltaw	28

B1	How to Create an Table student write an SQL Query ?
B2	How to Create a Exam table with Foreign key on rollno write a SQL Query ?
B3	What is SQL Key Constraints write an Example of SQL Key Constraints ?
B4	What is SQL View Create a View of Student Table ?
B5	How to Create a Table user write a SQL query ?
B6	What is SQL and How to Create a table with Forign Key ?
B7	What is store Procedure write a query of creating store Procedure ?
B8	What is save Point How to Create a save Point write a Query ?
B9	What is trigger and how to Create a Trigger in SQL ?
B10	What do you understood By Database ?
B11	What is Difference Between DBMS and RDBMS ?
B12	What do you understood By Data Redundancy ?
B13	What is Normalization ?
B14	What is DDL Interpreter ?
B15	What is DML Compiler in SQL ?
B16	What is Database transaction ?
B17	What is Store Procedure in Database ?

B18	What is MF Codd Rule of RDBMS Systems ?
B19	What do You understood by Data Independence in Database?
B20	What are the name of the different data models that are available for database systems ?

Table Name : Employee

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

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

I1	Get First_Name from employee table using alias name “Employee Name”.
I2	Get FIRST_NAME, Joining year, Joining Month and Joining Date from employee table.
I3	Get all employee details from the employee table order by First_Name Ascending and Salary descending.
I4	Get employee details from employee table whose first name contains ‘o’.
I5	Get employee details from employee table whose joining month is “January”.
I6	Get department, total salary with respect to a department from employee table order by total salary descending.
I7	Get department wise maximum salary from employee table order by salary ascending.
I8	Select first_name, incentive amount from employee and incentives table for those employees who have incentives and incentive amount greater than 3000
I9	Select 2nd Highest salary from employee table.
I10	Select first_name, incentive amount from employee and incentives table for

	all employees who got incentives using left join.
I11	Create View OF Employee table in which store first name ,last name and salary only.
I12	Create Procedure to find out department wise highest salary.
I13	Create After Insert trigger on Employee table which insert records in view table

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

TABLE-3
TABLE NAME- Order

(PK)ONM	AMT	ODE	(FK)CNM	(FK)SNo
3001	18.69	03-OCT-94	2008	1007
3003	767.19	03-OCT-94	2001	1001
3002	1900.10	03-OCT-94	2007	1004
3005	3005	03-OCT-94	2003	1002
3006	3006	04-OCT-94	2008	1007
3009	3009	04-OCT-94	2002	1003
3007	3007	05-OCT-94	2004	1002
3008	3008	05-OCT-94	2006	1001
3010	3010	06-OCT-94	2004	1002
3011	3011	06-OCT-94	2006	1001

A1	All orders for more than \$1000.
A2	Names and cities of all salespeople in London with commission above 0.10.
A8	All salespeople either in Barcelona or in London.
A9	All salespeople with commission between 0.10 and 0.12. (Boundary values should be excluded).
A10	All customers excluding those with rating ≤ 100 unless they are located in Rome.
A11	All orders except those with 0 or NULL value in amt field.
A12	Count the number of salespeople currently listing orders in the order table.
A13	Largest order taken by each salesperson, datewise.
A14	Largest order taken by each salesperson with order value more than \$3000. (ie same city).

Create DataBase: Practices

Note: Use Create SQL statement for creating table. Task-1

tblProducts:

ColumnName	DataType	Constraint	Description
tID	int	Primarykey	AutoIncrement
ProductName	Varchar(20)		
RecommendedPrice	Money		
Category	Varchar(10)		

tblCustomers:

ColumnName	DataType	Constraint	Description
CustomerID	int	Primarykey	AutoIncrement
FirstName	Varchar(50)		
LastName	Varchar(50)		
City	Varchar(50)		
State	Char(2)		
Zip	Varchar(10)		

tblSales

Column Name	DataType	Constraint	Description
SalesID	int	Primarykey	AutoIncrement
ProductID	Int	Foreignkey	
CustomerID	Int	Foreignkey	
SalesPrice	Money		
SalesDate	Smalldatetime		

Note : Insert data using insert statement in to table

tblProduct:

ProductID	ProductName	RecommendedPr	Category
1	DVD	105.00	LivingRoom
2	Microwave	98.00	Kitchen
3	Monitor	200.00	Office
4	Speakers	85.00	Office
5	Refrigerator	900.00	Kitchen
6	VCR	165.00	LivingRoom
7	CoffeePot	35.00	Kitchen

tblCustomers:

CustomerID	FirstName	LastName	City	State	Zip
1	Chintan	Patel	Anand	GJ	388001
2	Paresh	Prajapati	Nadiad	GJ	387001
3	Pragnesh	Patel	Surat	GJ	395008
4	Nilesh	Dharsandia	Mumbai	MH	400002
5	Sonal	Patel	Mumbai	MH	400002
6	Harshal	Patel	Mogri	GJ	388345
7	Prakash	Rathod	Mogri	GJ	388345
8	Aarzoo	Dodhiya	Rajkot	GJ	360003
9	Heta	Dave	Varanasi	UP	221002
10	Nikita	Dave	Varanasi	UP	221002
11	Vaibhav	Dave	Varanasi	UP	221002
12	Paresh	Patel	Pune	MH	411001
13	Prakash	Patel	Pune	MH	411001
14	Sandhya	Patel	Hyderabad	AP	500031
15	Divesh	Patel	Banglore	KA	560002
16	Payal	Shah	Banglore	KA	560002
17	Priyanka	Rana	Anand	GJ	388001
18	Sanket	Dhebar	V.V.Nagar	GJ	388121
19	Puja	Shah	Varanasi	UP	221002
20	Priya	Shah	Varanasi	UP	221002

tblSales:

SalesID	ProductID	CustomerID	SalesPrice	SalesDate
1	1	1	130.00	2005-06-14
2	2	2	97.00	2005-06-19
3	3	3	200.00	2005-09-20
4	4	4	80.00	2005-03-22
5	5	5	899.00	2005-01-23
6	6	6	150.00	2005-03-24
7	3	7	209.00	2005-03-10
8	4	8	90.00	2005-08-11
9	6	9	130.00	2005-08-12
10	2	14	85.00	2005-12-13
11	3	15	240.00	2005-05-14
12	1	17	87.00	2005-07-19
13	2	18	99.00	2005-09-20
14	6	19	150.00	2005-07-22
15	5	5	900.00	2005-03-06
16	4	6	86.00	2005-04-07
17	2	7	88.00	2005-11-08
18	3	8	198.00	2005-05-09
19	1	9	150.00	2005-10-10
20	6	14	99.00	2005-05-09
21	6	15	104.00	2005-09-20
22	4	14	90.00	2005-07-22
23	1	1	130.00	2005-03-06
24	2	2	102.00	2005-04-07
25	1	3	114.00	2005-11-08
26	5	4	1000.00	2005-05-09
27	5	5	1100.00	2005-10-10
28	3	6	285.00	2005-06-11
29	2	7	87.00	2005-10-12
30	3	8	300.00	2005-07-13
31	3	20	205.00	2005-12-31

B1	Return the FirstName, LastName, ProductName, and SalePrice for all products sold in the month of October200
B2	Return the CustomerID, FirstName, and LastName of those individuals in the Customer table who have made no Sales purchases.
B3	.Return the FirstName, LastName, SalePrice, Recommended SalePrice, and the difference between the SalePrice and Recommended SalePrice for all Sales. The difference must be returned as a positive number.

	I1.Add the following Customer and Sale information to the database. (using store procedure)
I1	FirstName : Priyanka LastName : Chopra City:Mumbai State:MH Zip:400001 ProductID:3 SalePrice:205 SaleDate:12/31/2005
I2	Return the Product Category and the average Sale Price for those customers who have purchased two or more products.
A1	Update the Sale Price to the Recommended Sale Price of those Sales occurring between 6/10/2005and6/20/2005.
A2	Number of Sales by Product Category where the average Recommended Priceis10 or more dollars greater than the average Sale Price.
A3	Largest order taken by each salesperson, datewise.
A4	Without using a declared iterative construct, return Sale Date and the running total for all sales, ordered by the Sale Date in Ascending Order.

Task-2

Note : Operatinal Statement with Employment.

tblemp(eno,ename,bdate,title,salary, dno), tblproj(pno,pname,budget,dno),

tbldept(dno,dname,mgreno), tblworkson(eno,pno,resp,hours).

B1	Write an SQL query that returns the project number and name for projects with a budget greater than \$100,000.
B2	Write an SQL query that returns all works on records where hours worked is less than10and the responsibility is “Manager”.

B3	Write an SQL query that returns the employees (number and name only) who have a title of “EEE” or “SA” and make more than \$35,000.
B4	Write an SQL query that returns the employees (name only) in department “D1” ordered by decreasing salary.
I1	Write an SQL query that returns the departments (all fields) ordered by ascending department name.
I2	Write an SQL query that returns the employee name, department name, and employee title.
I3	Write SQL query that returns the project name, hours worked, and project number for all works on records where hours > 10.
A1	Write an SQL query that returns the project name, department name, and budget for all projects with a budget < \$50,000.
A2	Write an SQL query that returns the employee numbers and salaries of all employees in the “Consulting” department ordered by descending salary.
A3	Write an SQL query that returns the employee name, project name, employee title and hours for all works on records.

Module – 6 [Linux Scripting]

1. Write a shell script that prints “This # is simple \$program! and 'date':20/09/2019 ” on the screen
2. Create an address book program
3. Write a shell script that displays “man”, “bear”, “dog”, “cat”, and “sheep” on the screen with each appearing on a separate line. Try to do this in as few lines as possible.
4. Write a shell script that prompts the user for a name of a file or directory and reports if it is a regular file, a directory, or another type of file. Also perform an ls command against the file or directory with the long listing option

5. Write a shell script that accepts a file or directory name as an argument. Have the script report if it is regular file, a directory, or another type of file. If it is a directory, exit with a 1 exit status. If it is some other type of file, exit with a 2 exit status.
6. Write a shell script that create backup of directory.
7. Write shell script that will add two nos, which are supplied as command line argument, and if this two nos are not given show error.
8. Write Script to see current date, time, username, and current directory

GRAPHICS DESIGNING

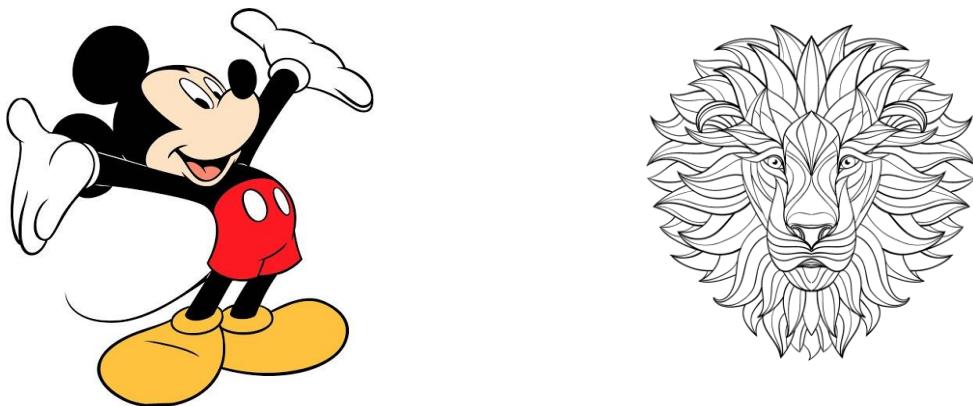
GRAPHIC DESIGN ASSIGNMENT

ADOBE ILLUSTRATOR

- 1) Create shape based Character using different shape as following**



- 2) Trace this Cartoon Character and Drawing art as following**



- 3) Design Flyer and Social Media Post on Car Wash Company.**

We are an express car wash that offer free vacuums, towels and window cleaner with every wash. We want to have small flyer that we can hand to customers and social media post that describes the benefits of joining our monthly unlimited plans. Plans start at \$11.95 a month and a prices at only 2 visits. Customers are able to wash their car as much as they want.

Organization Name :
"Grand Slam Car Wash"

- 4) Design a Logo with Business Card.**

We want Logo as well as Business card for our Restuarant Which is represent Freshness, Health, Deliciousness and Convenience.

Organization Name :
"Fit Chef Foods"

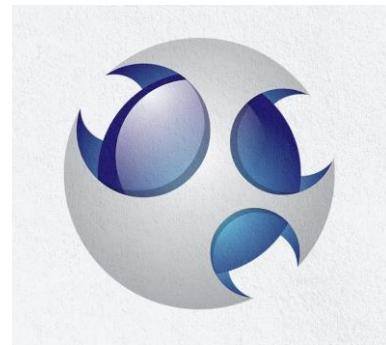
- 4) Create Logo on Skin Clinic Which name is "CELL SKIN LIFE" and Base on this also Create Business Card, Letterhead and Envelope.**
- 5) Design Invitation card on Birthday Celebration for your Sister to Invite your Relatives and Friends in Birthday Party.**
- 6) We want Two fold Brochure For Our Computer Training Center that we can hand to Students and person who are interested in Our different Courses .**
- 7) Design Tri Fold Brochure on Fast Food Cafe.**
- 8) Create a Cd & Cd cover Design on Music.**
- 9) Create a Bottle Label Design On Juice company.**

ADOBE PHOTOSHOP

- 1) Create Two Image Mixing Poster Using Selection Tools with Feather.**
- 2) Design a wallpaper using Different Brushes (Like Spalsh, Smoke Etc.) with its Properties.**
- 3) Repair Image or Retouching Image Using Spot Removal Tools.**
- 4) Create Matte Painting and Image Manipulation Using Masking.**
- 5) Create Different types of Effects Using Masking.
Like : Double Exposure Effect, Basket Weave Effect, Ink Smudge Effect, Crack Image, Peel Effect Etc.**
- 6) Create a Frame GIF animation movie of walking men.**
- 7) Create a Video GIF animation Moving a Letter, then Combine & create a Word or Name .**
- 8) Create Mobile Application and Website Banner free offers on Online Shopping.**

COREL DRAW

- 1) Create a 3d logo design using Tools which looks like below



- 2) Create a Logo and Business card on Fashion Boutique.
- 3) Design a Poster for Entertainment & Art Industry with an image
We develop and sell web series and TV- programmes. This will be a poster for our new concept. Target audience is channel directors who we need to get interested in, get to see potential and quality of the show.

Organization Name:
"VALVE"

- 4) We want to Design Flyer to provide business computer solutions and support. Our target audience is the small business that is frustrated with the high cost of purchasing equipment and then maintaining it.
- 5) Design a Box For Chocolate Industry.

ADOBE INDESIGN

1) Design a Two-Folded Broucher on Real Estate Business.

2) Create a Newsletter which looks like below



3) Design an Invitation Card for your Engagement to invite your Friends and Relatives.

4) Create a Magazine cover on Fitness Training Center.

UI-UX DESIGN ASSIGNMENT

ADOBE PHOTOSHOP

- 1) Create Web Site Grid Layout.**
- 2) We want to Design Website Layout on Medical HealthCare and also Create Mobile Application Layout Based on it.**

ADOBE XD

- 1) Create LOGIN Screen Layout for UI-UX Mobile Application Layout and Website Layout.**
- 2) Create UI-UX Mobile Application Layout with Prototype.**
- 3) Create Web Site Layout with Prototype.**

WEB DEVELOPMENT

Web Development Assignment

MODULE-1 (HTML)

- 1) Create a web page that shows a message “This is my first HTML page”.
- 2) Create Registration Form of bank Using HTML .

Individual Registration

User Particulars

* Login ID

* Password

* Confirm Password

Personal Particulars

* Salutation <input type="button" value="Select ▾"/>	* First Name <input type="text"/>
Middle Name <input type="text"/>	* Last Name <input type="text"/>
* Resident Status <input type="button" value="Select ▾"/>	* Country <input type="button" 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="button" value="Select ▾"/>	

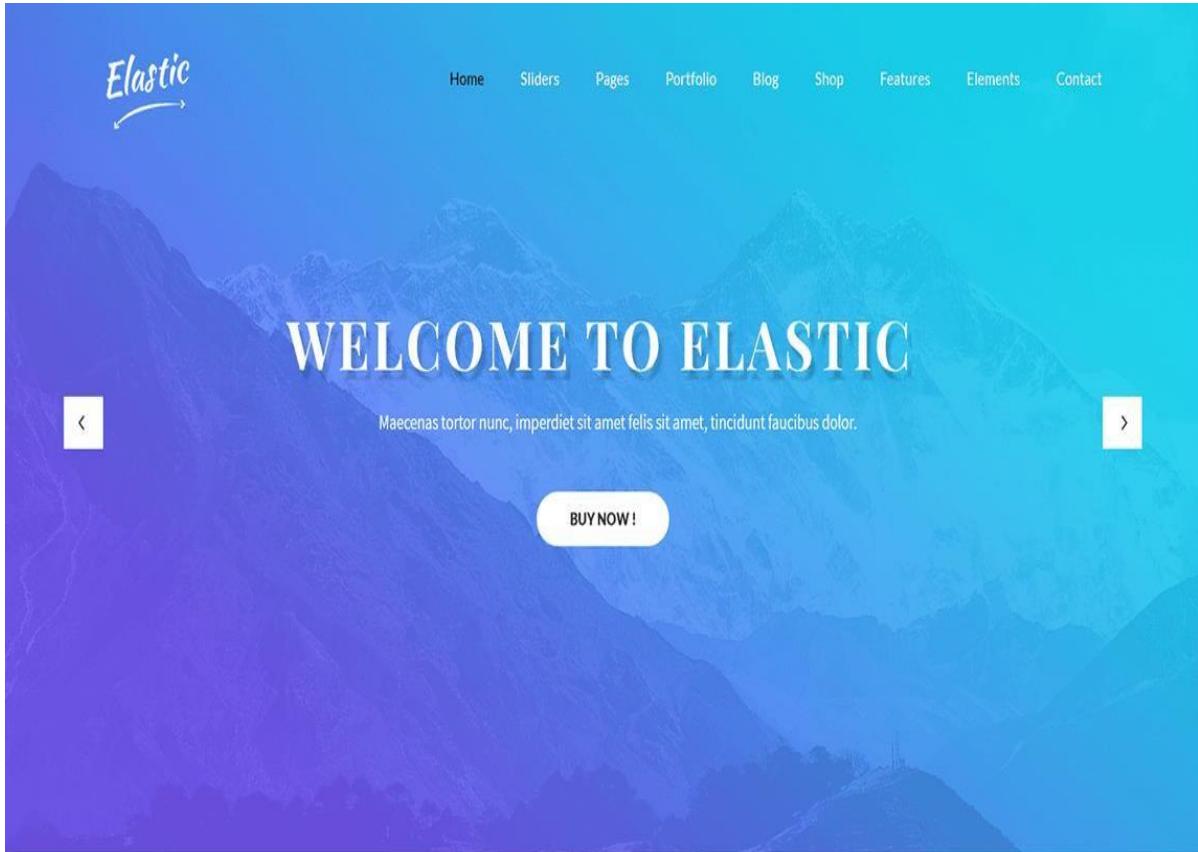
DECLARATION

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.

- 3) Create Tabular Layout using HTML:

Module – 2 [CSS]

- 4) Create elastic Page Layout.

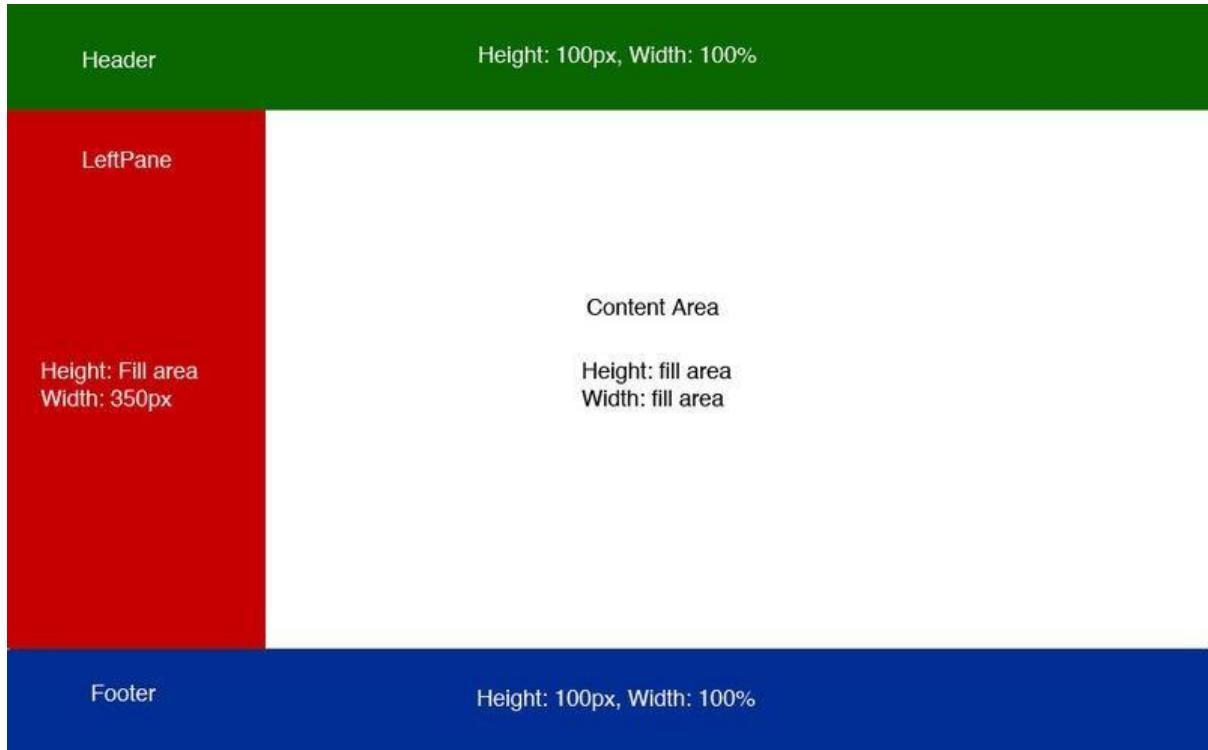


The screenshot shows the homepage of the 'Elastic' website. The background features a scenic mountain landscape with a blue-to-purple gradient overlay. In the top left corner, the word 'Elastic' is written in a white, cursive font with a small arrow pointing towards it. A navigation bar at the top right includes links for Home, Sliders, Pages, Portfolio, Blog, Shop, Features, Elements, and Contact. Below the navigation is a large, bold 'WELCOME TO ELASTIC' heading. Underneath it is a text snippet: 'Maecenas tortor nunc, imperdiet sit amet felis sit amet, tincidunt faucibus dolor.' At the bottom center is a white button with the text 'BUY NOW!' in black. On either side of the main content area are small, semi-transparent navigation arrows pointing left and right.

Why choose Elastic?

Etiam non nulla id lorem tristique suscipit. Pellentesque dictum erat eget pretium euismod. Sed dignissim, enim ut blandit pretium, libero lacus tincidunt nullaeu egestas nulla urna blandit justo. Mauris lacinia enim nec aliquam mollis. Phasellus sitamet consequat sem, ut tincidunt ante. Proin pellentesque pulvinar neque eget facilisis. Etiam quis gravida arcu. Nulla quis est eget ex viverra volutpat. Donec suscipit placerat ipsum ac finibus. Orci varius natoque penatibus et magnis dis parturient montes.

- 5) Create simple website template using HTML and CSS it contains: Header, Main Content and Footer.



- 6) Create simple three pages using External CSS ,Internal CSS, Inline CSS.
 7) Apply Gradient effect and box shadow effect on website Header(CSS3).



- 8) Use New Tags <article>,<header>,<footer>,<section>,<nav> (HTML5).
 9) Create a List Item on the topic Restaurant.

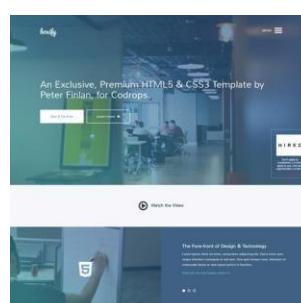
- 10) Create a Table Of college Management system using row span & colspan.

BISHOPSTROW COLLEGE
A pathway to excellence

Primary Group 1 (J1) – Timetable

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
7.30	Wake up	Wake up	Wake up	Wake up	Wake up		
7.30 – 8.15	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast	Wake up	Wake up
8.45 – 9.00	Assembly	Assembly	Assembly	Assembly	Assembly	Breakfast	Breakfast
9.00 – 10.00	Maths [RmA4]	Tutorial [RmA4]	Sub Sup 1 [RmA4]	History [RmA2]	Maths [RmA4]		
10.00 – 10.25	MORNING BREAK						
10.25 – 11.25	Science [RmA4]	ESOL [RmA4]	ESOL [RmA4]	Science [RmA4]	Science [RmA4]		
11.25 – 12.25	Geography [RmA2]	Skills for Life [RmA4]	ESOL [Computer Rm]	Maths [RmA4]	Geography [RmA2]		
12.25 – 1.20	LUNCH						
1.20-1.25	REGISTRATION						
1.25 – 2.25	Skills for Life [RmA4]	Drama and Literature [RmA4]	Drama and Literature [Library]	History [RmA2]	Verbal Reasoning [RmA4]		
2.25 – 3.25	ESOL [RmA4]	ESOL [RmA4]	Sub Sup 2 [A4]	PE/Music/Art [RmA4]	ESOL [RmA4]		
3.25 – 3.50	AFTERNOON BREAK						
3.50 – 4.50	SPORT						
PREP 4.50 – 5.50							
6.30 – 7.00	SUPPER						
7.00 – 7:30	ACTIVITIES	ACTIVITIES	ACTIVITIES	ACTIVITIES	ACTIVITIES	ACTIVITIES	ACTIVITIES
8:15	Bedtime onwards						

- 11) Create link-pseudo classes using external css, to format links on the pages.
 12) Create a division which should not resize on browser resize.
 13) Create one Page Layout



Module- 3 [CSS3]

1. How block elements can be centered with CSS?
2. In how many ways can a CSS be integrated as a web page?
3. Differentiate logical tags from physical tags?
4. Define Declaration block?
5. What is the usage of Class selector?
6. How to overrule underlining Hyperlinks?
7. Compare RGB values with Hexadecimal color codes ?
8. Compare Grouping and Nesting in CSS ?
9. How does Z index function?
10. Define Attribute Selector ?
11. How can CSS be cascaded to mix with user's personal sheet?
12. Why is @import only at the top?

Module – 4 [HTML5]

1. How to create an area inside an image-map?
2. How to isolate a part of the text that might be formattted in a different direction from other text outside it?
3. How to specify the column properties of each column within a colgroup element?
4. How to define a container for an external (non-HTML) application?
5. How to define an alternate content for users that do not support client-side scripts?
6. How to define an option in a drop-down list?
7. How to underline a text in an HTML document?
8. Create JavaScript for display alert on Page Load
9. Implement Event: OnClick,OnMouseOut,OnmouseHover
10. Write JavaScript to change image source on button click event.
11. Arithmetic Operation using Javascript.

MODULE-5 (JQUERY)

- 1) Implement Toggleclass In Jquery
- 2) Implement animate Effect using Jquery.
- 3) Write Jquery to give message on PageLoad.

Create Multilevel menu Using Jquery



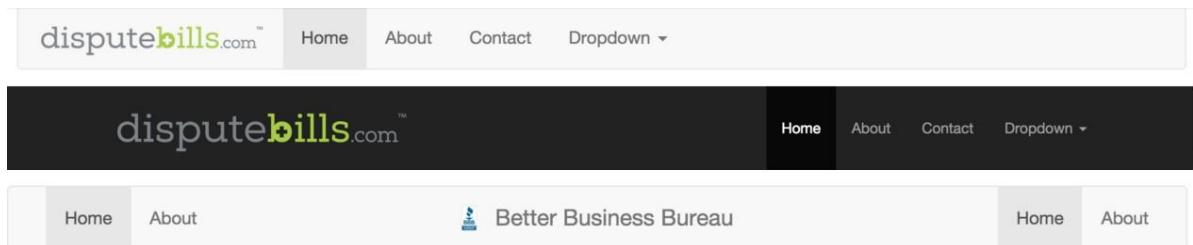
Module -6 [Responsive Design]

1. Implement Jquery Slider



- 1) Create Table Using bootstrap 4.

2) Create Navbar Header.



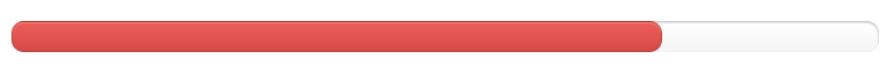
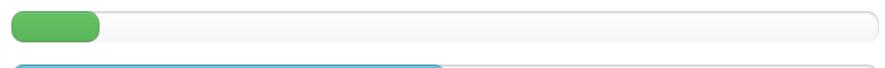
3) Create Progressive Bar of Technical Skills.

Progress bars

... for indicating progress

Basic bars

Default look of progress bars.



Striped bars

Bars with stripes painted.

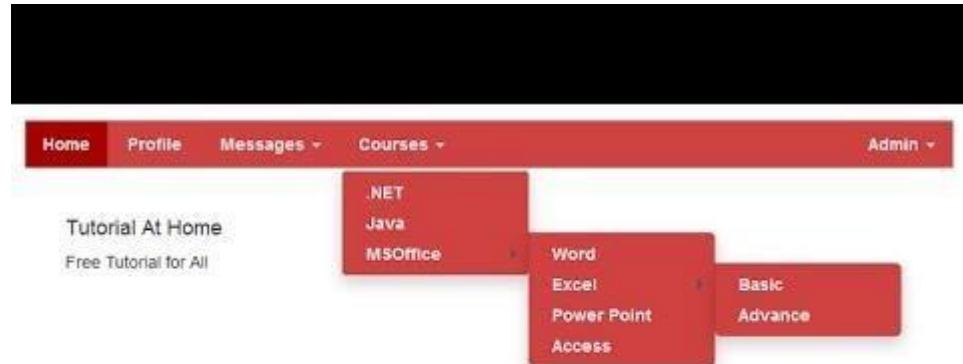


Animated

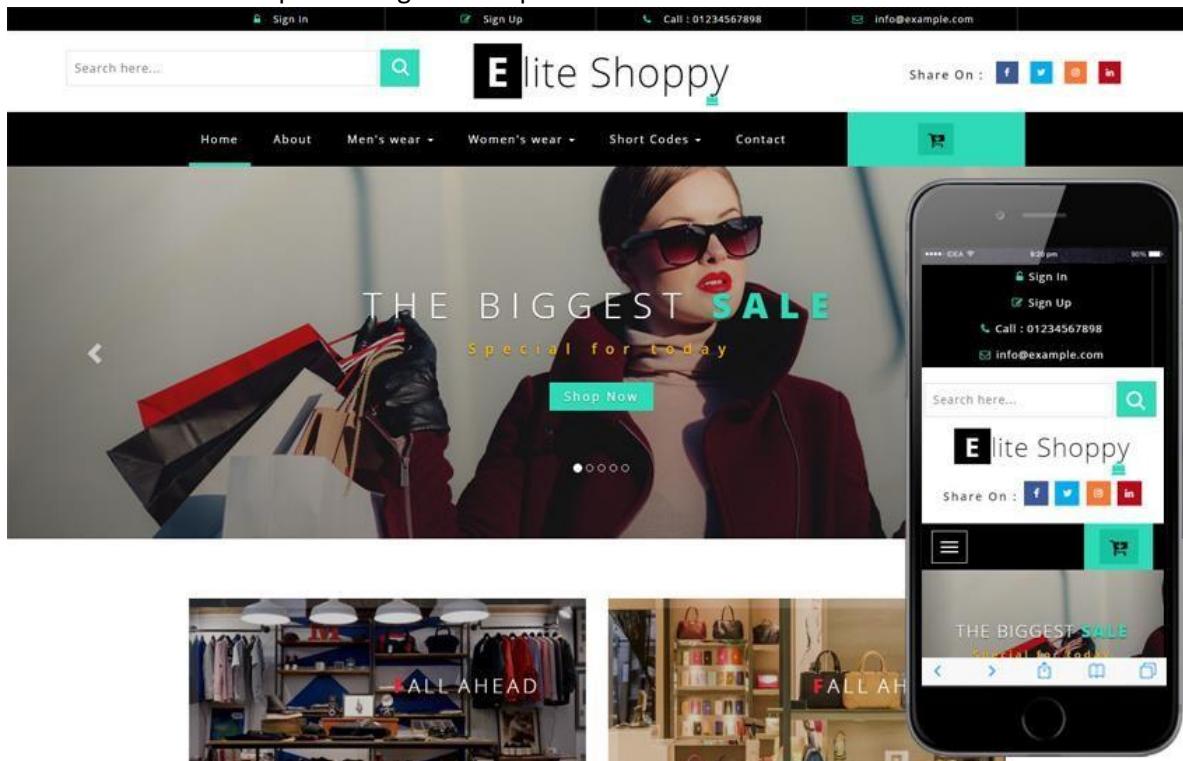
It moves! Not on Opera, though :(



4. Dropdown menu using Bootstrap.



5. Create Website Template Using Bootstrap Classes with Carousel Effect.



JAVA

Module 1**Assignment Topic: Fundamental****Assignment Level Basic**

- B1. Features of Java. (or) Java buzzwords.
- B2. Difference between JDK, JRE and JVM.
- B3. Java is Platform independent.?
- B4. Three flavors of Java.
- B5. How many types of memory areas are allocated by JVM?
- B6. What is the latest version of Java?
- B7. What is Write Once, Run Anywhere (WORA)?
- B8. Is Java a pure/fully object oriented language?
- B9. What is bytecode?
- B10. What is Heap space in Java?
- B11. Difference between EAR, JAR and WAR file in J2EE.
- B12. Explain memory leak in Java.
- B13. How Garbage collection works in Java?
- B14. Does Java garbage collector clean both heap and stack memory?
- B15. Why garbage collection is required in Java?
- B16. W.A.J.P to Take three numbers from the user and print the greatest number.
- B17. 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 an and z or A and Z), or is a string of length > 1, print an error message.
- B18. 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.
- B20. Write a program in Java to input 5 numbers from keyboard and find their sum and average using for loop.
- B21. Write a program in Java to display the pattern like right angle triangle with a number.

1

12

123

1234

12345

123456

1234567

12345678

- B22. 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

- B23. Write a program in Java to print the Floyd's Triangle.

1
01
101
0101
10101

B24. Write a Java program to display Pascal's triangle.

1
1 1
1 2 1
1 3 3 1
1 4 6 4 1

B25. 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

B26. Write a Java program to count the letters, spaces, numbers and other characters of an input string.

B27. Write a Java program to print the ascii value of a given character.

B28. Write a Java program that accepts an integer (n) and computes the value of $n+nn+nnn$.

Input number: 5

5 + 55 + 555

B29. Write a Java program to display the system time.

B30. Write a Java program to print numbers between 1 to 100 which are divisible by 3, 5 and by both.

B31. Write a Java program to calculate the sum of two integers and return true if the sum is equal to a third integer.

Input the first number: 5

Input the second number: 10

Input the third number: 15

The result is: true

B32. Write a Java program that accepts two integer values between 25 to 75 and return true if there is a common digit in both numbers.

Input the first number: 35

Input the second number: 45

Result: true

B33. Write a Java program to compute the sum of the first 100 prime numbers.

B34. Write a Java program that accepts two double variables and test if both strictly between 0 and 1 and false otherwise.

Input first number: 5

Input second number: 1

false

B35. Write a Java program to break an integer into a sequence of individual digits.

TestData

Input six non-negative digits: 123456

ExpectedOutput :

1 2 3 4 5 6

Module 2

Assignment Topic: Array

Assignment Level Basic

- B1. How do I initialize a String array?
- B2. What is Array?
- B3. How many types of array available?
- B4. Is arrays are considered as primitive data types?
- B5. How do I create a list from Array which is completely independent of the original array?
- B6. What is the index of the first element in an array?
- B7. How do you print the content of an array in Java?
- B8. How do you print the content of a multi-dimensional array in Java?
- B9. Why is it a good practice to store sensitive information like password, SSN into a character Array rather than String?
- B10. Which algorithm does Arrays. Sort use in Java?
- B11. W.A.J.P to sort a numeric array and a string array.
- B12. W.A.J.P to sum values of an array.
- B13. W.A.J.P to calculate the average value of array elements.
- B14. W.A.J.P to test if an array contains a specific value.
- B15. W.A.J.P to find the index of an array element.
- B16. W.A.J.P to find the maximum and minimum value of an array.

Assignment Level Intermediate

- I1. W.A.J.P to remove a specific element from an array
- I2. W.A.J.P to copy an array by iterating the array.
- I3. W.A.J.P to insert an element (specific position) into an array.
- I4. W.A.J.P to reverse an array of integer values.
- I5. W.A.J.P to find the duplicate values of an array of integer values.
- I6. W.A.J.P to find the duplicate values of an array of string values.
- I7. W.A.J.P to find the second largest element in an array.

Assignment Level Advance

- A1. W.A.J.P to find the common elements between two arrays (string values).
- A2. W.A.J.P to compute the average value of an array of integers except the largest and smallest values.
- A3. W.A.J.P to check if the sum of all the 10's in the array is exactly 30. Return false if the condition does not satisfy, otherwise true.

Original Array: [0, 1, 0, 1, 1, 0, 1, 1, 0, 0, 1]

```
Array after segregation is: [0, 0, 0, 0, 0, 1, 1, 1, 1, 1]
```

A4. W.A.J.P to segregate all 0s on left side and all 1s on right side of a given array of 0s and 1s.

A5. W.A.J.P to cyclically rotate a given array clockwise by one.

```
Original array: [10, 20, 30, 40, 50, 60]
```

```
Rotated array: [60, 10, 20, 30, 40, 50]
```

Module 2

Assignment Topic: String

Assignment Level Basic

B1. Can String be referred as a datatype?

B2. What is `toString()` method?

B3. All the String objects created using String literals are stored in String pool?

B4. Difference between StringBuffer and StringBuilder.

B5. What is Immutable?

B6. Is String is Immutable?

B7. How do you create a String object?

B8. What is the difference between creating String object using new and String literals?

B9. What is Java String Pool?

B10. Immutable objects are thread-safe?

B11. Overriding `toString()` example.

B12. What is String interpolation in Java?

B13. Name the interfaces that Java String class implements.

B14. How do I compare strings in Java?

B15. Can we have case null in string switch case?

B16. What is the default implementation of equals method in Object class?

B17. 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
```

B18. W.A.J.P to concatenate a given string to the end of another string.

B19. 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
```

Assignment Level Intermediate

I1. 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
```

I2. 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

I4. 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

Assignment Level Advance

A1. W.A.J.P to find first non-repeating character in a string.

The given string is: gibblegabbler

The first non-repeated character in String is: i A2.

W.A.J.P to divide a string in an equal part.

The given string is: abcdefghijklmnopqrstuvwxyz

The string divided into 5 parts and they are:

abcde

fghij

klmno

pqrst

uvwxyz

A3. W.A.J.P to count and print all the duplicates in the input

string. The given string is: w3resource tops

technologies The duplicate characters and

counts are: t appears 2 times o appears 3 times

so on.....

A4. W.A.J.P to return a string where every appearance of the lowercase word 'is' has been replaced with

'is not'.

The given string is: it is a string

The new string is: it is not a string

Module 2**Assignment Topic: OOPs Concept –****Inheritance/Polymorphism/Abstraction/Encapsulation****Assignment Level Basic**

- B1. What is inheritance?
- B2. Which inheritance is not supported by Java? Why?
- B3. What is advantage of inheritance?
- B4. Difference between inheritance and encapsulation.
- B5. Difference between inheritance and abstraction.
- B6. Difference between inheritance and polymorphism.
- B7. Can we override static method in Java?
- B8. Can we overload static method in Java?
- B9. Can a class implement more than one interface?
- B10. Can a class extend more than one class in Java?
- B11. Can an interface extend more than one interface in Java?
- B12. What will happen if a class implements two interfaces and they both have a method with same name and signature?
- B13. Can we pass an object of a subclass to a method expecting an object of the super class?
- B14. Are static members inherited to sub classes?
- B15. What happens if the parent and the child class have a field with same identifier?
- B16. Are constructors and initializers also inherited to sub classes?
- B17. How do you restrict a member of a class from inheriting by its sub classes?
- B18. How do you implement multiple inheritance in java?
- B19. Can a class extend by itself in Java?
- B20. How do you override a private method in java?
- B21. When to overload a method in Java and when to override it?
- B22. What is the order of extends and implements keyword on Java class declaration?
- B23. How do you prevent overriding a Java method without using the final modifier?
- B24. What are the rules of method overriding in Java?
- B25. Difference between method overriding and overloading in Java.
- B26. What happens when a class implements two interfaces and both declare field (variable) with same name?
- B27. Can a subclass instance method override a superclass static method?
- B28. Can a subclass static method hide superclass instance method?
- B29. Can a superclass access subclass member?
- B30. Difference between object oriented and object based language.
- B31. Explain Diamond problem.

B32. Why Java does not support operator overloading?

B33. What is Encapsulation in Java?

B34. Which of the Java OOPS feature promotes access protection or data hiding?

B35. Create a class named 'PrintNumber' to print various numbers of different datatypes by creating different methods with the same name 'printn' having a parameter for each data type.

B36. 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).

B37. 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.

B38. 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

B39. Create a class named 'Member' having the following members:

Data members

- 1 - Name
- 2 - Age
- 3 - Phone number
- 4 - Address
- 5 - Salary

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

Two classes 'Employee' and 'Manager' inherits the 'Member' class. The 'Employee' and 'Manager' classes have data members 'specialization' and 'department' respectively. Now, assign name, age, phone number, address and salary to an employee and a manager by making an object of both of these classes and print the same.

B40. 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.

B41. 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.

B42. 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.

B43. 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.

B44. 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.

B45. 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.

Assignment Level Intermediate

I1. 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,

$$1! = 1$$

$$0! = 0$$

I2. 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

91-100 AA

81-90	AB
71-80	BB
61-70	BC
51-60	CD
41-50	DD
<=40	Fail

I4. 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.

Assignment Level Advance

A1. All the banks operating in India are controlled by RBI. RBI has set a well-defined guideline (e.g. minimum interest rate, minimum balance allowed, maximum withdrawal limit etc) which all banks must follow. For example, suppose RBI has set minimum interest rate applicable to a saving bank account to be 4% annually; however, banks are free to use 4% interest rate or to set any rates above it.

Write a JAVA program to implement bank functionality in the above scenario and demonstrate the dynamic polymorphism concept. Note: Create few classes namely Customer, Account, RBI (Base Class) and few derived classes (SBI, ICICI, PNB etc). Assume and implement required member variables and functions in each class.

A2. Suppose a class 'A' has a static method to print "Parent". Its subclass 'B' also has a static method with the same name to print "Child". Now call this method by the objects of the two classes. Also, call this method by an object of the parent class referring to the child class i.e. A obj = new B ()

Module 2

Assignment Topic: Exception

Assignment Level Basic

- B1. How are the exceptions handled in java?
- B2. Difference between Error and Exception in Java.
- B3. What are checked and unchecked exceptions?
- B4. How do we handle more Than One Type of Exception using catch block in Java?
- B5. What happens if an exception is thrown from the finally or catch block in Java?
- B6. Will the finally block be executed when the catch clause throws exception in Java?
- B7. What is a user defined/custom exception in Java?
- B8. Does a finally block always run in Java?
- B9. Does return statement allow finally block to execute in Java?
- B10. Should a catch block always follow try block in Java for Exception handling?
- B11. Difference between Error and runtime exceptions in Java.

- B12. Difference between throw and throws clause in Java.
 B13. Can try block exist without any catch and finally block in Java?
 B14. What is stack trace?
 B15. What is the order of catch blocks when catching more than one exception?
 B16. Can we use FileNotFoundException and IOException in Java multi catch?
 B17. Give few examples of checked exceptions.
 B18. Give few examples of unchecked exceptions.
 B19. Explain exception handling when overriding a method?
 B20. Can overridden method throw RuntimeException when original method throw ArithmeticException?
 B21. Can I write only try block without any catch and finally block?
 B22. Difference between final, finally and finalize in Java.
 B23. What is rethrowing an exception?
 B24. Explain the rules of Exception Handling in terms of Method Overriding?
 B26. 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.ArithmaticException:/ by zero
```

- B27. 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;

- B28. 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
}
```

- B29. 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. ArithmeticException:/ by zero

Assignment Level Intermediate

I1. W.A.J.P to read 10 integer values using Scanner class from keyboard. Generate the exception if the entered value is less than 10 and or greater than 40. Program should display appropriate message as and when this exception occurs otherwise it will display all the entered values.

I2. 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 ArithmeticException otherwise print a message welcome to vote.

O/P- Enter your age:16

Exception in thread main java. lang. ArithmeticException: not valid

Assignment Level Advance

A1. 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.

A2. 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 userdefined exception "AgeNotWithinRangeException". If name contains numbers or special symbols raise exception "NameNotValidException". Define the two exception classes.

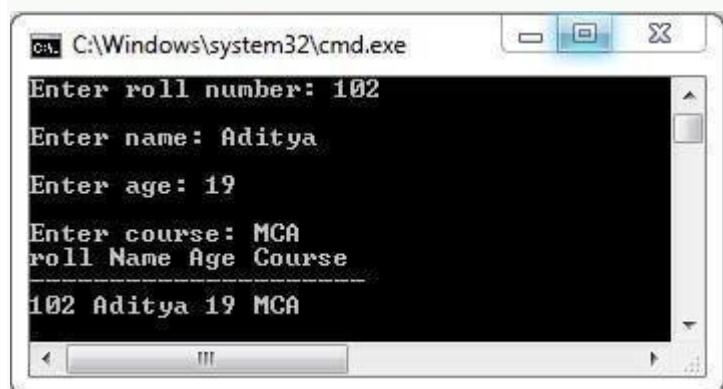
Output:

i. When we enter invalid name or age



```
C:\Windows\system32\cmd.exe
Enter roll number: 101
Enter name: Aditya
Enter age: 12
Enter course: BCA
NameNotValidException
Age is not between 15 and 21. please ReEnter the Age
roll Name Age Course
101 null 0 BCA
```

ii. Enter valid name as well as age



```
C:\Windows\system32\cmd.exe
Enter roll number: 102
Enter name: Aditya
Enter age: 19
Enter course: MCA
roll Name Age Course
102 Aditya 19 MCA
```

Module 2 Topic: Thread

Assignment Level Basic

B1. W.A.J. P to create one thread by implementing Runnable interface in Class.

B2. W.A.J. P to create one thread by extending Thread class in another Class.

B3. W.A.J.P to create 2 threads and execute that threads by providing sleep time as 2000ms and check the execution.

B4.W.A.J.P to start the same Thread twice by calling start () method twice.

```
TestThreadTwice1 t1=new TestThreadTwice1();
t1.start(); t1.start();
```

B5. W.A.J.P to call run() method directly without calling start() method for 2 threads.

```
TestCallRun2 t1=new TestCallRun2();
TestCallRun2 t2=new TestCallRun2();
t1.run();      t2.run();
```

Assignment Level Intermediate

I1. W.A.J.P to set the user defined name, priority and get that name and priority for 2 threads using setName (), setPriority (), getName (), getPriority () methods of Thread class.

```
TestMultiPriority1 m1=new TestMultiPriority1();
TestMultiPriority1 m2=new TestMultiPriority1();
m1.setName("mythread-1"); m2.setName("mythread-
2"); m1.setPriority(Thread.MIN_PRIORITY);

m2.setPriority(Thread.MAX_PRIORITY);
m1.start();  m2.start();
```

I2. W.A.J.P to create 2 threads and make one thread as DaemonThread by using setDaemon () method of Thread class and check whether the thread is set daemon or not by using isDaemon () method.

```
TestDaemonThread2 t1=new TestDaemonThread2();
TestDaemonThread2 t2=new TestDaemonThread2();
t1.start();
t1.setDaemon(true);//will throw exception here
t2.start();
```

Assignment Level Advance

A1. W.A.J.P to to create 3 threads and make one thread group for all 3 threads and use list () method to list all threads from group.

```
ThreadGroup tg1 = new ThreadGroup ("Group A");
Thread t1 = new Thread (tg1, new MyRunnable(),"one");
Thread t2 = new Thread (tg1, new MyRunnable(),"two");
Thread t3 = new Thread (tg1, new MyRunnable(),"three");
```

A2. W.A.J.P to create one class named First having method display () which display message with "*"as,

```
public void display (String msg)
{
    System.out.print("[ "+msg);
    try
    {
        Thread.sleep(1000);
    }
    catch(InterruptedException)
```

```

    {
        e.printStackTrace ();
    }
    System.out.println("]");
}

Then create another class named Second by extending First class in it and use synchronized
() method and use display () method in it. public void run ()
{
    synchronized(fobj) //Synchronized block
{
    fobj.display(msg);
}
}

First fnew= new First();
Second ss= new second(fnew, "welcome");
Second ss1= new second (fnew,"new");
Second ss2 = new second(fnew, "programmer"); o/p-
[welcome]
[new]
[programmer]

```

Module 2 Topic: Collection

Assignment Level Basic

- B1. How do you initialize an ArrayList?
- B2. What is Java Collections Framework?
- B3. What is the difference between List and Set?
- B4. What is the difference between Map and Set?
- B5. What are the classes that implements List and Set interface?
- B6. What is an iterator?
- B7. What is the difference between Iterator and Enumeration?
- B8. What is the difference between HashMap and Hashtable?
- B9. What is the difference between Iterator and ListIterator?
- B10. What is the difference between Array and ArrayList in Java?
- B11. List the differences between LinkedList and ArrayList in Java.
- B12. Difference between Comparable and Comparator interface.
- B13. Write a Java program to create a new array list, add some colors (string) and print out the collection.
- B14. Write a Java program to iterate through all elements in a array list.
- B15. Write a Java program to insert an element into the array list at the first position.
- B16. Write a Java program to retrieve an element (at a specified index) from a given array list.

- B17. Write a Java program to update specific array element by given element.
- B18. Write a Java program to remove the third element from a array list.
- B19. Write a Java program to search an element in a array list.
- B20. Write a Java program to sort a given array list.
- B21. Write a Java program to copy one array list into another.
- B22. Write a Java program to shuffle elements in a array list.
- B23. Write a Java program to append the specified element to the end of a hash set.
- B24. Write a Java program to iterate through all elements in a hash list.
- B25. Write a Java program to get the number of elements in a hash set.
- B26. Write a Java program to associate the specified value with the specified key in a HashMap. B27. Write a Java program to count the number of key-value (size) mappings in a map.

Assignment Level Intermediate

- I1. Write a Java program to reverse elements in a array list.
- I2. Write a Java program to extract a portion of a array list.
- I3. Write a Java program to compare two array lists.
- I4. Write a Java program of swap two elements in an array list.
- I5. Write a Java program to join two array lists.
- I6. Write a Java program to convert a hash set to an array.
- I7. Write a Java program to convert a hash set to a List/ArrayList.
- I8. Write a Java program to check whether a map contains key-value mappings (empty) or not.

Assignment Level Advance

- A1. Write a Java program to increase the size of an array list.
- A2. Write a Java program to replace the second element of a ArrayList with the specified element.
- A3. Write a Java program to print all the elements of a ArrayList using the position of the elements.
- A4. Write a Java program to compare two sets and retain elements which are same on both sets. A5. Write a Java program to get a collection view of the values contained in this map.

Module 3

Topic: SQLEMP

TABLE:

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

1. Select unique job from emp table.
2. List the details of the emps in asc order of the Dptnos and desc of Jobs?
3. Display all the unique job groups in the descending order?
4. List the emps who joined before 1981.
5. List the Empno, Ename, Sal, Daily sal of all emps in the asc order of Annsal.
6. List the Empno, Ename, Sal, Exp of all emps working for Mgr 7369.
7. Display all the details of the emps whose Comm. Is more than their Sal.
8. List the emps who are either 'CLERK' or 'ANALYST' in the Desc order.
9. List the emps Who Annual sal ranging from 22000 and 45000.
10. List the Enames those are starting with 'S' and with five characters.
11. List the emps whose Empno not starting with digit78.
12. List all the Clerks of Deptno 20.
13. List the Emps who are senior to their own MGRS.
14. List the Emps of Deptno 20 whose Jobs are same as Deptno10.
15. List the Emps whose Sal is same as FORD or SMITH in desc order of Sal.
16. List the emps whose jobs same as SMITH or ALLEN.
17. Any jobs of deptno 10 those that are not found in deptno 20.

18. Find the highest sal of EMP table.
19. Find details of highest paid employee.
20. Find the total sal given to the MGR.
21. List the emps whose names contains 'A'.
22. Find all the emps who earn the minimum Salary for each job wise in ascending order.
23. List the emps whose sal greater than blakes sal.
24. Create view v1 to select ename, job, dname, loc whose deptno are same.
25. Create a procedure with dno as input parameter to fetch ename and dname.
26. Add column Pin with bigint datatype in table student.
27. Modify the student table to change the sname length from 14 to 40.
28. Create trigger to insert data in emp_log table whenever any update of sal in emp table. You can set action as 'New Salary'.

Module 3

Assignment Topic: JDBC/Swing

Assignment Level Basic

- B1. What is JDBC?
- B2. Differences Between JDBC and ODBC.
- B3. What is JDBC driver?
- B4. Which is the pure Java driver among the 4 types of JDBC Driver?
- B5. What are the steps involved in creating a JDBC connection?
- B6. What is a Driver in JDBC?
- B7. What is the role of Driver Manager in JDBC?
- B8. Explain JDBC statement.
- B9. Difference between execute, executeQuery and executeUpdate in JDBC.
- B10. Explain JDBC PreparedStatement.
- B11. Why JDBC PreparedStatement is preferred?
- B12. How do I set NULL as an input value for JDBC PreparedStatement?
- B13. What are the steps to connect to the database in JDBC?
- B14. What are the types of JDBC statements?
- B15. How do you execute stored procedures and functions using JDBC?
- B16. What is JDBC ResultSet?
- B17. What is the return type of Class.forName method in Java?

Assignment Level Advance

- A1. Write swing example with database connectivity to achieve the following.

REGISTRATION FORM

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

Registration Form

ID

Name

Gender Male Female

Address

Contact

Exit

Register

Delete

Update

Reset

Refresh Table

Module 4

Assignment Topic: JSP/Servlet

Assignment Level Basic

- B1. What is servlet?
 - B2. Advantages of Servlet over CGI.
 - B3. Can we call servlet destroy () from service ()?
 - B4. Difference between out.println and System.out.println in JSP Scriptlet.
 - B5. What happens when JSTL expression encounter NullPointerException?
 - B6. Types of a servlet
 - B7. Servlet Life Cycle
 - B8. What is deployment descriptor?
 - B9. What is RequestDispatcher?
 - B10. What is SendRedirect method and its use?
 - B11. Difference between Servlet Config and Servlet Context
 - B12. What is Filter and types of filter?
 - B13. How can we refresh automatically when new data has entered the database?
 - B14. What are the supporting protocol by HttpServlet?
 - B15. What are the important functions of filters?
 - B16. What is the difference between JSP and Servlets?
 - B17. What is called Scriptlet?
 - B18. Can we refresh servlet in client and server side automatically?
 - B19. What is Generic Servlet class?
 - B20. Which exception is thrown if servlet is not initialized properly?
 - B21. Who is responsible for writing a constructor in Servlet?
 - B22. Whether we can get deadlock situation in Servlets?

- B23. What is the default HTTP method in the servlet?
- B24. Whether thread can be used in Servlets?
- B25. Difference between sendredirect and forward in Servlet?
- B26. Write a Java program to fetch data from web.xml to Servlet using ServletConfig.
- B27. Write a Java program to fetch data from web.xml to Servlet using ServletContext.
- B28. 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. B29. Write above Java program and print fetched data on another jsp using expression language. B30. Write a Java program to fetch all the data from database table and print on jsp page using JSTL SQL tag library.

Assignment Level Intermediate

I1. 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.

Assignment Level Advance

A1. Write a jsp/servlet CRUD operation for following.

Student:

```
Int id;(primary key, Auto Increment)  
String fname, lname, email, mobile, gender, password;
```

1. Need to use bootstrap responsive template for the same.
2. Use client side validation to for all data input.
3. Use regular expression for email for standard email input.
4. Use regular expression for password like(Test@123)
5. Use server side validation(Filter) same as client side validation.
6. All the inserted data should be show in show.jsp with edit and delete functionality.
7. Store all the deleted record in table named deleted_data.

Module 5

Assignment Topic: Session Management

Assignment Level Basic

- B1. How do you logout a session user in servlet?
- B2. How to protect session cookies in Servlet?
- B3. What is called a session?
- B4. What are session tracking techniques.
- B5. Why session tracking is needed?
- B6. How to get the current HttpSession object?
- B7. What is Session?
- B8. What is MVC?
- B9. What is Cookie?
- B10. What is URL rewriting?
- B11. How to get session id?

Assignment Level Advance

A1. 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;
```

1. Create one registration form to register user.
2. Do client and server side validation.
3. Use AJAX to register with unique email id.
4. After successful registration confirmation email should be sent to user's email id with one OTP.
5. Verify OTP and then allowed to login to the user.
6. After successful login user can edit their profile.
7. Also one user can send some msg to another user using their email id.
8. When another user logged in they are able to see msg sent by a particular user and also can reply.
9. Logout button is there to invalidate session.
10. Also take care when user logged out and press back button on browser then it should be in logged out mode.

Module 6

Assignment Topic: Hibernate

Assignment Level Basic

- B1. What is HQL (Hibernate Query Language)?
- B2. What are the most common methods of Hibernate configuration?
- B3. In a Parent-child relationship, how will you only access the columns from parent?
- B4. Difference between Hibernate createCriteria, createQuery, createSQLQuery.
- B5. Different between session.get() and session.load() in Java.

- B6. What is ORM?
- B7. What is hibernate?
- B8. core interfaces of Hibernate.
- B9. Is SessionFactory a thread-safe object?
- B10. What role does the SessionFactory interface play in Hibernate?
- B11. Is Hibernate Session a thread-safe object?
- B12. Different types of association in hibernate.
- B13. Benefits of hibernate over JDBC?
- B14. How do we see hibernate generated SQL on console?
- B15. W.A.J.P to insert below data from jsp to MySQL database using “.cfg.xml” and “.hbm.xml” file.
Variable id must be primary key and auto increment

```
Int id
String first name, last name, email, mobile, password, gender
```

- B16. W.A.J.P using above configuration with annotation and also show login jsp after data insert or registration.

Assignment Level Intermediate

- I1. 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.
- I2. 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.

Assignment Level Advance

“All The Questions Below Need to Perform Using Some Bootstrap Design Templates ”

- A1. 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, zipcode;
```

- A2. 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;

```

A3. 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 7

Assignment Topic: Spring

Assignment Level Basic

- B1. Explain Spring Framework.
- B2. What are the advantages of using Spring Framework?
- B3. What is the difference between singleton and prototype bean?
- B4. What are the types of Dependency Injection Spring supports?
- B5. What is Bean Factory in Spring?
- B6. How do I decide between when to use prototype scope and singleton-scoped bean?
- B7. Different types of IOC.
- B8. Difference between BeanFactory and ApplicationContext in spring.
- B9. What is Bean Wiring?
- B10. Types of IoC containers.
- B11. Explain different modes of bean autowiring in Spring Framework.
- B12. What is Dependency Injection in Spring framework?
- B13. Which DI should I prefer, Constructor-based or setter-based in spring?
- B14. Difference between the setter and constructor injection in Spring.
- B15. What is the default scope of Spring bean?
- B16. How does Spring achieve loose coupling?
- B17. Write a program to demonstrate the setter based dependency injection.
- B18. Write a program to demonstrate the constructor based dependency injection.
- B19. Write a program to demonstrate the object based dependency injection and also implement inner bean concept in your spring beans configuration file.
- B20. 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.
```

Assignment Level Intermediate

I1. 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.

Assignment Level Advance

A1. Write a Spring MVC+ORM application to demonstrate the following things.

Spring MVC Form					Add User
#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	

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.

ANDROID

Module 1[Core Java]**Assignment****Topic - Fundamental****Assignment Level Basic**

- B1. Features of Java. (or) Java buzzwords.
- B2. Difference between JDK, JRE and JVM.
- B3. Java is Platform independent.?
- B4. Three flavors of Java.
- B5. How many types of memory areas are allocated by JVM?
- B6. What is the latest version of Java?
- B7. What is Write Once, Run Anywhere (WORA)?
- B8. Is Java a pure/fully object oriented language?
- B9. What is bytecode?
- B10. What is Heap space in Java?
- B11. Difference between EAR, JAR and WAR file in J2EE.
- B12. Explain memory leak in Java.
- B13. How Garbage collection works in Java?
- B14. Does Java garbage collector clean both heap and stack memory?
- B15. Why garbage collection is required in Java?
- B16. W.A.J.P to Take three numbers from the user and print the greatest number.
- B17. 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.
- B18. 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.
- B20. Write a program in Java to input 5 numbers from keyboard and find their sum and average using for loop.
- B21. Write a program in Java to display the pattern like right angle triangle with a number.

1

12

123
1234
12345
123456
1234567
12345678

B22. 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

B23. Write a program in Java to print the Floyd's Triangle.

1
01
101
0101
10101

B24. Write a Java program to display Pascal's triangle.

1
1 1
1 2 1
1 3 3 1
1 4 6 4 1

B25. 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

B26. Write a Java program to count the letters, spaces, numbers and other characters of an input string.

B27. Write a Java program to print the ascii value of a given character.

B28. Write a Java program that accepts an integer (n) and computes the value of $n+nn+nnn$.

Input number: 5

5 + 55 + 555

B29. Write a Java program to display the system time.

B30. Write a Java program to print numbers between 1 to 100 which are divisible by 3, 5 and by both.

B31. Write a Java program to calculate the sum of two integers and return true if the sum is equal to a third integer.

Input the first number: 5

Input the second number: 10

Input the third number: 15

The result is: true

B32. Write a Java program that accepts two integer values between 25 to 75 and return true if there is a common digit in both numbers.

Input the first number: 35

Input the second number: 45

Result: true

B33. Write a Java program to compute the sum of the first 100 prime numbers.

B34. Write a Java program that accepts two double variables and test if both strictly between 0 and 1 and false otherwise.

Input first number: 5

Input second number: 1

false

B35. Write a Java program to break an integer into a sequence of individual digits. Test Data

Input six non-negative digits: 123456

Expected Output :

1 2 3 4 5 6

Topic - Array

Assignment Level Basic

B1. How do I initialize a String array?

B2. What is Array?

B3. How many types of array available?

B4. Is arrays are considered as primitive data types?

B5. How do I create a list from Array which is completely independent of the original array?

B6. What is the index of the first element in an array?

- B7. How do you print the content of an array in Java?
- B8. How do you print the content of a multi-dimensional array in Java?
- B9. Why is it a good practice to store sensitive information like password, SSN into a character Array rather than String?
- B10. Which algorithm does Arrays. Sort use in Java?
- B11. W.A.J.P to sort a numeric array and a string array.
- B12. W.A.J.P to sum values of an array.
- B13. W.A.J.P to calculate the average value of array elements.
- B14. W.A.J.P to test if an array contains a specific value.
- B15. W.A.J.P to find the index of an array element.
- B16. W.A.J.P to find the maximum and minimum value of an array.

Assignment Level Intermediate

- I1. W.A.J.P to remove a specific element from an array I2.
- W.A.J.P to copy an array by iterating the array.
- I3. W.A.J.P to insert an element (specific position) into an array.
- I4. W.A.J.P to reverse an array of integer values.
- I5. W.A.J.P to find the duplicate values of an array of integer values.
- I6. W.A.J.P to find the duplicate values of an array of string values. I7.
- W.A.J.P to find the second largest element in an array.

Assignment Level Advance

- A1. W.A.J.P to find the common elements between two arrays (string values).
- A2. W.A.J.P to compute the average value of an array of integers except the largest and smallest values.
- A3. W.A.J.P to check if the sum of all the 10's in the array is exactly 30. Return false if the condition does not satisfy, otherwise true.

Original Array: [0, 1, 0, 1, 1, 0, 1, 1, 0, 0, 1]

Array after segregation is: [0, 0, 0, 0, 0, 1, 1, 1, 1, 1]

A4. W.A.J.P to segregate all 0s on left side and all 1s on right side of a given array of 0s and 1s.

A5. W.A.J.P to cyclically rotate a given array clockwise by one.

Original array: [10, 20, 30, 40, 50, 60]

Rotated array: [60, 10, 20, 30, 40, 50]

Topic - String

Assignment Level Basic

- B1. Can String be referred as a datatype?
- B2. What is `toString()` method?
- B3. All the String objects created using String literals are stored in String pool?
- B4. Difference between `StringBuffer` and `StringBuilder`.
- B5. What is Immutable?
- B6. Is `String` is Immutable?
- B7. How do you create a `String` object?
- B8. What is the difference between creating `String` object using `new` and String literals?
- B9. What is Java String Pool?
- B10. Immutable objects are thread-safe?
- B11. Overriding `toString()` example.
- B12. What is String interpolation in Java?
- B13. Name the interfaces that Java String class implements.
- B14. How do I compare strings in Java?
- B15. Can we have case null in string switch case?
- B16. What is the default implementation of `equals` method in Object class?
- B17. 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

B8. W.A.J.P to concatenate a given string to the end of another string.

B19. 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

Assignment Level Intermediate

I1. 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

I2. 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

I4. 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

Assignment Level Advance

A1. W.A.J.P to find first non-repeating character in a string.

The given string is: gibblegabbler

The first non-repeated character in String is: i A2.

W.A.J.P to divide a string in an equal part.

The given string is: abcdefghijklmnopqrstuvwxyz

The string divided into 5 parts and they are:

abcde

fghij

klmno

pqrst

uvwxyz

A3. W.A.J.P to count and print all the duplicates in the input string.

The given string is: w3resource tops technologies

The duplicate characters and counts are: t
appears 2 times o appears 3 times so on.....

A4. W.A.J.P to return a string where every appearance of the lowercase word 'is' has been replaced with 'is not'.

The given string is: it is a string

The new string is: it is not a string

Topic – OOPs Concept

Assignment Level Basic

- B1. What is inheritance?
- B2. Which inheritance is not supported by Java? Why?
- B3. What is advantage of inheritance?
- B4. Difference between inheritance and encapsulation.
- B5. Difference between inheritance and abstraction.
- B6. Difference between inheritance and polymorphism.
- B7. Can we override static method in Java?
- B8. Can we overload static method in Java?
- B9. Can a class implement more than one interface?
- B10. Can a class extend more than one class in Java?
- B11. Can an interface extend more than one interface in Java?
- B12. What will happen if a class implements two interfaces and they both have a method with same name and signature?
- B13. Can we pass an object of a subclass to a method expecting an object of the super class?
- B14. Are static members inherited to sub classes?
- B15. What happens if the parent and the child class have a field with same identifier?
- B16. Are constructors and initializers also inherited to sub classes?
- B17. How do you restrict a member of a class from inheriting by its sub classes?
- B18. How do you implement multiple inheritance in java?

- B19. Can a class extend by itself in Java?
- B20. How do you override a private method in java?
- B21. When to overload a method in Java and when to override it?
- B22. What is the order of extends and implements keyword on Java class declaration?
- B23. How do you prevent overriding a Java method without using the final modifier?
- B24. What are the rules of method overriding in Java?
- B25. Difference between method overriding and overloading in Java.
- B26. What happens when a class implements two interfaces and both declare field (variable) with same name?
- B27. Can a subclass instance method override a superclass static method?
- B28. Can a subclass static method hide superclass instance method?
- B29. Can a superclass access subclass member?
- B30. Difference between object oriented and object based language.
- B31. Explain Diamond problem.
- B32. Why Java does not support operator overloading?
- B33. What is Encapsulation in Java?
- B34. Which of the Java OOPS feature promotes access protection or data hiding?
- B35. Create a class named "PrintNumber" to print various numbers of different datatypes by creating different methods with the same name "printn" having a parameter for each data type.
- B36. 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).
- B37. 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.
- B38. 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
- B39. Create a class named 'Member' having the following members:
Data members

- 1 - Name
- 2 - Age
- 3 - Phone number
- 4 - Address
- 5 - Salary

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

Two classes 'Employee' and 'Manager' inherits the 'Member' class. The 'Employee' and 'Manager' classes have data members 'specialization' and 'department' respectively. Now, assign name, age, phone number, address and salary to an employee and a manager by making an object of both of these classes and print the same.

B40. 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.

B41. 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.

B42. 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.

B43. 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.

B44. 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.

B45. 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.

Assignment Level Intermediate

I1. 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,

$1! = 1$

$0! = 0$

I2. 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

91-100 AA

81-90 AB

71-80 BB

61-70 BC

51-60 CD

41-50 DD

<=40 Fail

I4. 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.

Assignment Level Advance

A1. All the banks operating in India are controlled by RBI. RBI has set a well-defined guideline (e.g. minimum interest rate, minimum balance allowed, maximum withdrawal limit etc) which all banks must follow. For example, suppose RBI has set minimum interest rate applicable to a saving bank account to be 4% annually; however, banks are free to use 4% interest rate or to set any rates above it. Write a JAVA program to implement bank functionality in the above scenario and demonstrate the dynamic polymorphism concept. Note: Create few classes namely Customer, Account, RBI (Base Class) and few derived classes (SBI, ICICI, PNB etc). Assume and implement required member variables and functions in each class.

A2. Suppose a class 'A' has a static method to print 'Parent'. Its subclass 'B' also has a static method with the same name to print 'Child'. Now call this method by the objects of the two classes. Also, call this method by an object of the parent class referring to the child class i.e. A obj = new B ()

Topic - Exception

Assignment Level Basic

- B1. How are the exceptions handled in java?
- B2. Difference between Error and Exception in Java.
- B3. What are checked and unchecked exceptions?
- B4. How do we handle more Than One Type of Exception using catch block in Java?
- B5. What happens if an exception is thrown from the finally or catch block in Java?
- B6. Will the finally block be executed when the catch clause throws exception in Java?
- B7. What is a user defined/custom exception in Java?
- B8. Does a finally block always run in Java?
- B9. Does return statement allow finally block to execute in Java?
- B10. Should a catch block always follow try block in Java for Exception handling?
- B11. Difference between Error and runtime exceptions in Java.
- B12. Difference between throw and throws clause in Java.
- B13. Can try block exist without any catch and finally block in Java?
- B14. What is stack trace?
- B15. What is the order of catch blocks when catching more than one exception?
- B16. Can we use FileNotFoundException and IOException in Java multi catch?
- B17. Give few examples of checked exceptions.
- B18. Give few examples of unchecked exceptions.
- B19. Explain exception handling when overriding a method?
- B20. Can overridden method throw RuntimeException when original method throw ArithmeticException?
- B21. Can I write only try block without any catch and finally block?
- B22. Difference between final, finally and finalize in Java.
- B23. What is rethrowing an exception?
- B24. Explain the rules of Exception Handling in terms of Method Overriding?
- B26. 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.ArithmaticException:/ by zero

B27. 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;

B28. 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  
    }
```

B29. 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 Arithmetric

O/P-

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

Assignment Level Intermediate

I1. W.A.J.P to read 10 integer values using Scanner class from keyboard. Generate the exception if the entered value is less than 10 and or greater than 40. Program should display appropriate message as and when this exception occurs otherwise it will display all the entered values.

I2. 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 ArithmaticException otherwise print a message welcome to vote.

O/P- Enter your age :16

Exception in thread main java. lang. ArithmaticException: not valid

Assignment Level Advance

A1. 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.

A2. 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 userdefined exception 'AgeNotWithinRangeException'. If name contains numbers or special symbols raise exception 'NameNotValidException'. Define the two exception classes.

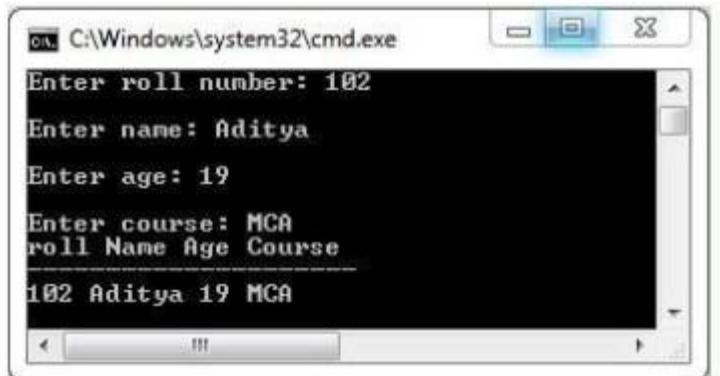
Output:

- When we enter invalid name or age



```
C:\Windows\system32\cmd.exe
Enter roll number: 101
Enter name: Adity@_
Enter age: 12
Enter course: BCA
NameNotValidException
Age is not between 15 and 21. please ReEnter the Age
roll Name Age Course
101 null @ BCA
```

- Enter valid name as well as age



```
C:\Windows\system32\cmd.exe
Enter roll number: 102
Enter name: Aditya
Enter age: 19
Enter course: MCA
roll Name Age Course
102 Aditya 19 MCA
```

Topic - Thread**Assignment Level Basic**

- B1. W.A.J. P to create one thread by implementing Runnable interface in Class.
- B2. W.A.J. P to create one thread by extending Thread class in another Class.
- B3. W.A.J.P to create 2 threads and execute that threads by providing sleep time as 2000ms and check the execution.
- B4.W.A.J.P to start the same Thread twice by calling start () method twice. TestThreadTwice1 t1=new TestThreadTwice1();

```
t1.start(); t1.start();
```

- B5.W.A.J.P to call run() method directly without calling start() method for 2 threads.

```
TestCallRun2 t1=new TestCallRun2();
TestCallRun2 t2=new TestCallRun2();
t1.run(); t2.run();
```

Assignment Level Intermediate

- I1. W.A.J.P to set the user defined name, priority and get that name and priority for 2 threads using setName (), setPriority (), getName (), getPriority () methods of Thread class.

```
TestMultiPriority1 m1=new TestMultiPriority1();
TestMultiPriority1 m2=new TestMultiPriority1();
m1.setName("mythread-1"); m2.setName("mythread-2");
m1.setPriority(Thread.MIN_PRIORITY);
m2.setPriority(Thread.MAX_PRIORITY);
m1.start();
m2.start();
```

- I2. W.A.J.P to create 2 threads and make one thread as DaemonThread by using setDaemon () method of Thread class and check whether the thread is set daemon or not by using isDaemon () method.

```
TestDaemonThread2 t1=new TestDaemonThread2();
TestDaemonThread2 t2=new TestDaemonThread2();
t1.start();
t1.setDaemon(true); //will throw exception here
t2.start();
```

Assignment Level Advance

A1. W.A.J.P to to create 3 threads and make one thread group for all 3 threads and use list () method to list all threads from group.

```
ThreadGroup tg1 = new ThreadGroup ('Group A');
Thread t1 = new Thread (tg1, new MyRunnable(),'one');
Thread t2 = new Thread (tg1, new MyRunnable(),'two');
Thread t3 = new Thread (tg1, new MyRunnable(),'three');
```

A2. W.A.J.P to create one class named First having method display () which display message with "["as,

```
public void display (String msg)
{
    System.out.print('['+msg);
    try
    {
        Thread.sleep(1000);
    }
    catch(InterruptedException)
    {
        a.printStackTrace ();
    }
    System.out.println(']');
}
```

Then create another class named Second by extending First class in it and use synchronized () method and use display () method in it. public void run ()

```
{
    synchronized(fobj) //Synchronized block
{
    fobj.display(msg);
}
}
```

First fnew= new First();

```
Second ss= new second(fnew, 'welcome');
Second ss1= new second (fnew,'new');
Second ss2 = new second(fnew, 'programmer'); o/p-
[welcome]
[new]
[programmer]
```

Topic - Collection

Assignment Level Basic

- B1. How do you initialize an ArrayList?
- B2. What is Java Collections Framework?
- B3. What is the difference between List and Set?
- B4. What is the difference between Map and Set?
- B5. What are the classes that implements List and Set interface?
- B6. What is an iterator?
- B7. What is the difference between Iterator and Enumeration?
- B8. What is the difference between HashMap and Hashtable?
- B9. What is the difference between Iterator and ListIterator?
- B10. What is the difference between Array and ArrayList in Java?
- B11. List the differences between LinkedList and ArrayList in Java.
- B12. Difference between Comparable and Comparator interface.
- B13. Write a Java program to create a new array list, add some colors (string) and print out the collection.
- B14. Write a Java program to iterate through all elements in a array list.
- B15. Write a Java program to insert an element into the array list at the first position.
- B16. Write a Java program to retrieve an element (at a specified index) from a given array list.
- B17. Write a Java program to update specific array element by given element.
- B18. Write a Java program to remove the third element from a array list.
- B19. Write a Java program to search an element in a array list.
- B20. Write a Java program to sort a given array list.
- B21. Write a Java program to copy one array list into another.

- B22. Write a Java program to shuffle elements in a array list.
- B23. Write a Java program to append the specified element to the end of a hash set.
- B24. Write a Java program to iterate through all elements in a hash list.
- B25. Write a Java program to get the number of elements in a hash set.
- B26. Write a Java program to associate the specified value with the specified key in a HashMap. B27. Write a Java program to count the number of key-value (size) mappings in a map.

Assignment Level Intermediate

- I1. Write a Java program to reverse elements in a array list.
- I2. Write a Java program to extract a portion of a array list.
- I3. Write a Java program to compare two array lists.
- I4. Write a Java program of swap two elements in an array list.
- I5. Write a Java program to join two array lists.
- I6. Write a Java program to convert a hash set to an array.
- I7. Write a Java program to convert a hash set to a List/ArrayList.
- I8. Write a Java program to check whether a map contains key-value mappings (empty) or not.

Assignment Level Advance

- A1. Write a Java program to increase the size of an array list.
- A2. Write a Java program to replace the second element of a ArrayList with the specified element.
- A3. Write a Java program to print all the elements of a ArrayList using the position of the elements.
- A4. Write a Java program to compare two sets and retain elements which are same on both sets. A5. Write a Java program to get a collection view of the values contained in this map.

Module 1[SQL]
Assignment
Topic - SQL
EMP TABLE:

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

1. Select unique job from emp table.
2. List the details of the emps in asc order of the Dptnos and desc of Jobs?
3. Display all the unique job groups in the descending order?
4. List the emps who joined before 1981.
5. List the Empno, Ename, Sal, Daily sal of all emps in the asc order of Annsal.
6. List the Empno, Ename, Sal, Exp of all emps working for Mgr 7369.
7. Display all the details of the emps whose Comm. Is more than their Sal.
8. List the emps who are either 'CLERK' or 'ANALYST' in the Desc order.
9. List the emps Who Annual sal ranging from 22000 and 45000.
10. List the Enames those are starting with 'S' and with five characters.

11. List the emps whose Empno not starting with digit78.
12. List all the Clerks of Deptno 20.
13. List the Emps who are senior to their own MGRS.
14. List the Emps of Deptno 20 whose Jobs are same as Deptno10.
15. List the Emps whose Sal is same as FORD or SMITH in desc order of Sal.
16. List the emps whose jobs same as SMITH or ALLEN.
17. Any jobs of deptno 10 those that are not found in deptno 20.
18. Find the highest sal of EMP table.
19. Find details of highest paid employee.
20. Find the total sal given to the MGR.
21. List the emps whose names contains 'A'.
22. Find all the emps who earn the minimum Salary for each job wise in ascending order.
23. List the emps whose sal greater than blakes sal.
24. Create a procedure with dno as input parameter to fetch ename and dname.
25. Add column Pin with bigint datatype in table student.
26. Modify the student table to change the sname length from 14 to 40.

Module 2[Android OS]

Assignment

Topic : Android OS

Assignment Level Basic

- B1 What is Android? [T]
- B2 Explain Android Architecture. [T]
- B3 What is R.java file [T]

Assignment Level Intermediate

- I1 Explain Gradle in Android. [T]

Topic : Activity

Assignment Level Basic

- B1 What is Activity and Explain Activity Lifecycle [T]

Assignment Level Intermediate

- I1 Write a code to display Splash Screen using Activity
- I2 Write a code to redirect user from one activity to another when button click.
- I3 Create an Android Application which Manage Activity Lifecycle Stages and Showing Toast with Performing Different Stages.
- I4 Create an Application to take input two numbers from users and when user press button then display sum of those values of next Activity.

Assignment Level Advance

- A1 Create an application take person details as input from one activity and display all those details on Second Activity. Pass Person details with single key
- A2 Create a calculator application

Topic : Intent**Assignment Level Basic**

- B1 Why we use intent? Explain Type of Intent with example. [T]

Assignment Level Intermediate

- I1 How Pass data from one activity to another activity explain with example. [T]
- I2 Call via intent , Send Sms via intent , mail via intent , share via intent

Topic : Fragment

Assignment Level Basic

- B1 What is Fragment and Explain difference between Activity and Fragment. Also Explain Fragment Lifecycle [T]
- B2 Write a code to redirect user from one fragment to another when button click.

Assignment Level Intermediate

- I1 Write a code to display Splash Screen using Fragment
- I2 Design Login and Registration Page using Fragment with proper validation.

Assignment Level Advance

- A1 Write a code to pass Person object from one fragment to another fragment

Module 3[Android UI]

Assignment

Topic - UI Controls

Assignment Level Basic

- B1 Explain View and ViewGroup [T]

Assignment Level Intermediate

- I1 Create an application to take input number from user and print its reverse number in TextView without button.
- I2 Create an application to input 2 numbers from user and all numbers between those 2 numbers in next activity
- I3 Create an application with radio buttons (Add, Subtraction, Multiply, Division) EditText (number1, number2) and print result as per user choice from radio button in TextView
- I4 Write a code to display login form when click on login button and registration form when click on registration button on single activity using fragment
- I5 Create an application to load google url into webview also manage forward and backward redirect
- I6 In Previous Practical write code to check weather internet connection is available or not if no internet connection then display message accordingly
- I7 create an application to hide TextView when first button click and show when second button click
- I8 Create an application to add TextView in TableLayout Programmatically
- I9 create an application to open pdf using implicit intent

Assignment Level Advance

- A1 create an application to share text, image from external storage

- A2 create an application to change background when button is clicked
- A3 create an application to increase font size when plus button click and decrease when minus button click
- A4 create an application to display n edittext where n is number input by user
- A5 create an application to display TextView when checkbox is checked and hide otherwise
- A6 Write a program to show four images around TextView.
- A7 Write a program to create one string array in string.xml file and that array show in ListView
- A8 Write a program in android display screen color which the Color will be select from the radio button.
- A9 Write a program you have take three seek bar controls. From three Seekbar which Seekbar value changed the background color of device will be changed.
- A10 . Create custom toolbar as per given below design
- A11 Create toolbar with spinner and search functionality

Topic - Webview

Assignment Level Intermediate

- I1 Take input from user side and search it on webview e.g. if user enter gmail it display gmail on webview
- I2 Create an application to load html file from assets folder into webview
- I3 Create an application to pass value between webpage and android activity using webview

Topic - Adapter

Assignment Level Basic

- B1 What is Adapter? List out Adapter which you know. [T]
- B2 difference between custom adapter and array adapter

Assignment Level Intermediate

- I1 Write a code to display city list into spinner using ArrayAdapter. also display Selected City name in TextView
- I2 Write a code to display city list into ListView using ArrayAdapter. also display Selected city in TextView
- I3 SearchView with ListView and RecyclerView
- I3 Write a code to display Employee name his position in ListView using SimpleAdapter

Assignment Level Advance

- A1 Write a code to display Employee photo , Name, Position and Joining Date in ListView using Custom Adapter.
- A2 Write a code to display Employee photo , Name, Position and Joining Date in RecyclerView. Use CardView to decorate row item. Display toast when any employee is clicked.
- A3 Write a code to display list of images in RecyclerView in Grid pattern and also perform its click event. Use CardView to decorate row item.
- A4 Write a code to input employee details like first name, last name, mobile, email and display that employee RecyclerView when press save button.
- A5 Create an application like WhatsApp using ViewPager, TabLayout and RecyclerView

A6 create an application to list out items added in cart with dummy data and also provide option to increase quantity also calculate total amount according to all product price and quantity

A7 Write a Program for Gridview. Inside Gridview display image as well as Rating bar with each image when user click on particular image then it will show rating of particular image in toast

A8 Create Gallery Like View using horizontal scroll view.

A9 Write a program to add name from the text view and insert into the listview. If you click on the list view then name should be show in the dialog box. When user press for 2 seconds on particular List item then open Context Menu (Delete Item, Edit Item, Exit). If user click on Delete Item then Open one Alert Dialog with message ("Are you sure want to delete Item?") and yes, no button if user press yes button then remove item from list. (Click a DELETE button, it gives a confirm box) If user click on Edit item then selected item display on EditText and again user click on button then this (updated item) should be replace with old item.

Topic - Dialogs

Assignment Level Basic

B1 What are different dialogs available in android. Explain each with example [T]

Assignment Level Intermediate

I1 Write a code to display simple alert dialog with title, description and icon when button is clicked

I2 Write a code to display alert dialog with positive, negative and neutral button and display toast respectively user's choice

I3 Write a code to display alert dialog with list of cities and Single choice selection display selected city in TextView

I4 open alert dialog when user want to exit from the application

I5 Wrte a code to select Date on button's click event

Assignment Level Advance

A1 Write a code to display alert dialog with list of cities and multi choice selection and display all selected cities in TextView

A2 In previous practical apply validation to select min date current date

A3 Write a code to select 2 dates using date picker and display total days, month, year between those 2 dates

A4 Write a code to display custom toast with yellow background and red TextView with Logo

A5 Write a code to display time picker dialog to select employee in time and out time both so accordingly calculate employee total time

A6 Write a code to display dialog with EditText, Textview and button display the value typed by user in toast view

Topic - Menus

Assignment Level Basic

B1 What are different menus in android. Explain each with example

B2 Write a code to display profile and logout option in options menu

B3 Write a code to display edit, view, delete options with context menu in listview and also perform respective operation on user's choice

Assignment Level Intermediate

I1 Write a code to display popup menu when user click button with edit, view, delete menu in.recyclerview row item

Assignment Level Advance

A1 Create an application like gmail and display fragment according to user selection and design each page with dummy data

A2 Create an application with bottom navigation with 3 tabs Gallery, audio and video and design each page with dummy data

Module 4[Offline/Online Storage]

Assignment

Topic - File Read/Write

Assignment Level Basic

B1 What are storage options in android. Explain each with example. [T]

Assignment Level Intermediate

I1 When application open first time at that time automatically create app name directory in external storage also ask for runtime write external storage permission

I2 create a application for read and write data using file on internal storage.

I3 create a application for read and write data using file on external storage.

I4 Write a program for read file to copy file from asset folder to external storage

I5 Write a program to show the HTML code (paragraph, image, color code table tags) in screen. This file gets from the asset folder.

Topic - Permissions

Assignment Level Advance

A1 Write an application to pick image from external storage and write on internal storage

A2 create a Phone call App when user first time open the app it will automatically generate one dialog which has two option allow,deny if click on allow permission is grant in settings

A3 create a program for take a permission of location when you fetch the current location in application

Topic - Shared Preference

Assignment Level Basic

- B1 Create an application for save, clear and retrieve the value in EditText using shared preference.
- B2 Make setting screen , change colors for application background from settings screen
- B3 Create an application with showcase view

Assignment Level Intermediate

- I1 Create an application with shared preference to maintain login and logout session
- I2 Create an application to manage Dynamic Preference Screens

Assignment Level Advance

- A1 Create an application to display Items in RecyclerView and provide button to add item into cart using shared preference
- A2 Display Items added into cart when press card button also provide button to remove from cart
- A3 Create an application with intro slider

Topic - Sqlite

Assignment Level Basic

- B1 Create an application of todo app using sqlite with function lite to create list of upcoming task, completed task, remove task, update task in daily activity.
- B2 Create a Sticky Notes app with proper customization which can insert,view,update,delete using Sqlite database

Assignment Level Intermediate

- I1 Create a task reminder app
- I2 create a registration and login system using sqlite database.

Assignment Level Advance

- A1 To create task management application for adding, updating, deleting the task and show the tasks in the listview or gridview. Task have name, description, date, time, priority.
 - To sort the task by the date and time wise.
 - If task is due then automatically show as blue color.
 - It will search the tasks by date wise.
 - If high priority then show as red color , average priority as blue color, low priority as green color.
 - Select specified item an open context menu to select "Complete the Task" then this task

is modified as gray color and stripe line over the all the statements (showable labels).

- Search task by name in the listview

A2 One Splash Screen, this screen will appear when application will start and this screen show on for three second. After three second splash screen will finish from application and launch Registration or Login Screen(if user first time install application at that time must appear Registration Screen)

After done registration process never show registration, only once time show registration page, second time directly open login page.

Registration information will be stored in sqlite database.

Also login process username,password will verify from database.

After Login in app show School Home Screen, this screen will contain Gallery name Button, School information Button, Faculty information Button, About us Button, on Home Screen. If press on Gallery at that time show school image gallery.

If press on school information button at that time show about school courses and standards with streams.

If press on faculty button at that time show all faculty information with respective subject and profile pictures.

If press on about us button this will show school contact detail address, etc

A3 Backup Sqlite Database on SD Card

A4 Use Sqlite database from assets folder

Topic - Realm

Assignment Level Advance

A1 Perform all sqlite practical with help of realm.

Topic - JSON parsing, AsyncTask, Okhttp

Assignment Level Basic

B1 How would you perform a long-running operation in an application? [T]

B2 Why do we use json? what are data types in json? [T]

B3 Why we use AsyncTask? explain each important methods of asynctask class. [T]

B4 what is difference between thread and asynctask? [T]

B5 How many threads are there in asynctask? [T]

B6 what is difference between json and xml? [T]

B7 difference between JSON and GSON [T]

Assignment Level Intermediate

I1 Parse the url : <http://services.groupkt.com/state/get/IND/all> display the all data in listview with proper customization

I2 Parse the Cricket API display the all data in listview with proper customization

I3 Parse all Railway API display the data in RecyclerView

Assignment Level Advance

- A1 Perform above 3 Practical with GSON library
- A2 Create an application to fetch data from <http://services.groupkt.com/state/get/IND/all> and display in TextView
- A3 In previous practical show Progress Bar while fetching data from server.
- A4 Download File from Server using AsyncTask
- A5 Create an application in which employee can login and register with mysql database
- A6 In previous application after logging employee can insert, update and delete project details
- A7 Create an application to select employee profile page in which employee can upload profile pic selected from gallery or camera after login to application

Topic - Retrofit**Assignment Level Basic**

- B1 Why we use Retrofit? [T]

Assignment Level Advance

- A1 Create an application in which employee can login and register with mysql database
- A2 In previous application after logging employee can insert, update and delete project details
- A3 Create an application to select employee profile page in which employee can upload profile pic selected from gallery or camera after login to application

Topic - Glide/Picasso**Assignment Level Advance**

- A1 Write a code to display List of images from mysql database using glide or picasso library.

Topic - Xml parsing**Assignment Level Basic**

- B1 Create an application to read Person details xml file from asset folder

Assignment Level Advance

- A1 Create an application to read News(title, link, description, image) from NDTV using RSS feed and display in RecyclerView.

Module 5[Advanced Android]**Assignment****Topic - Google Map****Assignment Level Basic**

- B1 What is Geocoding? [T]
- B2 Create an application to display google map with current location. also give options to change mode in map

Assignment Level Intermediate

- I1 Create an application to input address and display marker on that address
- I2 Create an application to suggest places as user type with help of Place autocomplete service provide by google

Assignment Level Advance

- A1 Create an application to display nearby ATM, Restaurant, Garden, Bank, Coffee shop etc.
- A2 Create an application to find distance between two given location.

Topic - Animation**Assignment Level Basic**

- B1 Explain different types of animation available in android [T]

Assignment Level Intermediate

- I1 Write a code to rotate image
- I2 Write a code to blink image
- I3 Write a code to move image from one place to another place
- I4 Write a code to zoom in / out image using animation
- I5 Write a code to show progress frame by frame animation

Assignment Level Advance

- A1 set animation on splash screen with app logo

Topic - Broadcast Receiver**Assignment Level Basic**

- B1 Explain Broadcast Receiver in android with example.;

Assignment Level Intermediate

- I1 create a application for alarm clock with snooze functionality
- I2 create a stopwatch application

Assignment Level Advance

- A1 Create an application to read OTP sent on mobile using broadcast receiver

Topic - Service

Assignment Level Basic

- B1 What is service in android. how many types of service? explain each.

Assignment Level Intermediate

- I1 Write code to play song in background using service

Assignment Level Advance

- A1 Create an application to download video using service
- A2 To create service for when call is coming for specified number then automatically silent.

Topic - Firebase

Assignment Level Intermediate

- I1 Create an application to authenticate user using Firebase Authentication.
- I2 Create an application to manage user information like firstName, lastName, mobile, Email, Gender, etc using Firebase Database after login

Assignment Level Advance

- A1 Create an application to store user Profile picture into firebase using Firebase Storage
- A2 Create an application to send notification to user using Firebase Cloud Messaging(FCM)
- A3 create a application for OTP verification using firebase once you have done verification data will be stored using sharedpreference

Topic - Social Media

Assignment Level Intermediate

- I1 Create an application to login using facebook and also display facebook profile of user after login
- I2 Create an application to login using Twitter and also display twitter account information after login

Assignment Level Advance

- A1 Fetch friendlist from facebook after login and write a code to post on facebook

Topic - Notification

Assignment Level Basic

- B1 Write a Code to display Notification when button is clicked.
- B2 Write a code to display image in notification

Assignment Level Intermediate

- I1 Add direct reply in notification
- I2 Add progress bar in notification

Assignment Level Advance

- A1 Write a code to display next, previous, pause icon in notification when song played in service in background

Topic - MediaPlayer

Assignment Level Basic

- B1 Create an application to play song from raw resource folder
- B2 Create an application to play song from mobile memory
- B3 Create an application to play song from Server

Assignment Level Intermediate

- I1 write a code to track song time and also use seekbar to show song progress
- I2 Write an application to play video from server using video view

Assignment Level Advance

- A1 Write an application to play video from server using surfaceview and Mediaplayer

A2 play video from youtube API

Module 6[Publish App]

Assignment

Topic - WakeLock

Assignment Level Basic

- B1 Explain situation when we can use wake lock? [T]
B2 Create an application with 2 button start wake lock when one button click and release when other button click

Assignment Level Advance

- A1 use WAKE LOCK when playing video play

Topic – Text To Speech

Assignment Level Basic

- B1 Create an application to convert text typed in edit text into speech

Topic - SpeechToText

Assignment Level Advance

- A1 create a application for name ringtone maker first set the prefix and postfix as mentioned in below screenshot you have to enter your name on edittext and set the volume ,speech rate and pitch and play this ringtone or you can save it in your storage.

Topic - Camera

Assignment Level Basic

- B1 when you click on the Button it will open the camera and click the photo, photo have to display on same page in Imageview

Assignment Level Intermediate

- I1 when you click on the Button it will open the camera and click the photo, photo have to saved in gallary

Assignment Level Advance

- A1 Capture image from camera and set as a wallpaper on device background

Topic - bluetooth,wifi

Assignment Level Basic

- B1 Create a application for bluetooth on,off,discoverable
- B2 Create a application for wifi on,off

Assignment Level Intermediate

- I1 Create a application for fetch the all discoverable device in listview and done the connection(Bluetooth)
- I2 Create a application for fetch all the wifi available device in listview and done the connection(WIFI)

Assignment Level Advance

- A1. Create an application to pass data between two devices using bluetooth
- A2 Create an application to pass data between two devices using wifi

Topic - Content Provider

Assignment Level Basic

- B1 Explain Content Provider [T]

Assignment Level Intermediate

- I1 read all contacts from contactbook and display in.recyclerview
- I2 Add new contact

Assignment Level Advance

- A1 Read audio and video from external storage

Topic - Publish app

Assignment Level Intermediate

- I1 Write steps to publish application on play store [T]

Topic - Ad mob

Assignment Level Advance

- A1 Write steps to add advertise [T]

PYTHON

Module 1**Assignment**

Topic: Core Python concepts
Introduction of python, If, If- else, Nested if-else, while,for-loop

Assignment Level Basic

- B1.What is Python ,Name some of the features of Python.
- B2: Write a Python program to get the Python version you are using?
- B3.Is python the right choice for Web based Programming?
- B4.Why was the language called as Python?
- B5.Write a Python program to check if a number is positive, negative or zero.
- B6.What is the language from which Python has got its features or derived its features?
- B7. Write a Python program to check if variable is of integer or string.
- B8.Does python support switch or case statement in Python?
If not what is the reason for the same?
- B9.How Python is interpreted?
- B10:- Write a Python program to get the Factorial number of given number
- B11:- Write a Python program to get the Fibonacci series of given range
- B12.How memory is managed in Python?
- B13.What is namespace in Python?
- B14.What is the purpose continue statement in python?

Assignment Level Intermediate

- I1: Write python program that swap two number with temp variable and without temp variable
- I2:- Write a Python program to find whether a given number is even or odd, print out an appropriate message to the user.
- I3:- : Write a Python program that compute the area of following
1) Triangle (accepts base and height)2) Circle (accept radius)
- I4:- Write a Python program to test whether a passed letter is a vowel or not

I5:-Write a Python program to compute the value of a specified principal amount, rate of interest, and a number of years

I6.What are the tools that help to find bugs or perform static analysis?

I7.What are Python decorators?

I8.What is PEP 8?

Assignment Level Advance

A1:- Write a Python program to sort three integers without using conditional statements and loops.

A2:- Write a Python program that accepts an integer (n) and computes the value of $n+nn+nnn$.

A3:- Write a Python program to sum of three given integers.
However, if two values are equal sum will be zero.

A4:- Write a Python program that will return true if the two given integer values are equal or their sum or difference is 5.

A5:- Write a python program to sum of the first n positive integers

Module 1

Assignment

Topic: String manipulation
Accessing String,Basic Operation,String slice,Function and method

Assignment Level Basic

B1.Write a Python program to calculate the length of a string.

B2.Write a Python program to count the number of characters (character frequency) in a string

B3. What are negative indexes and why are they used?

- B4. Explain split(), sub(), subn() methods of “re” module in Python.
- B5. How do you perform pattern matching in Python? Explain
- B6. Write a Python program to count occurrences of a substring in a string
- B7. Write a Python program to count the occurrences of each word in a given sentence

Assignment Level Intermediate

- I1. Write a Python program to get a single string from two given strings, separated by a space and swap the first two characters of each string.
- I2. Write a Python program to add 'ing' at the end of a given string (length should be at least 3). If the given string already ends with 'ing' then add 'ly' instead. If the string length of the given string is less than 3, leave it unchanged
- I3. Write a Python program to find the first appearance of the substring 'not' and 'poor' from a given string, if 'not' follows the 'poor', replace the whole 'not'...'poor' substring with 'good'. Return the resulting string.
- I4. Write a Python function that takes a list of words and returns the length of the longest one.
- I5. Write a Python function to reverses a string if it's length is a multiple of 4

Assignment Level Advance

A1. Write a Python program to get a string made of the first 2 and the last 2 chars from a given a string. If the string length is less than 2, return instead of the empty string.

Go to the editor

Sample String : 'w3resource'

Expected Result : 'w3ce'

Sample String : 'w3'

Expected Result : 'w3w3'

Sample String : ' w'

Expected Result : Empty String

A2. Write a Python program to get a string from a given string where all occurrences of its first char have been changed to '\$', except the first char itself

A3. Write a Python function to insert a string in the middle of a string.

Module 2[Collections]

Assignment

Topic: List

Introduction, Accessing List, Operation Working with list, function and method

Assignment Level Basic

B1. What is List? How will you reverse a list?

B2. How will you remove last object from a list?

B3. Suppose list1 is [2, 33, 222, 14, 25], What is list1[-1] ?

B4. Differentiate between append() and extend() methods.?

B5. Write a Python function to get the largest number ,
smallest num and sum of all from a list

B6. How will you compare two lists?

Assignment Level Intermediate

I1. Write a Python program to count the number of strings where the string length is 2 or more and the first and last character are same from a

given list of strings.

I2. Write a Python program to remove duplicates from a list

I3. Write a Python program to check a list is empty or not.

I4. Write a Python function that takes two lists and returns True if they have at least one common member

I5. Write a Python program to generate and print a list of first and last 5 elements where the values are square of numbers between 1 and 30

I6. Write a Python function that takes a list and returns a new list with unique elements of the first list

I7. Write a Python program to convert a list of characters into a string

Assignment Level Advance

A1. Write a Python program to select an item randomly from a list.

A2. Write a Python program to find the second smallest number in a list.

A3. Write a Python program to get unique values from a list

A4. Write a Python program to check whether a list contains a sublist

A5. Write a Python program to split a list into different variables.

Module 2[Collections]

Assignment

Topic: Tuple

Introduction, Accessing tuple, Operations, Working, function and method

Assignment Level Basic

B1. What is tuple? Difference between list and tuple

B2. Write a Python program to create a tuple with different data types

B3. Write a Python program to create a tuple with numbers

B4. Write a Python program to convert a tuple to a string

B5. Write a Python program to check whether an element exists within a tuple

B7. Write a Python program to find the length of a tuple.

B6. Write a Python program to convert a list to a tuple

Assignment Level Intermediate

I1. Write a Python program to reverse a tuple

I2. Write a Python program to replace last value of tuples in a list

i3. Write a Python program to find the repeated items of a tuple

Assignment Level Advance

A1. Write a Python program to remove an empty tuple(s) from a list of tuples.

A2. Write a Python program to unzip a list of tuples into individual lists

A3. Write a Python program to convert a list of tuples into a dictionary

Module 2[Collections]

Topic: Dictionaries

Introduction, Accessing value in Dictionaries, working with Dictionaries, properties

Assignment Level Basic

B1. What is Dictionaries?

B2. How will you create a dictionary in python? How will you get all the keys from the dictionary?

How will you get all the values from the dictionary?

B3. How will you create a dictionary using tuples in python?

B4. Write a Python script to sort (ascending and descending) a dictionary by value

- B5. Write a Python script to concatenate following dictionaries to create a new one
- B6. Write a Python script to check if a given key already exists in a dictionary
- B7. How Do You Traverse Through A Dictionary Object In Python?
- B8. How Do You Check The Presence Of A Key In A Dictionary?

Assignment Level Intermediate

I1 Write a Python script to print a dictionary where the keys are numbers between 1 and 15 (both Sample Dictionary

{1: 1, 2: 4, 3: 9, 4: 16, 5: 25, 6: 36, 7: 49, 8: 64, 9: 81, 10: 100, 11: 121, 12: 144, 13: 169, 14: 196, 15: 225}

I2. Write a Python program to check multiple keys exists in a dictionary

I3. Write a Python script to merge two Python dictionaries

I4. Write a Python program to map two lists into a dictionary

I5. Write a Python program to combine two dictionary adding values for common keys.

d1 = {'a': 100, 'b': 200, 'c': 300}

d2 = {'a': 300, 'b': 200, 'd': 400}

Sample output: Counter({'a': 400, 'b': 400, 'd': 400, 'c': 300})

I6 .Write a Python program to print all unique values in a dictionary.

I7. Why Do You Use The Zip() Method In Python?

Assignment Level Advance

A1. Write a Python program to create and display all combinations of letters, selecting each letter from a different key in a dictionary.

Sample data : {'1':['a','b'], '2':['c','d']}

Expected Output:

ac
ad
bc
bd

A2. Write a Python program to find the highest 3 values in a dictionary

A3. Write a Python program to combine values in python list of dictionaries.

Sample data: [{ 'item': 'item1', 'amount': 400}, { 'item': 'item2', 'amount': 300}, { 'item': 'item1', 'amount': 750}]

Expected Output: Counter({ 'item1': 1150, 'item2': 300})

A4. Write a Python program to create a dictionary from a string.

Note: Track the count of the letters from the string.

Sample string : 'w3resource'

Expected output: {'3': 1, 's': 1, 'r': 2, 'u': 1, 'w': 1, 'c': 1, 'e': 2, 'o': 1}

Module 3 [functions]

Topic : Function and method

Assignment Level Basic

B1. Write a Python function to calculate the factorial of a number (a non-negative integer)

B2. Write a Python function to check whether a number is in a given range

B3. Write a Python function to check whether a number is perfect or not.

B4. Write a Python function that checks whether a passed string is palindrome or not

B5. How do you perform pattern matching in Python? Explain

B6. What is lambda function in python? What we call a function which is incomplete version of a function?

B7. How Many Basic Types Of Functions Are Available In Python?

Assignment Level Intermediate

- I1. Write a Python program to access a function inside a function.
- I2. Write a Python program to detect the number of local variables declared in a function.
- I3. What is map function in Python?
- I4. Does Python Have A Main() Method?
- I5. What Does The *Args Do In Python? What Does The **Kwargs Do In Python?
- I6. What Does The __Name__ Do In Python? What Is The Purpose Of “End” In Python?
- I7. What Does The Len() Function Do In Python? What Does The Ord() Function Do In Python?

Assignment Level Advance

- A1. Name few methods that are used to implement Functionally Oriented Programming in Python?
- A2. Write a program in Python to reverse a string without using inbuilt function reverse string?

Module 4 [Modules]

Topic: Module

importing module,math module,random module,packages

Assignment Level Basic

- B1. How can you pick a random item from a list or tuple?
- B2. How can you pick a random item from a range?
- B3. How can you get a random number in python?
- B4. How will you set the starting value in generating random numbers?
- B5. How will you randomizes the items of a list in place?

Assignment Level Intermediate

- I1. Write a Python program to read a random line from a file.
- I2. Write a Python program to convert degree to radian
- I3. Write a Python program to calculate the area of a trapezoid
- I4. Write a Python program to calculate the area of a parallelogram
- I5. Write a Python program to calculate surface volume and area of a cylinder
- I6. Write a Python program to returns sum of all divisors of a number
- I7. Write a Python program to find the maximum and minimum numbers from the specified decimal numbers.

Assignment Level Advance

- A1. Write a Python program to find the sum of the following decimal numbers and display the numbers in sorted order

Decimal numbers : 2.45, 2.69, 2.45, 3.45, 2.00, 0.04, 7.25

Expected Output :

Sum: 20.33

Sorted order: [Decimal('0.04'), Decimal('2.00'), Decimal('2.45'), Decimal('2.45'), Decimal('2.69'), Decimal('3.45'), Decimal('7.25')]

- A2. Write a Python program to get the square root and exponential of a given decimal number

- A3. Write a Python program to add, subtract, multiply and divide two fractions.

Expected Output :

$$\frac{2}{3} + \frac{3}{7} = \frac{23}{21}$$

$$\frac{2}{3} - \frac{3}{7} = \frac{5}{21}$$

$$\frac{2}{3} * \frac{3}{7} = \frac{2}{7}$$

$$\frac{2}{3} / \frac{3}{7} = \frac{14}{9}$$

Module 5[Input-Output]

Topic: Input-output

Printing on screen,reading data from keyboard,opening and closing console file

Assignment Level Basic

- B1.What is File function in python?what is keywords to create and write file
- B2.Write a Python program to read an entire text file
- B3.Write a Python program to append text to a file and display the text.
- B4. Write a Python program to read first n lines of a file
- B5. Write a Python program to read last n lines of a file

Assignment Level Intermediate

- i1. Write a Python program to read a file line by line and store it into a list
- i2. Write a Python program to read a file line by line store it into a variable.
- i3. Write a python program to find the longest words
- i4.. Write a Python program to count the number of lines in a text file.
- i5. Write a Python program to count the frequency of words in a file
- i6.. Write a Python program to write a list to a file.
- i7. Write a Python program to copy the contents of a file to another file

Assignment Level Advance

- A1.Write a Python program to read a random line from a file.
- A2. Write a Python program to assess if a file is closed or not
- A3. Write a Python program to remove newline characters from a file.

Module 6[Exception Handling]

Topic: Exception Handling Exception,Except clause,Try and finally

Assignment Level

Basic

B1:Explain Exception handling?What is an Error in Python?

B2. How many except statements can a try-except block have?

Name Some built-in exception classes:

B3. When will the else part of try-except-else be executed?

B4. Can one block of except statements handle multiple exception?

B5. When is the finally block executed?

B6. What happens when „1“ == 1 is executed?

b7. How Do You Handle Exceptions With Try/Except/Finally In Python?

expalin with coding snippets

b8.write python program that user to enter only odd numbers, else will raise an exception.

Assignment Level Intermediate

I1.write program for Catching Specific Exceptions in Python

I2.write python program for file operations to makes sure the file is closed even if an exception occurs.

I3.Explain Python Errors and Built-in Exceptions with coding snippets

Assignment Level

Advance

A1Explain .User-Defined Exception in Python

A2 write a program that will ask the user to enter a number until they guess a stored number correctly.

A3. What is Assertions in Python? Write function that converts a temperature from degrees Kelvin to degrees Fahrenheit

A4. Write program that except Clause with No Exceptions

A5. What is Argument of an Exception? Explain with coding snippets

Module 7[OOPS Concept] Assignment

**Topic: Advance python
class,object,attributes,inheritance,overloading**

Assignment Level Basic

B1:-what are oops concepts?is multiple inheritance supported in java

B2:How To Define a Class in Python?What Is Self?Give An Example Of A Python Class

B3.. Write a Python class named Rectangle constructed by a length and width and a method which will compute the area of a rectangle

B4. Write a Python class named Circle constructed by a radius and two methods which will compute the area and the perimeter of a circle

B5. Write a Python class named Circle constructed by a radius and two methods which will compute the area and the perimeter of a circle

B6.Explain Inheritance in Python with an example.?What Is `__init__`?
Or What Is A Constructor In Python?

B7. What is Instantiation in terms of OOP terminology?

B8What is used To check whether an object o is an instance of class A?

B9.What relationship is appropriate for Course and Faculty?

B10.What relationship is appropriate for Student and Person?

Assignment Level Intermediate

- I1.Which function overloads the + operator?Which operator is overloaded by __invert__()?
- I2.Which function overloads the >> operator?
- I3.Create a class called Numbers, which has a single class attribute called MULTIPLIER, and a constructor which takes the parameters x and y (these should all be numbers).

Assignment Level Advance

- A1.Write a Python class to implement pow(x, n)

Module 8[Regular Expression] Assignment

Topic: Regular Expression
Match,serach,matching vs searching,modifiers

Assignment Level Basic

- B1.Does Python support strongly for regular expressions?
What are the other languages that support strongly for regular expressions?

- B2.Write a Python program that matches a string that has an a followed by zero or more b's

- B3.Write a Python program to check that a string contains only a certain set of characters (in this case a-z, A-Z and 0-9)

- B4. Write a Python program where a string will start with a specific number
B5.Write a Python program to check for a number at the end of a string

Assignment Level Intermediate

- I1. Write a Python program to find sequences of lowercase letters joined with a underscore.
- I2.. Write a Python program that matches a word containing 'z', not start or end of the word.
- I3. Write a Python program to separate and print the numbers and their position of a given string
- I4. Write a Python program to replace all occurrences of space, comma, or dot with a colon
- I5. Write a Python program to remove all whitespaces from a string
- I6. Write a Python program to remove everything except alphanumeric characters from a string

Assignment Level Advance

- A1. Write a Python program to remove multiple spaces in a string.
- A2. Write a Python program to insert spaces between words starting with capital letters
- A3. Write a Python program to remove words from a string of length between 1 and a given number
- A4. Write a Python program to find all words which are at least 4 characters long in a string

Module 9[Networking]

Assignment

Topic: CGI
**introduction,architecture,acgi enviroment varaible,get and post
method,cookies,fileupload**

Assignment Level Basic

- B1.What is CGI programming?What is Python CGI?
- B2.How do I run a Python script on Windows Apache?
- B3.explain CGI Architecture
- B4.write hello world program using CGI program

B5.what is CGI Enviorment variable?what is difference between GET and POST method?

B6.what is cookies?How It Works?

B7.how to set and Retrieve Cookies?exaplin with coding snippets

B8.write python program to upload file using cookies

B9.write python CGI program structure

Assignment Level Intermediate

I1.Write a Python program which passes two values to hello_get.py program using GET method.

I2.What is Cgitb in Python?

I3. Write a Python programfor Passing Checkbox Data to CGI Program

I4. Write a Python program for Passing Radio Button Data to CGI Program

I5. Write a Python program for Passing Text Area Data to CGI Program

I6. Write a Python program for Passing Drop down Data to CGI Program

Assignment Level Advance

A1.How To Raise a "File Download" Dialog Box?

Module 10[Multithreading] Assignment

TOPIC: Multithreading

Assignment Level Basic

B1.How To Use The Thread Module To Create Threads?

how to detect the status of a python thread?Which method is used to identify a thread?

B2.What is the method that wakes up all thread waiting for the condition?

What are the libraries in Python that support threads?

B3.What are the lock types a Condition object can associate with?

B4.How Is Python Thread Safe?

B5.Which Python library runs a function as thread?

How does run() method is invoked?

B6.How to terminate a blocking thread?

What is the method to retrieve the list of all active threads?

B7.Create A Thread Class To Print The Date

Assignment Level Intermediate

I1.What would be the impact of multithreading on a uni-processor system?

I2.Which thread method is used to wait until it terminates?

What are the states/features supported by a Lock object?

Module 11(Gui programming)

Assignment

TOPIC: GUI Programming tkinter programming and widgets

Assignment Level Basic

B1.how tkinter used in python?

B2/.How do you create a window and frame?

B3.How do you create an event loop?

B4.what is used To create a label under parent window?

B5.what is used To create a button under parent window with command processButton?

B6.How do you create a GUI component for displaying multiple-lines of text?

B7.How do you draw a rectangle centered at 100, 100 with width 100 and height 100 on canvas?

B8.How do you draw a red line from 100, 100 to 400, 500?

Assignment Level Intermediate

I1.Assume v1 = IntVar(), how do you set a new value 5 to v1.

I2.what is used To add a menubar?

I3.what is used to display a popup menu?

I4.what are property The mouse event object has ?

Module 12[Database]**Assignment****Topic: Database****introduction,connection,executing query,transactions****Assignment Level Basic**

- B1.What database does Python use?What database API includes?>
- B2.Explain benefit of python database programming
- B2.What is PyMySQL in Python?
- B3.How does Python integrate with SQL?
- B4.What is MySQLdb Python?What is Generic database interface?

Assignment Level Intermediate

- I1.what is relational database system interface?
- I2.Write crud program using sql connection

Assignment Level Advance

- A1.make login application using python connectivity
- A2What are .Cursor objects?
- A3.What is Error and exception handling in DB-API

TOPIC: Designing

Html,css,javascript,ajax

Assignment Level Basic

B1.Create a simple web site using frame set. Each page of web site should contain header, menu,content area and footer. When I click on any link in menu, the related page should open in the content area.

B2.Create three pages and apply formatting to each of them using inline, internal and external Css respectively.

B3.Create a tabular layout using divisions and css floating

B4.Create a page with a division. Apply border, font color, background color and more using css. Where division should resize when the browser window resizes.

Assignment Level Intermediate

I1.place an image in top right corner of the page. The image should remain at that position even the page scrolls.

I2.Create link-pseudo classes using external css, to format links on the pages

I3.Create a Internal JavaScript for display an alert on Page Load

I4.Create a External JavaScript which takes an input from user and display in Alert.

I5.Print a Confirm message on Button click If user click ok then another alert should be there and if user clicks on cancel then cancellation message should be display.

I6.Write a JavaScript to change the image source on button click

I7.Create a simple table with two rows and two columns using JavaScript document.write() function

Assignment Level Advance

A1.Implement the Following event. OnClick, OnMouseHover, OnMouseOut..

A2.Create a division which should not resize on browser resize

A3.Create an elastic page layout.

Module 13[Django Framework]**Assignment****TOPIC: WEB programming****client-server architecture,advance django****Assignment Level Basic**

B1.Why Django should be used for web-development?Explain how you can create a project in Django?

B2.how to check installed version of django?

B3. Mention what command line can be used to load data into Django?

Assignment Level Intermediate

I1.Explain what does django-admin.py makemessages command is used for?

I2what is .Django URLs?make program to create django urls

I3What is a QuerySet?Write program to create a new Post object in database:

I5.Mention what command line can be used to load data into Django?

I6..Explain what does django-admin.py makemessages command is used for?

I7.Write django appliocation to demonstarte following things.

1:)Need to use bootstrap template

2)There will be 2 Modules(User,Admin)

3)User have to register to site using (id,Firstname,lastname,password,Email,Mobile,city,gender,profile pic) .data should store in database

3.1)Email should send to its registered email id With message (Thanks for Registration)

3.2)Registered user can login using email id and password and redirected to homepage otherwise error message to be shown on same page

3.3)All field should validated with required filed and mobile number should have

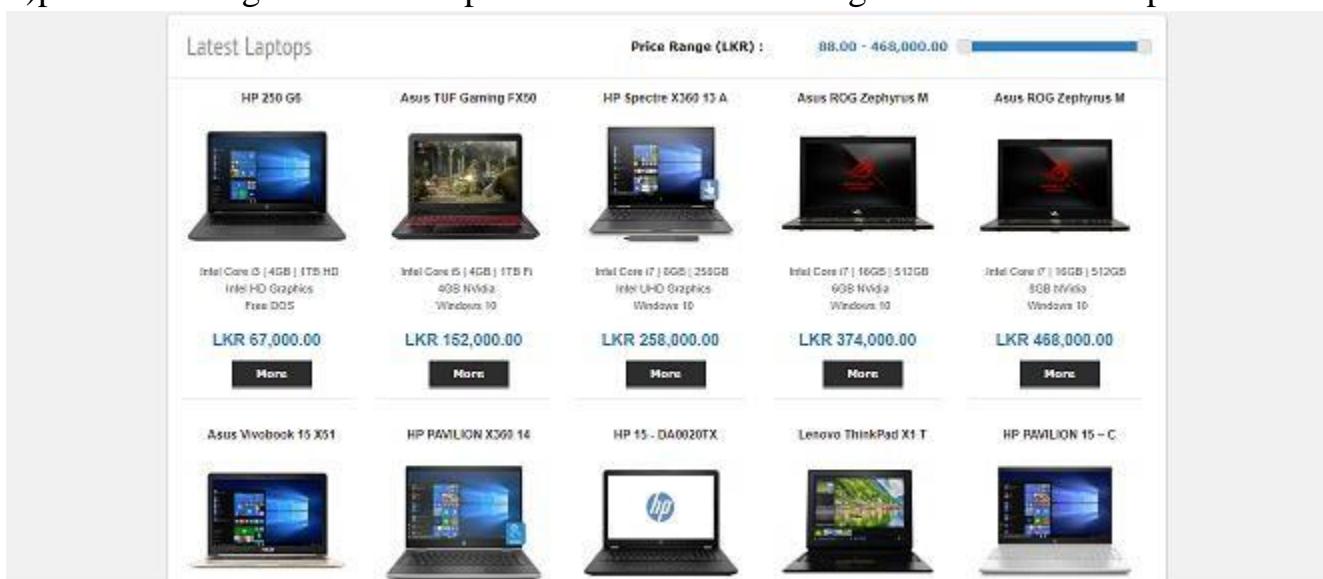
10 digit and email id should be on proper format

3.4)User can edit all its detail

Assignment Level Advance

A1. Make Django application to demonstrate following things

- 1) There will be 2 modules(Admin, Product manager)
- 2) Admin can add product name(ex. Product id and product name) ex.(1,Samsung), (2,Apple)..etc Data should store in Product_mst table with product id as primary key
- 3) Admin can add product sub_Category details Like (Product price, product image, product model, product Ram) data should store in Product_sub_cat table
- 4) Admin can get product name as foreign key from product_mst table in product_sub_category_details page
- 5) Admin can view, update and delete all registered details of product
- 6) product manager can search product on searchbar and get all details about product



A2) Deploy project on github using python command

IOT

IOT Assignment

Module 1:

1. What is IoT and why you need IoT ?
2. State some domain where IoT Implement in real life.

Module 2:

1. What is single board microcontroller and single board computer and give some Example of both boards.
2. What is Arduino environment? Define Arduino board's component.
3. List out some different Arduino board and elaborate difference between them.
4. How to install any microcontroller board in Arduino IDE.
5. List down steps for adding nodemcu and Adafruit trinket.
6. How to add any library in Arduino using library manager and how to use any .zip library in Arduino IDE.

Module 3:

Topic: Function and method

1. Write a Python function to calculate the factorial of a number (a non-negative integer)
2. Write a Python function to check whether a number is in a given range
3. Write a Python function to check whether a number is perfect or not.
4. Write a Python function that checks whether a passed string is palindrome or not
5. How do you perform pattern matching in Python? Explain
6. What is lambda function in python? What we call a function which is incomplete version of a function?
7. How Many Basic Types of Functions Are Available In Python?

Topic: List Introduction, Accessing List, Operation Working with list, function and method

1. What is List? How will you reverse a list?
2. How will you remove last object from a list?
3. Suppose list1 is [2, 33, 222, 14, 25], What is list1[-1] ?
4. Differentiate between append() and extend() methods.?
5. Write a Python function to get the largest number , smallest num and sum of all from a list
6. How will you compare two list.

Topic: Dictionaries

1. What is Dictionaries?
2. How will you create a dictionary in python? How will you get all the keys from the dictionary? How will you get all the values from the dictionary?

3. How will you create a dictionary using tuples in python?
4. Write a Python script to sort (ascending and descending) a dictionary by value
5. Write a Python script to concatenate following dictionaries to create a new one
6. Write a Python script to check if a given key already exists in a dictionary
7. How Do You Traverse Through A Dictionary Object In Python?
8. How Do You Check The Presence Of A Key In A Dictionary?

Module 4:

1. list down types of sensors with example and how to change range of sensor?
2. Write down specification of PIR motion sensor.
3. Draw circuit diagram for Arduino and PIR sensor connection.
4. Make a project of smart home appliances.(turn bulb on/off or control any appliances detecting human body)
5. Give 3 real life implementation of PIR motion Sensor with flow of working process.
6. Write down specification of Ultrasonic sensor.
7. Give 3 real life implementation of ultrasonic Sensor with flow of working process.
8. Make smart door and smart dustbin using ultrasonic sensor.
9. Write down specification of DHT11.
10. Draw circuit diagram for Arduino and DHT11.
11. Give 3 real life implementation of DHT11 Sensor with flow of working process.
12. Make fire safety system using DHT11. (water pump will turn on detecting fire).
13. Write down specification of Soil moisture sensor.
14. Draw circuit diagram for Arduino and soil moisture sensor connection.
15. Make smart irrigation system using soil moisture sensor.
16. Write down specification of Bluetooth module(HC-05)
17. How to connect different device using Bluetooth module.
18. Write a code for controlled using Arduino over Bluetooth connection.
19. Project: Controlling bulb using HC-05 module.
20. What is AT command? Write down a code for passing AT command to Bluetooth module.
21. Write specification of Nodemcu with pin description.
22. List every step for adding nodemcu into Arduino.
23. How can we change configuration to use nodemcu as wi-fi and hot-spot.
24. Write code for controlling led from mobile using nodemcu.

Module 5:

1. How to write a php script for turning on/off bulb.
2. How to fetch data in Arduino using web service?
3. List down steps for controlling any device connected to Arduino using web?

4. Send data of soil moisture sensor over web.
5. Briefly explain home automation project using web service (using 000webhost) with every code.
6. Control speed of dc fan over web using raspberry pi.

Module: 6

1. What is MQTT protocol?
2. How to connect MQTT with Arduino or Raspberry pi?
3. What is DDS protocol? And why it is important in IOT?
4. How to connect DDS with Arduino or Raspberry pi ?
5. What is AMQP protocol?
6. How to connect AMQP with Arduino or Raspberry pi ?
7. What is Lora-WAN ?
8. How to connect Lora with Arduino or Raspberry pi ?
9. How to connect GSM module with Arduino and Raspberry pi for GSM and GPS support.
10. What is “frequency band” term used in GSM module?
11. Write down functionality of GSM module and list down applications of GSM.
12. Project: send data of DHT11 over SMS.
13. Send GPS data using GPS and GSM module.
14. List down Benefits of wi-fi over Bluetooth or any network.
15. How to give wi-fi support to Arduino?
16. Control attendance data over wi-fi . (use RFID reader and tag or fingerprint scanner for attendance data)

ETHICAL HACKING

Ethical Hacking Assignment

Module 1: Introduction to Ethical Hacking

Beginner Question

- 1.What is the use of ethical hacking?
- 2.What are the types of hacking?

Intermediate Question

- 1.What are the different types of hacking methods?
- 2.Explain Information Security Threat Categories

Advance question

- 1.What are the advantages and disadvantages of hacking?
- 2.Types of Security Policies
- 3.Explain Penetration testing three-phase process

Module 2: Footprinting & Reconnaissance

Beginner Question

- 1.What is footprinting in ethical hacking?
- 2.Explain Footprinting Methodology
- 3.Gathering information using Metasploit

Intermediate Question

- 1.find and Explain Web sites www.netcraft.com.
- 2.Collect Location Information use of URL

- 3.find Ping,Nslookup,Tracert of Diff URL
- 4.Explain : Maltego Tool

Advance question

- 1.Find Footprinting through Job Sites
- 2.Find Footprinting through Social Networking Sites
- 3.Find WHOIS Footprinting(URL <https://www.whois.com/>)
- 4.find DNS lookup information use of Tool
- 5.Explain Tool For Linux: Recon-ng
- 6.Downloading a Website using Website Copier tool and Explain with Image

Module 3: Scanning Networks

Beginner Question

- 1.Find Network Scanning method
- 2.Explain Scanning Methodology:IP Scanner

Intermediate Question

- 1.Explain Scanning Tool:Nmap
- 2.Explain Kali Linux : Hping find

Advance question

- 1.Explain : Proxy Switcher tool.
- 2.identify vulnerabilities using tools

Module 4: Enumeration

Beginner Question

- 1.Explain Techniques for Enumeration
- 2.Find Services and Ports to Enumerate

Intermediate Question

Explain in Kalin Linux Services Enumeration using Nmap
Enumeration using SuperScan Tool
Enumeration using SoftPerfect Network Scanner Tool

Advance Question

1. explain SMTP Enumeration Tool
 - NetScan Tool Pro
 - SMTP-user-enum
 - Telnet

Module 5: Vulnerability Analysis

Beginner Question

1. Explain Vulnerability Scanning

Intermediate Question

1. Explain tool : GFI LanGuard

Advance Question

1. Explain Nessus Vulnerability Scanning Tool
2. Define Qualys FreeScan tool Online Vulnerability scanning

Module 6: System Hacking

Beginner Question

1. What is System Hacking
2. Explain System Hacking Methodology
3. Types of Keystroke Loggers
4. How to Clear Logs on Windows

5. How to Clearing logs on Linux

Intermediate Question

- 1.Explain types of Privilege Escalation
- 2.Explain Types of Password Attacks
- 3.Define Online tool for default passwords: <https://cirt.net/>
- 4.Explain Types of Spywares

Advance Question

- 1.Define Offline Attacks:Pre-Computed hashes with MD5
- 2.Explain Rainbow Table using Winrtgen tool
- 3.Password Cracking Tools: pwdump7 ,Ophcrack
- 4.Explain Types of Steganography with QuickStego

Module 7: Malware Threats

Beginner Question

- 1.Explain Malware Propagation ways
- 2.Explain Trojan Concept and Types of Trojans

Intermediate Question

- 1.Define Types of Viruses
- 2.Types of Malware Analysis

Advance Question

- 1.Advance Question
- 2.Monitoring TCP/IP connection using CurrPort tool

Module 8: Sniffing

Beginner Question

- 1.Explain : Two types of Sniffing
- 2.Explain Hardware Protocol Analyzer

Intermediate Question

- 1.Explain MAC Attacks
- 2.How Content Addressable Memory Works
- 3.Explain MAC Flooding and Switch Port Stealing
- 4.Explain ARP Poisoning and ARP Spoofing Attack

Advance Question

- 1.Define MAC Spoofing Tool : Technitium MAC address Changer
- 2.Explain DNS Poisoning
- 3.Find Sniffing Tools: Wireshark
- 4.find Sniffing Detection Techniques.

Module 9: Social Engineering

Beginner Question

- 1.Explain Social Engineering
- 2.Define Social Engineering Techniques

Intermediate Question

- 1.Explain Computer-based Social Engineering
- 2.Explain Mobile-based Social Engineering

Advance Question

- 1.Explain Social Engineering using Kali Linux
- 2.Impersonation on Social Networking Sites

Module 10: Denial-of-Services

Beginner Question

1. Denial of Service
2. Categories of DoS/DDoS Attacks Techniques

Intermediate Question

1. Explain DoS/DDoS Countermeasure Strategies
2. Find DoS/DDoS Attack Tools

Advance Question

1. Explain Kali linux tool SYN Flooding Attack using Metasploit
2. Explain SYN Flooding Attack using Hping3
3. Find Techniques to Defend against Botnets

Module 11: Session Hijacking

Beginner Question

1. What is Session Hijacking Explain with Techniques

Intermediate Question

1. Define Application Level Session Hijacking

Advance Question

- 1.Explain types of network level hijacking
- 2.Explain Components of IPsec.

Module 12: Evading IDS, Firewall and Honeypots

Beginner Question

- 1.Types of Intrusion Detection Systems
- 2.Define Firewall Architecture
- 3.Types of Firewall

Intermediate Question

- 1.Types of Honeypots
- 2.Find Tools of Intrusion Detection,Firewalls for Mobile and Honeypot Explain Any one
- 3.Explain Evading Firewalls

Advance Question

- 1.Explain HTTP Tunneling Tools
- 2.Explain IDS/Firewall Evasion Counter-measures
- 3.Explain Example of HoneyBot Application

Module 13: Hacking Web Servers

Beginner Question

- 1.Explain Web Server Security Issue
- 2.Explain IIS Web Server Architecture

Intermediate Question

1. Web Application Attacks
2. Web Server Footprinting using Tool

Advance Question

1. Explain with Example Microsoft Baseline Security Analyzer
2. Explain Web server Security Tool : Syhunt Hybrid

Module 14: Hacking Web Applications

Beginner Question

1. Explain Web Application
2. How do Web Applications works?

Intermediate Question

1. List of Web App Hacking Methodology

Advance Question

1. Explain Way of Denial-of-Service DoS Attack

Module 15: SQL Injection

Beginner Question

1. Explain SQL Injection: How SQL Query works, SQL Delete Query, SQL Update Query, SQL Injection Tools

Intermediate Question

- 1.Types of SQL Injection
- 2.SQL Injection Methodology

Advance Question

- 1.Types of Signature Evasion Techniques
- 2.Explain tool :Using IBM Security AppScan Standard

Module 16: Hacking Wireless Networks

Beginner Question

- 1.Explain Wireless Networks
- 2.Wireless Terminologies

Intermediate Question

- 1.Types of Wireless Networks
- 2.Explain two basic modes of authentication in Wi-Fi-based networks.
- 3.Types of Wireless Antenna

Advance Question

- 1.Wireless Threats
- 2.Wireless Hacking Methodology
- 3.Bluetooth Attacks
- 4.Wireless Security Tools:Hacking Wi-Fi Protected Access Network using Aircrack-ng

Module 17: Hacking Mobile Platforms

Beginner Question

- 1.Explain OWASP Top 10 Mobile Threats
- 2.Mobile attack vector

3.Explain Hacking Android OS

Intermediate Question

- 1.List of Android Phones Security Tools
- 2.Explain Hacking iOS

Advance Question

- 1.Types of Jailbreaking and Techniques
- 2.Explain Hacking Windows Phone OS
- 3.How to secure your mobile phone

Module 18: IoT Hacking

Beginner Question

- 1.Explain Internet of Things
- 2.Define architecture of IoT

Intermediate Question

- 1.Explain IoT Hacking Methodology
- 2.Explain IoT Attacks

Advance Question

- 3.Represent IoT Communication Models

Module 19: Cloud Computing

Beginner Question

- 1.Types of Cloud Computing Services
- 2.Benefits of Virtualization in Cloud

Intermediate Question

- 1.Cloud Computing Threats
- 2.Cloud Computing Attacks

Advance Question

- 1.Explain Cloud Security
- 2.Responsibilities in Cloud Security
- 3.Cloud Security Tools:Core CloudInspect,CloudPassage Halo

PHP

Module-1

Topic – SQL

Task-1 :

- Table Name :- Employee

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

- Table Name :- Incentives

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

B1.	Get First_Name from employee table using alias name “Employee Name”.
B2.	Get FIRST_NAME, Joining year, Joining Month and Joining Date from employee table.
B3.	Get all employee details from the employee table order by First_Name Ascending and Salary descending.
B4.	Get employee details from employee table whose first name contains ‘o’.
I1.	Get employee details from employee table whose joining month is “January”.
I2.	Get department, total salary with respect to a department from employee table order by total salary descending.
I3.	Get department wise maximum salary from employee table order by salary ascending.
I4.	Select first_name, incentive amount from employee and incentives table for those employees who have incentives and incentive amount greater than 3000
A1.	Select 2nd Highest salary from employee table.
A2.	Select first_name, incentive amount from employee and incentives table for all employees who got incentives using left join.

A3.	Create View OF Employee table in which store first name ,last name and salary only.
A4.	Create Procedure to find out department wise highest salary.
A5.	Create After Insert trigger on Employee table which insert records in view table.

Task-2 :

TABLE-1

TABLE NAME- SALESPERSON

(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

TABLE-3

TABLE NAME- Order

(PK)ONM	AMT	ODE	(FK)CNM	(FK)SNo
3001	18.69	03-OCT-94	2008	1007
3003	767.19	03-OCT-94	2001	1001
3002	1900.10	03-OCT-94	2007	1004
3005	3005	03-OCT-94	2003	1002
3006	3006	04-OCT-94	2008	1007
3009	3009	04-OCT-94	2002	1003
3007	3007	05-OCT-94	2004	1002
3008	3008	05-OCT-94	2006	1001
3010	3010	06-OCT-94	2004	1002
3011	3011	06-OCT-94	2006	1001

B1.	All orders for more than \$1000.
B2.	Names and cities of all salespeople in London with commission above 0.10.
B3.	All salespeople either in Barcelona or in London.
B4.	All salespeople with commission between 0.10 and 0.12. (Boundary values should be excluded).
B5.	All customers with NULL values in city column.
I1.	All orders taken on Oct 3Rd and Oct 4th 1994.
I2.	All customers serviced by peel or Motika.
I3.	All customers whose names begin with a letter from A to B
I4.	All customers excluding those with rating ≤ 100 unless they are located in Rome.
A1.	All orders except those with 0 or NULL value in amt field.
A2.	Count the number of salespeople currently listing orders in the order table.

A3.	Largest order taken by each salesperson, datewise.
A4.	Largest order taken by each salesperson with order value more than \$3000. (ie same city).

Task-3 :

Create DataBase: Practice

Note: Use Create SQL statement for creating table.

CreateTable:

tblProducts:

ColumnName	DataType	Constraint	Description
tID	int	Primarykey	AutoIncrement
ProductName	Varchar(20)		
RecommendedPrice	Money		
Category	Varchar(10)		

tblCustomers:

ColumnName	DataType	Constraint	Description
CustomerID	int	Primarykey	AutoIncrement
FirstName	Varchar(50)		
LastName	Varchar(50)		
City	Varchar(50)		
State	Char(2)		
Zip	Varchar(10)		

tblSales

Column Name	DataType	Constraint	Description
SalesID	int	Primarykey	AutoIncrement
ProductID	Int	Foreignkey	
CustomerID	Int	Foreignkey	
SalesPrice	Money		
SalesDate	Smalldatetime		

Note : Insert data using insert statement in to table

tblProduct:

ProductID	ProductName	RecommendedPr	Category
1	DVD	105.00	LivingRoom
2	Microwave	98.00	Kitchen
3	Monitor	200.00	Office
4	Speakers	85.00	Office
5	Refrigerator	900.00	Kitchen
6	VCR	165.00	LivingRoom
7	CoffeePot	35.00	Kitchen

tblCustomers:

CustomerID	FirstName	LastName	City	State	Zip
1	Chintan	Patel	Anand	GJ	388001
2	Paresh	Prajapati	Nadiad	GJ	387001
3	Pragnesh	Patel	Surat	GJ	395008
4	Nilesh	Dharsandia	Mumbai	MH	400002
5	Sonal	Patel	Mumbai	MH	400002
6	Harshal	Patel	Mogri	GJ	388345
7	Prakash	Rathod	Mogri	GJ	388345
8	Aarzoo	Dodhiya	Rajkot	GJ	360003
9	Heta	Dave	Varanasi	UP	221002
10	Nikita	Dave	Varanasi	UP	221002
11	Vaibhav	Dave	Varanasi	UP	221002
12	Paresh	Patel	Pune	MH	411001
13	Prakash	Patel	Pune	MH	411001
14	Sandhya	Patel	Hyderabad	AP	500031
15	Divesh	Patel	Banglore	KA	560002
16	Payal	Shah	Banglore	KA	560002
17	Priyanka	Rana	Anand	GJ	388001
18	Sanket	Dhebar	V.V.Nagar	GJ	388121
19	Puja	Shah	Varanasi	UP	221002
20	Priya	Shah	Varanasi	UP	221002

tblSales:

SalesID	ProductID	CustomerID	SalesPrice	SalesDate
1	1	1	130.00	2005-06-14
2	2	2	97.00	2005-06-19
3	3	3	200.00	2005-09-20
4	4	4	80.00	2005-03-22
5	5	5	899.00	2005-01-23
6	6	6	150.00	2005-03-24
7	3	7	209.00	2005-03-10
8	4	8	90.00	2005-08-11
9	6	9	130.00	2005-08-12
10	2	14	85.00	2005-12-13
11	3	15	240.00	2005-05-14
12	1	17	87.00	2005-07-19
13	2	18	99.00	2005-09-20
14	6	19	150.00	2005-07-22
15	5	5	900.00	2005-03-06
16	4	6	86.00	2005-04-07
17	2	7	88.00	2005-11-08
18	3	8	198.00	2005-05-09
19	1	9	150.00	2005-10-10
20	6	14	99.00	2005-05-09
21	6	15	104.00	2005-09-20
22	4	14	90.00	2005-07-22
23	1	1	130.00	2005-03-06
24	2	2	102.00	2005-04-07
25	1	3	114.00	2005-11-08
26	5	4	1000.00	2005-05-09
27	5	5	1100.00	2005-10-10
28	3	6	285.00	2005-06-11
29	2	7	87.00	2005-10-12
30	3	8	300.00	2005-07-13
31	3	20	205.00	2005-12-31

B1.	Return the FirstName, LastName, ProductName, and SalePrice for all products sold in the month of October2005.
B2.	Return the CustomerID, FirstName, and LastName of those individuals in the Customer table who have made no Sales purchases.
B3.	Return the FirstName, LastName, SalePrice, Recommended SalePrice, and the difference between the SalePrice and Recommended SalePrice for all Sales. The difference must be returned as a positive number.
B4.	Return the average SalePrice by Product Category.
I1.	Add the following Customer and Sale information to the database. (using store procedure) FirstName : Priyanka LastName : Chopra City:Mumbai State:MH Zip:400001 ProductID:3 SalePrice:205 SaleDate:12/31/2005
I2.	Return the Product Category and the average Sale Price for those customers who have purchased two or more products.
A1.	Update the Sale Price to the Recommended Sale Price of those Sales occurring between 6/10/2005and6/20/2005.
A2.	Number of Sales by Product Category where the average Recommended Priceis10 or more dollars greater than the average Sale Price.
A3.	Without using a declared iterative construct, return Sale Date and the running total for all sales, ordered by the Sale Date in Ascending Order.

Task-4 :

	<p>Note : Operatinal Statement with Employment.</p> <pre>tablemp(eno,ename,bdate,title,salary, dno), tblproj(pno,pname,budget,dno), tbldept(dno,dname,mgreno), tblworkson(eno,pno,resp,hours).</pre>
B1.	Write an SQL query that returns the project number and name for projects with a budget greater than \$100,000.
B2.	Write an SQL query that returns all works on records where hours worked is less than 10 and the responsibility is “Manager”.
B3.	Write an SQL query that returns the employees (number and name only) who have a title of “EEE” or “SA” and make more than \$35,000.
B4.	Write an SQL query that returns the employees (name only) in department “D1” ordered by decreasing salary.
I1.	Write an SQL query that returns the departments (all fields) ordered by ascending department name.
I2.	Write an SQL query that returns the employee name, department name, and employee title.
I3.	Write SQL query that returns the project name, hours worked, and project number for all works on records where hours > 10.
A1.	Write an SQL query that returns the project name, department name, and budget for all projects with a budget < \$50,000.
A2.	Write an SQL query that returns the employee numbers and salaries of all employees in the “Consulting” department ordered by descending salary.
A3.	Write an SQL query that returns the employee name, project name, employee title and hours for all works on records.

Module-2

Topic – CORE PHP

B1	Write a PHP program to enter marks of five subjects Physics, Chemistry, Biology, Mathematics and Computer, calculate percentage and grade by if else Write a PHP program for find 'Thursday' in week using switch function.
B2	Write a PHP program to check Leap years between 1901 to 2016 using nested if.
B3	Write a PHP program to find the largest of three numbers using ternary operator.
B4	Write a program in PHP to print Fibonacci series. 0, 1, 1, 2, 3, 5, 8, 13, 21, 34
B5	Write a program to find whether a number is Armstrong or not
B6	Write a program to print Reverse of any number.
B7	To check whether a number is Prime or not.
B8	Write a PHP program in which enter Amount, Year, Rate by form and find the simple interest.
B9	Write a Program to swap two numbers in PHP.
B10	Write a PHP program in which take three numbers by form and find the minimum and maximum numbers from it.
B11	Write a PHP program in which enter basic salary, DA, HRA , PF by form and find the Gross Salary.
B12	Is PHP a strongly typed language?

B13	What is meant by variable variables in PHP?
B14	What are the differences between echo and print?
B15	What type of errors can be occurred in PHP?
I1	<p>Write a program to print the below format :</p> <p>1 5 9 2 6 10 3 7 11 4 8 12</p>
I2	<p>Write a program for this Pattern:</p> <pre>***** * * * * * * *****</pre>
I3	<pre>\$str1 = 'yabadabadoo'; \$str2 = 'yaba'; if (strpos(\$str1,\$str2)) { echo "" . \$str1 . "\" contains "" . \$str2 . "\""; } else { echo "" . \$str1 . "\"" does not contain "" . \$str2 . "\""; }</pre> <p>Output:?</p>

I4	<p>What will be the output of the code below and why?</p> <pre>\$x = 5; echo \$x; echo "
"; echo \$x+++\$x++; echo "
"; echo \$x; echo "
"; echo \$x---\$x--; echo "
"; echo \$x;</pre>
I5	<p>What will be the values of \$a and \$b after the code below is executed? Explain your answer.</p> <pre>\$a = '1'; \$b = &\$a; \$b = "2\$b";</pre>
I6	<p>How can you tell if a number is even or odd without using any condition or loop?</p>
I7	<p>Write a PHP program to print alphabet pattern 'J'. Expected Output:</p> <pre> *** * * * * * * *</pre>

B1	What is the difference between include_once() and require_once(), which one would you use in circumstances where you need to connect to a database, and why?
B2	What are the uses of explode() and implode() functions?
B3	Which function is used in PHP to check the data type of any variable?
B4	How can you increase the maximum execution time of a script in PHP?
B5	What is meant by 'passing the variable by value and reference' in PHP?
B6	Which function you can use in PHP to open a file for reading or writing or for both?
B7	Which function is used in PHP to delete a file?
B8	Which functions are used to count the total number of array elements in PHP?
B9	What is the difference between substr() and strstr()?
B10	What is use of the header() function in PHP?
I1	Write a Program for finding the biggest number in an array without using any array functions.
I2	How can you declare the array(all type) in PHP? Explain with example
I3	Convert a JSON string to array.
I4	Write program to remove duplicate values from array

I5	Get random values from array
I6	Write a PHP script which decodes the following JSON string.
I7	Use a for loop to total the contents of an integer array called numbers which has five elements. Store the result in an integer called total.
I8	Declare a Multi Dimensioned array of floats called balances having three rows and five columns.
A1	<p>Sample JSON code :</p> <pre>{"Title": "The Cuckoos Calling", "Author": "Robert Galbraith", "Detail": { "Publisher": "Little Brown" }}</pre> <p>Expected Output :</p> <p>Title : The Cuckoos Calling Author : Robert Galbraith Publisher : Little Brown</p>
A2	<p>Write a PHP script that inserts a new item in an array in any position.</p> <p>Expected Output :</p> <p>Original array :</p> <p>1 2 3 4 5</p> <p>After inserting '\$' the array is :</p> <p>1 2 3 \$ 4 5</p>

A3	<p>Write a PHP function to change the following array's all values to upper or lower case.</p> <p>Sample arrays :</p> <pre>\$Color = array('A' => 'Blue', 'B' => 'Green', 'c' => 'Red');</pre> <p>Expected Output :</p> <p>Values are in lower case.</p> <pre>Array ([A] => blue [B] => green [c] => red)</pre> <p>Values are in upper case.</p> <pre>Array ([A] => BLUE [B] => GREEN [c] => RED)</pre>
A4	Write a PHP script to get the shortest/longest string length from an array.
A5	<p>Sample arrays : ("abcd", "abc", "de", "hjjj", "g", "wer")</p> <p>Expected Output : The shortest array length is 1.</p> <p>The longest array length is 4.</p>
A6	Write a PHP script to get the largest key in an array.
A7	<p>Write a PHP function to floor decimal numbers with precision.</p> <p>Note: Accept three parameters number, precision, and \$separator</p> <p>Sample Data :</p> <p>1.155, 2, <code>"."</code> 100.25781, 4, <code>"."</code> -2.9636, 3, <code>"."</code></p> <p>Expected Output :</p> <p>1.15 100.2578 -2.964</p>
A8	<p>Write a PHP script to print "second" and Red from the following array.</p> <p>Sample Data :</p> <pre>\$color = array ("color" => array ("a" => "Red", "b" => "Green", "c" => "White"), "numbers" => array (1, 2, 3, 4, 5, 6), "holes" => array ("First", 5 => "Second", "Third"));</pre>
A9	Write a PHP function to generate a random password (contains uppercase, lowercase, numeric and other) using shuffle() function.

A10	<p>Write a PHP script to get an array containing all the entries of an array which have the keys that are present in another array.</p> <p>Test Data : 1st array : ('c1'=> 'Red', 'c2' => 'Green', 'c3' => 'White', c4 => 'Black')</p> <p>2nd array : ('c2', 'c4')</p> <p>Output :</p> <pre>Array ([c2] => Green [c4] => Black)</pre>
A11	<p>Write a PHP program using array function for above array type to find:</p> <ul style="list-style-type: none"> a) \$a=array("a","b","c") b) \$b=array ("JAVA","PHP","ASP") c) Merge array \$a & \$b d) Find "JAVA" in \$b e) Reveres array of \$b f) Merge two \$a & \$b array
A12	<p>Write a PHP program using array function for above array type to find:</p> <pre>\$a=array("a"=>"rajesh","b"=>"nirav","c"=>"varun") \$b=array("c"=>"varun","d"="kaushal","e"=>"mehul")</pre> <ul style="list-style-type: none"> a) Find Difference in two array \$c & \$d` b) Compute Intersection in \$c & \$d c) Remove last element of \$c d) check value "Nirav" exists or not from \$c e) Exchange all key with their value of \$d f) Split \$c array in chunks
A13	Declare a character based array called letters of ten elements
A14	Assign the character value 'Z' to the fourth element of the letters array
A15	<p>Write a PHP script to convert the date to timestamp.</p> <p>Sample date : 12-05-2014</p> <p>Expected Result : 1399852800</p>

A16	Write a PHP script to calculate a number of days between two dates.
A17	Write a PHP script to get the first and last day of a month from a specified date.
A18	Write a PHP script to print like: Saturday the 7th.
A19	Write a PHP script to check whether the given dates are valid or not?
A20	Write a PHP script to get time difference in days and years, months, days, hours, minutes, seconds between two dates. Note: Use DateTime class. (\$date1 = new DateTime('2012-06-01 02:12:51'); \$date2 = \$date1->diff(new DateTime('2014-05-12 11:10:00'));
A21	Write a PHP script to get the current date/time of 'Australia/Melbourne'.
A22	Write a PHP script to check if a date is a weekend or not.
A23	Write a PHP script to add/subtract the number of days from a particular date. Sample Output : Original date : 2011-01-01 Before 40 days : 2010-11-22 After 40 days : 2011-02-10
A24	Write a PHP script to calculate the current age of a person. Sample date of birth : 11.4.1987 Output : Your age :X years, X month, X days (display x values by current date).
A25	Write a PHP script to convert seconds into days, hours, minutes and seconds. Sample seconds : 200000 Expected output : 2 days, 7 hours, 33 minutes and 20 second

A26	<p>Write a PHP script to :-</p> <ul style="list-style-type: none"> a) transform a string all uppercase letters. b) transform a string all lowercase letters. c) make a string's first character uppercase. d) make a string's first character of all the words uppercase.
A27	<p>Write a PHP script to split the following string. Sample string : '082307' Expected Output : 08:23:07</p>
A28	<p>Write a PHP script to check if a string contains a specific string? Sample string : 'The quick brown fox jumps over the lazy dog.' Check whether the said string contains the string 'jumps'.</p>
A29	<p>Write a PHP script to extract the file name from the following string Sample String : 'www.example.com/public_html/index.php' Expected Output : 'index.php'.</p>
A30	<p>Write a PHP script to extract the user name from the following email ID. Sample String : 'rayy@example.com' Expected Output : 'rayy'</p>
A31	<p>Write a PHP script to find the first character that is different between two strings. String1 : 'football' String2 : 'footboll' Expected Result : First difference between two strings at position 5: "a" vs "o"</p>
A32	<p>Write a PHP script to print the next character of a specific character. Sample character : 'a' Expected Output : 'b' Sample character : 'z' Expected Output : 'a'</p>
A33	<p>Write a PHP Program to create two form test1 & test2 and redirect test1 to test2 in 5 second.</p>

A34	Write a PHP Program to download & read file for PDF, TEXT,JPF&WORD file.
A35	Write a PHP script to get the first and last day of a month from a specified date.
A36	Write a PHP function to get start and end date of a week (by week number) of a particular year.
A37	Write a PHP Program to using Date function to find default time zone with date and time in 20 Nov, 2016, 10:30 am.
A38	Write a PHP Program to using Date function to finddate before 3 months from current date. Find Time of before two hours from current time.
A39	Write a PHP Program to create current date & time by using mktime() &strtotime().

B1	What are uses of GET, POST and REQUEST?
B2	What is SESSION?
B3	What are differences between session and cookies?
B4	Is it possible to use session without cookies?
B5	How to get current session id in PHP?
B6	What are super global variables in PHP?
B7	What is \$_SERVER? And why we use?
B8	How can we get the IP address of the client?
B9	Where we use \$_FILES?
B10	What is \$_ENV?
B11	List of Super Global variables.
B12	What is \$GLOBALS variables?
I1	How to set session? with example
I2	Destroy user data when user logout.
I3	How to set cookies for 1 year?
I4	How to use \$_ENV?
I5	Create registration and login with session and cookies?

I6	How we can retrieve cookies.
I7	How to redirect pages in PHP?
I8	Why is “header already sent” error generated?
I9	Write a PHP script to redirect a user to a different page.
I10	How to get path in formation?
I11	Write a PHP script, to check whether the page is called from 'https' or 'http'.
I12	Write a PHP script to get the full URL
I13	Write a PHP script to get the time of the last modification of the current page.
I14	Write a PHP script to count lines in a file.
I15	Write a PHP Program to using Global Variable to find information about header, path, script Location.
I16	Write a PHP Program to input value like id, name, pass in form test1 & get(show) value in test2 form to using method get & post with \$_GET, \$_POST and \$_REQUEST function.
I17	Write a PHP script to get the client IP address.
I18	Write a PHP script to get the PHP version and configuration information.
A1	Upload image with server side validation for image size should not be greater than 1MB and allow JPG/JPEG/PNG (Image Format Only).
A2	Example of Add to Cart via session with remove product functionality.

A3	Save username and password on browser and perform remember me functionality.
A4	Write a script for automatically logout after 20min.
A5	Restriction to access page without login.
A6	Fix this “header already sent” error?
A7	Download image on button click

Module-3

Topic – OOPS

B1	What Is Object Oriented Programming?
B2	What Are Properties Of Object Oriented Systems?
B3	What Is Difference Between Class And Interface?
B4	What Is Overloading?
B5	What Is T_PAAMAYIM_NEKUDOTAYIM (Scope Resolution Operator ::) and give an example?
B6	What are the differences between abstract classes and interfaces?
I1	Define Constructor and Destructor?
I2	How to Load Classes in PHP?
I3	How to Call Parent Constructor?
I4	Are Parent Constructor Called Implicitly When Create An Object Of Class?
I5	What Happen, If Constructor Is Defined As Private Or Protected?
I6	Define New-style Constructor & Old-style Constructor. Check which One Will Be Called?
I7	Create Abstract class and method?
I8	Define 3 types of visibility of data member & member function.
I9	Create a method which will never inherited?

I10	What is the difference between Abstract class and Interface?
I11	Create parent class for car and child class for car_model and use car functionality in car_model class.
I12	Override the parent's properties and methods in the child class?
I13	Prevent the child class from overriding the parent's methods?
I14	Declare classes and methods as abstract?
I15	Can we have non abstract methods inside an abstract class? Explain With Example
I16	How to create child classes from an abstract class?
I17	What are PHP Magic Methods/Functions? List them
A1	Write program for Static Keyword in PHP?
A2	Create multiple Traits and use it in to a single class?
A3	Write PHP Script of Object Iteration?
A4	Create PHP script for objects passed in PHP – by reference or by value?
A5	What is data modeling?
A6	Use of The \$this keyword
A7	Declare and implement an interface and implement more than one interface in the same class.
A8	How to implement the polymorphism principle?
A9	Explain Scope resolution operator with example.
A10	Access child class property to parent.

B1	<p>Create a registration(signup.php) page which will have following fields (Start after complete Form get post method)</p> <ul style="list-style-type: none"> a. Username<textbox> b. Password<password> c. FirstName<textbox> d. MiddleName<textbox> e. LastName <textbox> f. Email Address<textbox> g. Phoneno.<textbox> h. Address<textarea> i. Country<dropdown> j. State<dropdown> k. city<dropdown> l. Profile Picture m. Gender<radiobutton> n. Interest <p>News<checkbox></p> <ul style="list-style-type: none"> Health<checkbox> Automobiles<checkbox> Internet<checkbox> <p>o. Submit<submit> Cancel<reset></p>
B2	<p>Create a login form(index.php). In this page there should have following fields</p> <ul style="list-style-type: none"> a. Username<textbox> b. Password<textbox> c. Login <submit>Cancel<reset> d.Signup<link>
B3	<p>Clicking up on signup link user should be redirected to registration page (signup.php).</p>
B4	<p>Apply CSS to all above pages. And make index page attractive like put login area in the center with field set.</p>

B5	Now create admin login table and insert manually admin username and password.
B6	<p>Then create an admin login page as you “We created for user. Now admin enters wrong username/password user should get message “invalid username/password” else if user enter username=<your username> and password=<your password> then he/she should be redirected to his homepage(adminhome.php). And admin home. Php admin should get message “Welcome,<adminname>” and a logout link clicking upon it user should be redirected to admin login.php.</p> <p>(Hint: use Select Query)</p>
B7	Consider the form from exercise1. Clicking upon submit button all fields should be displayed on confirm. Php page and in confirm. Php page there should be a link which takes user to the login page(index.php).
I1	Create one database. In that database create registration table. Now consider exercise
I2	When user clicks on the submit button all data should be inserted into the registration table. Note:-User name must be unique.
I3	<p>You have to implement login module. Consider the login form from exercise2.</p> <p>If user enters wrong username/password user should get message “invalid username/password” else if user enter username=<your username> and password=<your password> then he/she should be redirected to his homepage(home.php). And home. Php user should get message “Welcome,<username>” and a logout link clicking upon it user should be redirected to index.php.</p> <p>(Hint : use Select Query)</p>

I4	<p>On admin homepage you have to create two link 1) Add user Detail 2) View user Detail.</p> <p>Clicking on view user detail admin show all the user detail</p> <table border="1" data-bbox="290 375 1400 475"> <thead> <tr> <th data-bbox="290 375 355 411">Id</th><th data-bbox="355 375 502 411">Username</th><th data-bbox="502 375 665 411">Firstname</th><th data-bbox="665 375 829 411">Middlename</th><th data-bbox="829 375 992 411">LastName</th><th data-bbox="992 375 1155 411">Country</th><th data-bbox="1155 375 1400 411">Email</th></tr> </thead> <tbody> <tr> <td data-bbox="290 411 355 475">1</td><td data-bbox="355 411 502 475">User1</td><td data-bbox="502 411 665 475">First</td><td data-bbox="665 411 829 475">Middle</td><td data-bbox="829 411 992 475">Last</td><td data-bbox="992 411 1155 475">India</td><td data-bbox="1155 411 1400 475">Firstlast@email.com</td></tr> </tbody> </table>	Id	Username	Firstname	Middlename	LastName	Country	Email	1	User1	First	Middle	Last	India	Firstlast@email.com		
Id	Username	Firstname	Middlename	LastName	Country	Email											
1	User1	First	Middle	Last	India	Firstlast@email.com											
I5	<p>Consider the above (I4)exercise and add one more column</p> <table border="1" data-bbox="290 559 1400 696"> <thead> <tr> <th data-bbox="290 559 355 595">Id</th><th data-bbox="355 559 502 595">Username</th><th data-bbox="502 559 665 644">First name</th><th data-bbox="665 559 829 644">Middle name</th><th data-bbox="829 559 992 644">Last Name</th><th data-bbox="992 559 1155 595">Country</th><th data-bbox="1155 559 1400 595">Email</th><th data-bbox="1400 559 1428 595">Option</th></tr> </thead> <tbody> <tr> <td data-bbox="290 644 355 696">1</td><td data-bbox="355 644 502 696">User1</td><td data-bbox="502 644 665 696">First</td><td data-bbox="665 644 829 696">Middle</td><td data-bbox="829 644 992 696">Last</td><td data-bbox="992 644 1155 696">India</td><td data-bbox="1155 644 1400 696">First@email.com</td><td data-bbox="1400 644 1428 696">Enable/Disable</td></tr> </tbody> </table> <p>The link enable/disable would be either enable or disable according to user “status”.</p> <p>If user is disabled then the display to enable user and vice versa.</p>	Id	Username	First name	Middle name	Last Name	Country	Email	Option	1	User1	First	Middle	Last	India	First@email.com	Enable/Disable
Id	Username	First name	Middle name	Last Name	Country	Email	Option										
1	User1	First	Middle	Last	India	First@email.com	Enable/Disable										
I6	<p>Now create one more table for movie details in database, with fields Movie_title, Leading_actor, Leading_actress, Type, and Director. Only Admin can add details to this table when he clicks on the first link.</p>																
I7	<p>Add movie Detail.</p>																
I8	<p>Consider the exercise11and add a edit link near delete link e.g.</p> <table border="1" data-bbox="290 1151 1400 1330"> <thead> <tr> <th data-bbox="290 1151 355 1186">Id</th><th data-bbox="355 1151 502 1186">Movie Title</th><th data-bbox="502 1151 665 1186">Leading Actor</th><th data-bbox="665 1151 829 1186">Director</th><th data-bbox="829 1151 992 1186">Type</th><th data-bbox="992 1151 1155 1186">Year</th><th data-bbox="1155 1151 1400 1186">Option</th></tr> </thead> <tbody> <tr> <td data-bbox="290 1186 355 1330">1</td><td data-bbox="355 1186 502 1330">Movie1</td><td data-bbox="502 1186 665 1330">Actor1</td><td data-bbox="665 1186 829 1330">Director1</td><td data-bbox="829 1186 992 1330">Comedy</td><td data-bbox="992 1186 1155 1330">2009</td><td data-bbox="1155 1186 1400 1330">Edit/Delete</td></tr> </tbody> </table> <p>Clicking up on edit button a particularrow should be open in editing mode e.g. on the Particular row there should be filled text box with data and on the option column there should be a confirm button clicking upon it arrow should be updated.</p>	Id	Movie Title	Leading Actor	Director	Type	Year	Option	1	Movie1	Actor1	Director1	Comedy	2009	Edit/Delete		
Id	Movie Title	Leading Actor	Director	Type	Year	Option											
1	Movie1	Actor1	Director1	Comedy	2009	Edit/Delete											

I9	<p>Create Hotel Room Booking System</p> <p>User can book room by 3 ways</p> <p>1) Full day 2) Half day 3) Custom</p> <p>If user select for the full day than user only have selection for the checking checkout date</p> <p>If user select Half day than user have option of date and slot option (like user want to book room for first half – Morning (8AM to 6PM) if user select for second half it's for evening (7PM to Morning 7AM)).</p> <p>Do proper validation like if user can book only available slot. (have to use jQuery -> Ajax, validation, Json passing).</p>
----	---

B1	What is jQuery?
B2	How are JavaScript and jQuery different?
B3	Which is the starting point of code execution in jQuery?
B4	Document Load Vs Window.Load() jQuery
B5	What is the difference between prop and attr?
B6	Explain Difference Between Jquery And Javascript?
B7	Why We Can Use Jquery In Our Application?
B8	How To Show The Alert Message On Button Click In Jquery? And explain multiple alert box
B9	What Is The Meaning Of Selectors In Jquery?
B10	What Is “noconflict” Method In Jquery?
I1	What You Mean By Cdn? And advantages Of Using Cdns
I2	How We Can Check Element Exists Or Not In Jquery?
I3	How We Can Check/uncheck Radio Buttons In Jquery?
I4	Which Methods Are Used To Provide Effects?
I5	Explain Methods “childrens” And “find” In Jquery?
I6	Can You Give An Example For Chaining Along With Code Snippet?
I7	Explain “param” Method In Jquery? Give An Example With Code Snippet For “param” Method?

I8	How We Can Select The Specified Element From The List Of Elements In ?
I9	In <table> Design Change The Color Of Even <tr> Elements To “green” And Change The Color Of Odd <tr> Elements To “blue” Color? Give An Example Code?
I10	How We Can Implement Animation Effects In Jquery?
A1	Apply jQuery validation using library.
A2	Create custom dynamic function for require field validator.
A3	Get state data by country selection (Ajax).
A4	Image uploading with preview.

Module-4

Topic – Web Services

1.	Create web-services which fetch the data from server by json_encode and also decode it.
2.	Try with Ajax on (que 1)

Module-5

Topic – CodeIgniter

	<u>Admin Side</u>
1.	Create Static Admin table insert a username and password.
2.	From admin login insert Brand in Brand table (can ADD,EDIT,DELETE)
3.	From admin login insert category in category table(can ADD,EDIT,DELETE)
4.	From admin login insert sub category in sub category table (can ADD,EDIT,DELETE).
5.	At last add the Product with following fields (can ADD,EDIT,DELETE) <ul style="list-style-type: none"> i. Product Name ii. Product manu.date iii. Product brand iv. Product category v. Product sub category (by ajax) vi. Color (checkbox) vii. Size(checkbox) viii. Product image ix. Product Description
	<u>User Side</u>
1.	Registration (username , password , gender , hobbies , country).
2.	Login with (Session & Cookie).
3.	Search the product by <ul style="list-style-type: none"> i. Name (Ajax) ii. Category (Ajax) (load the result in Jquery Data Table)
4.	Add to cart (Use CI cart library) <ul style="list-style-type: none"> i. Use CI Form Validations in above Form. ii. User User and Admin Temples to Complete Above Task.