PARUL UNIVERSITY - Faculty of IT & Computer Science

Department of Computer Application

SYLLABUS FOR 2nd Sem BCA PROGRAMME

Project-I (05101154)

Type of Course: BCA

Prerequisite: Basic approach of problem solving methods.

Rationale: • To plan, schedule, and monitor the software project • Development, coding, and testing of a minor project cohesively. • Documentation of project

Teaching and Examination Scheme:

Teaching Scheme			Credit	Examination Scheme					Total
				External		Internal			
Lect Hrs/ Week	Tut Hrs/ Week	Lab Hrs/ Week		T	P	T	CE	P	
0	0	6	3	0	60	0	20	20	100

Lect - Lecture, **Tut** - Tutorial, **Lab** - Lab, **T** - Theory, **P** - Practical, **CE** - CE, **T** - Theory, **P** - Practical

Contents:

Sr.	Topic	Weightage	Teaching Hrs.
1	**Guidelines**: • It is recommended that the team should be of 2-3 students. • Project plan along with the division of work amongst teammates would have been prepared and got approved within a maximum of 5 days of the start of the project. • Coding standards should be followed meticulously. At the minimum, the code should be self documented, modular, and should use meaningful naming convention. • Data structure (database design) is mandatory. At least a portion of code (preferably full code) is mandatory. Student may be asked to write the code related to the project during examination. • If a student is compelled to follow certain instructions (by the external, i.e. organization's guide) which he/she does not agree to, such a student must prepare a supplementary report to document his/her version and present it to the examiners if such a need arises. • Internal guides (i.e. the faculty members) must devote the time allocated as per the time table to guide the students for the project. The time allocation will be in accordance with the scheme for 2nd semester. **Criteria for Evaluation of Software Projects** • Project Definition: 10% • Related project Study Analysis: 20 % • Design & Development: 40% • Implementation & Testing: 10% • Creation of Project Report and User Manual: 20%	100%	

***Continuous Evaluation:**

It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.

Course Outcome:

After Learning the course the students shall be able to:

1. Working on the project will enable a student to go through rich experience in developing user defined projects.
2. Such an experience will include encountering various technical issues, finding sources to resolve the issues and finally arriving at the solution of all these issues satisfactorily.
3. Ability to document and write well.
4. Organizing the time effectively.
5. Working with teammates and generating substantial output of the team's efforts.
6. It will prepare the students for analyzing and programming for industrial problems and large projects in future.

PARUL UNIVERSITY - Faculty of IT & Computer Science

Department of Computer Application

SYLLABUS FOR 2nd Sem BCA PROGRAMME

Python Programming (05101155)

Type of Course: BCA

Prerequisite: Basic knowledge of Computers

Rationale: To acquire fundamental knowledge and apply it in Computer Application discipline

Teaching and Examination Scheme:

Teaching Scheme			Credit	Examination Scheme					Total
				External		Internal			
Lect Hrs/ Week	Tut Hrs/ Week	Lab Hrs/ Week		T	P	T	CE	P	
3	0	2	4	60	30	20	20	20	150

Lect - Lecture, **Tut** - Tutorial, **Lab** - Lab, **T** - Theory, **P** - Practical, **CE** - CE, **T** - Theory, **P** - Practical

Contents:

Sr.	Topic	Weightage	Teaching Hrs.
1	**Introduction to Python**: The Python programming language, What is a program?, What is debugging?, The first program. **Variables, expressions and statements** Values and types, Variables, Variable names and keywords, Statements, Operators and operands, Expressions, Order of operations, Comments, Debugging.	10%	5
2	**Operators**: Modulus operator, Boolean expressions, Logical operators, Conditional execution, Alternative execution, Chained conditionals, Nested conditionals	10%	5
3	**User Defined Function and Introduction to Packages**: **Functions:** Function calls, Type conversion functions, Math functions, Composition, Adding new functions, Definitions and uses, Parameters and arguments, Variables and parameters are local, Fruitful functions and void functions, Why functions?. Recursion Function **Introduction to Packages:** Usage of Packages, Installation of Packages, brief introduction to NUMPY Package	20%	9

4	**Python Data Structure – I**: **Strings** A string is a sequence, Len, Traversal with a for loop, String slices, Strings are immutable, Searching, Looping and counting, String methods, The in operator, String comparison, Debugging. **List** ListA list as a sequence, Lists are mutable, Traversing a list, List operations, List slices, List methods, Map, Filter and reduce, Deleting elements, Lists and strings, Objects and values, Aliasing, List arguments.	25%	12
5	**Python Data Structure – II**: **Tuples, Set, Dictionary** **Tuples:** Python Tuples, Accessing values in Tuples, update and delete tuples Basic tuples operation, Built in Tuples Function, List Vs Tuples. **Set:** Defining set, create and accessing values in a set, set Methods, Frozenset Dictionary: What is python Dictionary, Creating a Dictionary, Adding elements to a Dictionary, Accessing and removing an elements from Dictionary, Dictionary Methods	25%	12
6	**File Operations**: Need of a file. Opening, closing and read/write operations in file.	10%	5

***Continuous Evaluation:**

It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.

Reference Books:

1. Think Python, How to Think Like a Computer Scientist (TextBook)
   Allen Downey; Green Tea Press Needham, Massachusetts.
2. Beginning programming with Python for Dummies
   John Paul Mueller; John Wiley & Sons

Course Outcome:

After Learning the course the students shall be able to:

1. Apply object-oriented programming concepts to develop dynamic interactive Python applications
2. Employ control structures, functions, and collection data structures to create Python programs
3. Design, Develop, Test and Debug program using python programming language

List of Practical:

1. **Write first python program to print your introduction like name, address, phone number, email id etc.**

2. **WAP to declare multiple variable with all different types of value and check data type of all declare variable using type() method.**

3. **WAP to take basic details of employee like name, phone number, email id, salary, designation, address, blood group and birth date through keyboard and print it in proper format.**

4. **Write a menu driven program which show use of all arithmetic operators and print its result. Take input form key board.**

5. **WAP to find power and square root of given number without using inbuilt function. (note : find power using ** operator and square root using 0.5 value)**

6. **WAP to find simple interest for given principal amount. Take input of principal amount, rate of interest and year from user. (Intrest=(PRN)/100)**

7. **WAP menu driven program to find area of triangle, circle, rectangle, square and cylinder.**

8. **Write a menu driven program to convert kilometer to miles, Celsius to Fahrenheit, meter to centimeter, acer to square meter.**

9. **WAP to solve quadratic equation (ax2 + bx + c)**

10. **WAP to swap value of two variableswith all five possibilities a. Using temp variable b. Using + and – Operator c. Using // and * Operator d. Using ^ (XOR) operator e. By using concept of different value to multiple variable allocation concept**

11. **WAP to check entered number is positive, negative, zero, odd or even using if else statement.**

12. **WAP to find maximum (largest) number among three numbers. (also try for 5 numbers)**

13. **WAP to print multiplication table in proper format for entered number using for loop as well as while loop.**

14. **WAP to find number is prime or not.**

15. **WAP to print list of prime number from given interval.**

16. **WAP to find factorial of given number.**

17. **WAP to print Fibonacci series/ sequence.**

18. **WAP to find whether inputted number is Armstrong or not.**

19. **WAP to print list of Armstrong number from given interval.**

20. **WAP to find sum of natural numbers using for loop as well as while loop.**

21. **WAP which shows use of datetime package of python.**

22. **Write a menu driven program to create simple calculator using user defined function.**

23. **WAP to find length of string without using inbuilt function len() function.**

24. **WAP to traverse string using for loop.**

25. **WAP which shows use slicing on string and any other data structure of python.**

26. **Write a menu driven program which shows the use of string inbuilt function and its operation like concatenation, repletion and slicing.**

27. **WAP which show how string is immutable by passing string as argument in user defined function.**

28. **Write a program to perform all bitwise operation using user defined function.**

29. **WAP to create list and perform operation like searching element, adding element, update element, removing element, traverse list in both direction left to right and right to left by passing list as argument in user defined function.**

30. **WAP to program to find binary of inputted number and store it into list and print it.**

31. **WAP program to covert list of word form given sentence by using split() method and also find position of entered word in list if it present in list else print appropriate message.**

32. **WAP to create list of words and convert only those words into upper case which start with vowels (a,e,I,o,u) other remain as it is.**

33. **WAP to create list of cube and square for upto given number. E.g. if user enter 10 than store cube and square to 1 to 10 into list.**

34. **WAP to program to create tuple and perform operation like searching, find length, slicing, also change first and last or entered index element by using concept of slicing and concatenation.**

35. **WAP to find list of prime numbers from tuple and store it into list.**

36. **WAP to create set of numbers and perform updating and deletion operation using its all inbuilt function.**

37. **WAP to perform all set operation like intersection, union, difference, symmetric difference and other operation.**

38. **WAP to remove all the duplicate element from list by using single list.**

39. **Write a Python script to generate and print a dictionary that contains a number (between 1 and n) in the form (x, x*x). Expected Output : {1: 1, 2: 4, 3: 9, 4: 16, 5: 25} where value of n is enter by user.**

40. Create a dictionary which shows the occurrence/ frequency of each character present in string. [hint : if user enter "wel come to parul university" than your dictionary contain {a:1,b:0,c:1,d:0,e:3, f:0……} like this.

41. Write a Python script to concatenate following dictionaries to create a new one. Sample Dictionary : dic1={1:10, 2:20} dic2={3:30, 4:40} dic3={5:50,6:60}

42. 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})

43. Write a python program to create dictionary of binary number up to given range. If user enter 15 than store binary number of 1 to 15 into dictionary and print it in proper format.

44. Write a menu driven program which shows the use of all inbuilt method of dictionary.

45. WAP to write your introduction like name, birth date, email id, address, contact details into file. And also print it in proper format after reading the data.

46. WAP which shows the use of seek() and tail() method to set and to get the position of file pointer.

47. WAP to store output of python script into text file. Open file using with statement.

48. Create below listed array using Numpy and check its data type.

1. type1 = np.array([1, 2, 3, 4, 5, 6])
2. type2 = np.array([1.5, 2.5, 0.5, 6])
3. type3 = np.array(['a', 'b', 'c'])
4. type4 = np.array(["Canada", "Australia"], dtype='U5')
5. type5 = np.array([555, 666], dtype=float)

49. Create below listed more than one dimensions array using Numpy and check its dimension

1. array1d = np.array([1, 2, 3, 4, 5, 6])
2. array2d = np.array([[1, 2, 3], [4, 5, 6]])
3. array3d = np.array([[[1, 2, 3], [4, 5, 6]], [[7, 8, 9], [10, 11, 12]]])

50. WAP Program to Transform List or Tuple into NumPy array.

51. Perform the following Indexing Operations using Numpy array.

array1d = np.array([1, 2, 3, 4, 5, 6])

1. Get first value
2. Get last value
3. Get 4th value from first
4. Get 5th value from last
5. Get multiple values

52. Perform the following Indexing Operations on Numpy array.

Where array2d = np.array([[1, 2, 3], [4, 5, 6], [7, 8, 9]])

a. Get first row first col (0,0) element.

b. Get first row second col (0,1) element.

c. Get first row second col (0,1) element.

d. Get second row second col (2,1) element.

53. Perform the following Single Dimensional Slicing Operations using Numpy array.

array1d = np.array([0, 1, 2, 3, 4, 5, 6, 7, 8, 9])

1. from index 4 to last index
2. From index 0 to 4 index
3. From index 4(included) up to index 7(excluded)
4. Excluded last element
5. Up to second last index(negative index)
6. From last to first in reverse order(negative step)
7. All odd numbers in reversed order
8. All even numbers in reversed order
9. All elements

54. Perform the following Multidimensional Dimensional Slicing Operations using Numpy array.

Where array2d = np.array([[1, 2, 3], [4, 5, 6], [7, 8, 9]])

1. 2nd and 3rd col
2. 2nd and 3rd row
3. Reverse an array
4. Resize array
5. Reshape array

55. Perform the following operations to Manipulating the Dimensions and the Shape of Arrays (Flips the order of the Axes)

array2d = np.array([[1, 2, 3], [4, 5, 6], [7, 8, 9]])

1. Permute the dimensions of an array

2. Flip array in the left/right direction

3. Flip array in the up/down direction

4. Rotate an array by 90 degrees in the plane specified by axes

56. Perform the following operations to Manipulating the Dimensions and the Shape of Arrays (Joining and Stacking)

array1 = np.array([[1, 2, 3], [4, 5, 6]])

array2 = np.array([[7, 8, 9], [10, 11, 12]])

1. Stack arrays in sequence horizontally (column wise).

2. Stack arrays in sequence vertically (row wise)

3. Stack arrays in sequence depth wise (along third axis)

4.Appending arrays after each other, along a given axis

5. Append values to the end of an array

57. Perform the following Arithmetic Operations using Numpy Array.

array1 = np.array([[1, 2, 3], [4, 5, 6]])

array2 = np.array([[7, 8, 9], [10, 11, 12]])

1. array1 + array2

2. array1 - array2

3. array1 * array2

4. array2 / array1

5. array1 ** array2

58. Perform the following Scalar Arithmetic Operations using Numpy Array.

array1 = np.array([[10, 20, 30], [40, 50, 60]])

1. array1 + 2

2. array1– 5

3. array1 * 2

4. array1 / 5

5. array1 ** 2

59. Perform the following Elementary Mathematical Functions using Numpy Array.

array1 = np.array([[10, 20, 30], [40, 50, 60]])

1. sin(array1)

2. cos(array1)

3.tan(array1)

4. sqrt(array1)

5. exp(array1)

6. log10(array1)

60. Perform the following Element-wise Mathematical Operations using Numpy Array.

array1 = np.array([[10, 20, 30], [40, 50, 60]])

array2 = np.array([[2, 3, 4], [4, 6, 8]])

array3 = np.array([[-2, 3.5, -4], [4.05, -6, 8]])

1. Addition & subtraction of array1 and array2

2. Multiplication & division & reminder of array1 and array2

3. Power of array1 and array2

61. Perform the following Aggregate and Statistical Functions using Numpy Array. array1 = np.array([[10, 20, 30], [40, 50, 60]])

1. Mean

2. Standard deviation

3. Variance

4. Sum of array elements

5. Product of array elements

62. Use the Where(), Select() and Choose() function to identify the element is less than 4, mul by 2 else by 3. np.array([[1, 2, 3], [4, 5, 6]])

63. Perform the following Logical Operations using Numpy Array.

thearray = np.array([[10, 20, 30], [14, 24, 36]])

1. logical_or(Condition array<10, array>15)

2. logical_and(Condition array<10, array>15)

3. logical_not(Condition array<20)

64. Perform the following Standard Set Operations using Numpy Array.

array1 = np.array([[10, 20, 30], [14, 24, 36]])

array2 = np.array([[20, 40, 50], [24, 34, 46]])

1. Find the union of two arrays

2. Find the intersection of two arrays

3. Find the set difference of two arrays

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SYLLABUS FOR 2nd Sem BCA PROGRAMME

Relational Database Management System (05101156)

Type of Course: BCA

Prerequisite: Basic knowledge of Data and Data Processing

Rationale: Provide Conceptual insight about how database design and implementation takes place and relational operations of database

Teaching and Examination Scheme:

Teaching Scheme			Credit	Examination Scheme					Total
				External		Internal			
Lect Hrs/ Week	Tut Hrs/ Week	Lab Hrs/ Week		T	P	T	CE	P	
3	0	2	4	60	30	20	20	20	150

Lect - Lecture, **Tut** - Tutorial, **Lab** - Lab, **T** - Theory, **P** - Practical, **CE** - CE, **T** - Theory, **P** - Practical

Contents:

Sr.	Topic	Weightage	Teaching Hrs.
1	**Introduction to Database System**: • Data, Information • Data Management • File-based Data Management • Database • Database Systems • Organization of a Database • Characteristics of Data in a Database • DBMS, Benefits of DBMS • Functions ,Components of DBMS • Data dictionary, Database Users • Database Architecture • Data abstraction • ANSI/SPARC Architecture • Logical and Physical data independence • Database languages, Database Design • Database constraints	21%	10
2	**Data Model and Entity Relationship Modeling**: **Data Model** Conceptual • Physical and Logical Database Models • Database relationships • Hierarchical model • Network Model • Relational Model • E-R model **Entity Relationship Modeling** E-R Model, Components of an E-R Model • E-R conventions • Relationships • Composite entities • Entity list, E-R diagrams • E-R Modeling symbols • Super class • Subclass entity types • Attribute inheritance • Specialization, Generalization • Specialization/ generalization constraints, • Categorization	21%	10

3	**Relational Database Design and Relational Algebra and Calculus**: **Relational Database Design** Relational Algebra operations • Aggregate functions • Update operations • Types of relational calculus • Domain relational calculus **Relational Algebra and Calculus** Relational Data structure • Relational data manipulation • Integrity constraints • Pitfalls of Relational database design • Decomposition • Functional dependencies • Normalization,Keys • Relationships • First Normal Form(1NF) • Second Normal form(2NF) • Third normal Form (3NF) • Boyce-Codd Normal Form (BCNF) • Fourth Normal Form (4NF) Fifth Normal Form (5NF) • Lossless join dependency • Domain-Key Normal Form (DCNF) • Denormalization	21%	10
4	**Object Relational and Extended Relational Database**: Database design for an ORDBMS, Nested relations and collections, Storage and access methods, An overview of SQL3, Systems comparison of RDBMS, OODBMS and ORDBMS.	16%	8
5	**PL/SQL, Cursor and Trigger and Stored Procedures**: **PL/SQL, Cursor and Trigger** Basic code structure, Variables, Conditional statements, looping (loop statements, while loops, for loops, cursor FOR loops), Triggers. **Stored Procedures** Understanding the main features of stored procedures, stored procedure architecture, Advantages of using procedures. Stored procedures - functions, procedures and packages.	21%	10

***Continuous Evaluation:**

It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.

Reference Books:

1. Database System Concepts
   Silberschatz, Korth, Sudarshan; McGraw Hill Publication; 4th Edition
2. An Introduction to Database Systems
   C. J. Date, A. Kannan, S. Swamynathan; Pearson Education; 8th Edition
3. Database Systems: Concepts, Design and Applications
   S. K. Singh; Pearson Education
4. SQL, PL/SQL – The Programming Language
   Ivan Bayross; BPB Publications
5. Database Management Systems
   Raghu Ramakrishnan, Johannes Gehrke; McGraw Hill Publication

Course Outcome:

After Learning the course the students shall be able to:

1)Understand fundamental concepts and terminologies related to DBMS and RDBMS.
2)Model and represent relationships between database entities
3)acquire skills and working knowledge in RDBMS domain
4)explain relational algebra and ORDBMS concepts
5)perform normalization of provided data and develop relational databases
6)apply PL/SQL Techniques such as cursors, stored procedures, and triggers to solve given data-driven problems.

List of Practical:

1. Create a table for Customer.

Column Name	Format
cust_id	char(5)
Lname	char(15)
Fname	char(15)
Area	char(2)
phone_no	number(8)

2. Create a table for Movie

Column Name	Format
mv_no	number (5)
Title	char(25)
Type	char(10)
Star	char(25)
Price	number(8,2)

3. Create a table for invoice

Column Name	Format
inv_no	char(3)
mv_no	number(5)
cust_id	char(5)
issue_date	date
return_date	date

4. Insert the below Record in the Customer table.

Cust_id	lname	fname	area	Phone_no
a01	Patel	Vijay	sa	381334
a02	Saitwal	Vandana	mu	556037
a03	Jaguste	Pramada	da	372631
a04	Navindgi	Basu	ba	666612
a05	Sreedhran	Ravi	va	-
a06	-	Rukmini	ga	512527

5. Insert the below record in the Movie table

mv_no	title	type	Star	Price
1	Bloody Vengeance	action	Jackie Chan	180.95
2	The firm	thriller	Tom Cruise	200.00
3	Pretty woman	romantic	Richarge Gere	150.00
4	Home alone	comedy	Macaulay Culkin	150.55
5	The fugitive	thriller	Harrison Ford	200.00
6	Coma	suspence	Michael Douglas	100.00
7	Dracula	horror	Gray Oldman	150.00
8	Quick change	comedy	Bill Murray	100.00
9	Gone with the wind	drama	Clarke Gable	200.00
10	Carry on doctor	comedy	Leslie Phillips	100.00

6. Insert the below record in the invoice table

inv_no	mv_no	cust_id	issue_date	return_date
i01	4	a01	13-jan-96	25-jan-96
i02	3	a02	12-feb-96	15-feb-96
i03	1	a02	15-feb-96	18-feb-96
i04	6	a03	10-mar-96	13- mar -96
i05	7	a04	05-feb-96	08-feb-96
i06	2	a06	18-mar-96	21-mar-96
i07	9	a05	07-jan-96	10-jan-96
i08	9	a01	11-feb-96	14-feb-96
i09	1	a05	15-feb-96	28-feb-96

7. Do the Following:

Create the table Client_Master

Column Name	Data Type	Size
CLIENTNO	Varchar2	6
NAME	Varchar2	20
ADDRESS	Varchar2	50
CITY	Varchar2	20
PINCODE	Int	8
STATE	Varchar2	20
BAL_DUE	Decimal	10,2

Insert the following data into table

CLIENTNO	NAME	ADDRESS	CITY	PINCODE	STATE	BAL_DUE
C0001	Rohan Joshi	Khapaitya Chakla	Surat	395003	Gujarat	15000
C0002	Mamta Mazumdar	Salt Lake	Kolkata	460012	West Bengal	5000
C0003	Chhaya Bankar	Worli	Mumbai	400054	Maharashtra	2000
C0004	Ashwini Rathod	Ghangaur Ghat	Udaipur	780011	Rajasthan	7000
C0005	Ivan Bayross	Indiranagar	Bangalore	560050	Karnataka	1500
C0006	Deepak Sharma	Bandra	Mumbai	400002	Maharashtra	4300
C0007	Shymali Bhide	Juhu	Mumbai	470912	Maharashtra	2100

Queries:

1. List the details of the client according to the bal_due
2. List all clients who are located in Mumbai
3. Show different types of state in “Client_Master” table by eliminating the repeated states.
4. Change the city of client no “C0005” to Mangalore.
5. Change the bal_due of client no “C0001” to Rs. 1000
6. Delete from Client_master where the state holds the value ”Rajasthan”
7. Add a column name “Mobile” of data type “Number” & size=”10”.
8. Create a table “Balance_Details” having three 3 fields (ClientNo, Name, Bal_Due) from the source table name “Client_master” and rename the field Bal_Due to Balance.
9. Change the name of “Client_Master” table to “Customer”

8. DO the Following:

Table Name : Employee

Employee_no	First_name	Last_name	Salary	Joining date	Department
1	John	Abraham	100000	01-JAN-13	Banking
2	Michael	Clarke	80000	01-APR-13	Insurance
3	Roy	Thomas	70000	21-May-13	Banking
4	Tom	Jose	60000	08-Dec-13	Insurance
5	Jerry	Pinto	65000	11-Feb-14	Marketing
6	Philip	Mathew	45000	01-Jul-14	Services
7	John	Henry	55000	01-Jan-15	Technical
8	Ivan	Bayross	60000	01-Aug-15	Sales

Table Name : Incentives

Employee_Ref_Id	Incentive_date	Incentive_amount
1	01-Feb-13	5000
2	01-Dec-13	3000
3	01-Mar-13	4000
4	21-Mar-15	4500
5	01-Sep-15	3500

Queries:

1. Create primary key Employee_id in Employee Table

2. Create EMPLOYEE_REF_ID in INCENTIVES table as foreign key with respect to EMPLOYEE_ID in employee table

3. Get all employee details from the employee table

4. Get First_Name,Last_Name from employee table.

5. Get First_Name from employee table using alias name “Employee Name”

6. Get First_Name from employee table in upper case

7. Get First_Name from employee table in lower case.

8. Get unique DEPARTMENT from employee table

9. Queries of Employee table.

1. Get all employee details from the employee table order by First_Name Ascending

2. Get all employee details from the employee table order by First_Name descending

3. Get all employee details from the employee table order by First_Name Ascending and Salary descending

4. Get employee details from employee table whose employee name is “John” (like)

5. Select * from EMPLOYEE where FIRST_NAME='John'

6. Get employee details from employee table whose employee name are “John” and “Roy”

7. Get employee details from employee table whose first name starts with 'J'

8. Get employee details from employee table whose first name contains 'o'

9. Get employee details from employee table whose first name ends with 'n'

10. Get employee details from employee table whose first name ends with 'n' and name contains 4 letters

11. Get employee details from employee table whose first name starts with 'J' and name contains 4 letters

12. Get employee details from employee table whose Salary greater than 60000

13. Get employee details from employee table whose Salary less than 80000

14. Get employee details from employee table whose Salary between 50000 and 80000

15. Get employee details from employee table whose name is 'John' and 'Michael'.

16. Get position of 'o' in name 'John' from employee table (skip)

17. Get employee details from employee table whose salary is minimum

18. Get employee details from employee table whose salary is maximum

19. Count the total number of department from employee table

20. Calculate the average salary of employee from employee

10. Queries

1. Get First_Name from employee table in upper case

2. Get First_Name from employee table in lower case.

3. Get position of 'o' in name 'John' from employee table

4. Select first 3 characters of FIRST_NAME from EMPLOYEE

5. Get FIRST_NAME from employee table after removing white spaces from right side

6. Get FIRST_NAME from employee table after removing white spaces from left side.

7. Get length of FIRST_NAME of all employees from employee table

8. Get First_Name from employee table after replacing 'o' with '$'

9. Get First_Name and Last_Name as single column from employee table separated by a '_'

10. Get FIRST_NAME ,Joining year, Joining Month and Joining Date from employee table separated by '_'

11. Get employee details from employee table whose joining year is “2013”.

12. Get employee details from employee table whose joining month is “January”

13. Get employee details from employee table who joined before January 1st 2013

14. Get employee details from employee table who joined after January 31st

15. Get Joining Date and Time from employee table

16. Get difference between JOINING_DATE and INCENTIVE_DATE from employee and incentives table.

11. Queries

1. Find out how many employees are there in each department

2. Find out total salary per department.

3. Find out the average salary per department.

4. Show list of departments who has more than 1 employee

5. Show list of department whose total salary is greater than 50000

6. Show list of department whose average salary is less than 50000

7. Show list of department whose average salary is between 50000 and 80000

8. Show the total no of employees whose joining month is same.

9. Show the total no of employees whose joining year is same.

10. Find total salary who have joined in same month

11. Find total salary who have joined in same month and total salary is greater than 50000

12. Select employee details from employee table if data exists in incentive table

13. Display the employee name of all those who received their intencives

14. Find out the employees who have their incentives less than 5000

15. Update incentive table where employee name is 'John'

16. Select first_name, incentive amount from employee and incentives table for those employees who have incentives

17. Select first_name, incentive amount from employee and incentives table for those employees who have incentives and incentive amount greater than 3000

18. Select first_name, incentive amount from employee and incentives table for those employees who have incentives and incentive amount less than 3000

19. Select first_name, incentive amount from employee and incentives table for all employes even if they didn't get incentives

12. Do the Following:

Create a table as following:

Dept deptno	**Dname**	**Loc**
10	ACCOUNTING	NEW YORK
20	RESEARCH	DALLAS
30	SALES	CHICAGO
40	OPERATIONS	BOSTON

Emp_no	**Ename**	**Job**	**Mgr**	**hiredate**	**Sal**	**Comm**	**Deptno**
7839	King	President	-	17-11-1981	5000		10

7698	Blake	Manager	7839	01-05-1981	2850	30
7782	Clerk	Manager	7839	09-06-1981	2450	10
7566	Jones	Manager	7839	02-04-1981	2975	20
7788	Scott	Analyst	7566	13-07-1987	3000	20
7902	Ford	Analyst	7566	03-12-1981	3000	20
7369	Smith	Clerk	7902	17-12-1980	800	20
7499	Allen	Salesman	7698	20-02-1981	1600 300	30
7521	Ward	Salesman	7698	22-02-1981	1250 500	30
7654	Martin	Salesman	7698	28-09-1981	1250 1400	30
7844	Turnor	Salesman	7698	08-09-1981	1500	30
7876	Adams	Clerk	7788	13-07-1987	1100	20
7900	James	Clerk	7698	03-12-1981	950	30
7934	Miller	Clerk	7782	23-01-1982	1300	10

Queries:

1. Select all record from emp table where deptno =10 or 40.
2. Select all record from emp table where deptno=30 and sal>1500.
3. Select all record from emp where job not in SALESMAN or CLERK.
4. Select all record from emp where ename in 'BLAKE','SCOTT','KING'and'FORD'
5. Select all records where ename starts with ‘S’ and its lenth is 6 char.
6. Select all records where ename may be any no of character but it should end with ‘R’.
7. List the emps who are joined in the year 1981
8. List the emps who are joined in the month of Aug 1980
9. Display the avg salaries of all CLERKS
10. List all the emps except ‘president’ & ‘Manager’ in asc order of salaries
11. Count MGR and their salary in emp table.
12. In emp table add comm+sal as total sal.
13. Select any salary <3000 from emp table.
14. Select all salary <3000 from emp table.
15. Select all the employee group by deptno and sal in descending order.
16. List the emps who are working under Manager
17. List all the clerks of deptno 20
18. Find the 3rd MAX salary in the emp table.
19. Find the 3rd MIN salary in the emp table.

13. PL/SQL Programs

1. Hello World Program in PL/SQL.
2. PL/SQL Program To add Two Numbers.
3. PL/SQL Program For Prime Number.
4. PL/SQL Program To Find Factorial of a Number.
5. PL/SQL Program to Print Table of a Number.
6. PL/SQL Program for Reverse of a Number
7. PL/SQL Program for Fibonacci Series
8. PL/SQL Program to Check Number is Odd or Even
9. PL/SQL Program to Reverse a String
10. Pl/SQL Program for Palindrome Number
11. PL/SQL Program to Swap two Numbers
12. PL/SQL Program for Armstrong Number
13. PL/SQL Program to Find Greatest of Three Numbers
14. PL/SQL Program to Print Patterns

14. PL/SQL Cursor Programs

1.Write a Program for Implicit Cursor

2. Write a Program For Explicit Cursor

15. Trigger Programs

Create three tables

Student (Roll_no, Name, Contact, Marks)

Student_copy (Roll_no, Contact)

Student_update_copy (Roll_no, New_Contact, Old_contact)

A. Create a trigger to insert Roll no and Contact number of student on insertion of any record in Table Student.

B. Create a trigger to insert Roll no New Contact number and old Contact number of student on updation of contact number in Table Student.

16. Procedure Programs.

1. Write a procedure to insert data in employee table.
2. Write a procedure to update contact number of employee in employee table.
3. Write a procedure to find name of manager for given employee id.
4. Write a procedure to get all the details (emp_id, name, city of residence,
5. company name, city of work, manager name, salary) of given employee id.

PARUL UNIVERSITY - Faculty of IT & Computer Science

Department of Computer Application

SYLLABUS FOR 2nd Sem BCA PROGRAMME

Business Information Systems (05101201)

Type of Course: BCA

Prerequisite: Basic Knowledge of computer systems and Business Terms

Rationale: The objective of this course is to familiarize students with basics of Business Information Systems and its importance

Teaching and Examination Scheme:

Teaching Scheme			Credit	Examination Scheme					Total
				External		Internal			
Lect Hrs/ Week	Tut Hrs/ Week	Lab Hrs/ Week		T	P	T	CE	P	
3	0	0	3	60	0	20	20	0	100

Lect - Lecture, **Tut** - Tutorial, **Lab** - Lab, **T** - Theory, **P** - Practical, **CE** - CE, **T** - Theory, **P** - Practical

Contents:

Sr.	Topic	Weightage	Teaching Hrs.
1	**Business and Management Information**: Business Organization, Business Work Area,Business Information,Levels of Information,Categories of Information,Quality of Information, Management Information, Management Reports-System Theory,Deterministic and Probabilistic Systems,Closed and Open Systems,Regulation in Systems Open-loop Systems,Data systems and Users-User requirements-User/D.P. staff cooperation, User knowledge and training, Personnel, Steering committees	25%	12
2	**Computer Files and Databases**: Business Files, Data Storage Media, Direct Access File Organization, Data Modeling: Documenting Information Architecture, User's View of a Computerized Database, Database Management Systems (DBMS), Text, Database and Hypertext, Evaluating Information Used in Business Processes, Models as Components of Information Systems	25%	12
3	**Communication, Decision Making and Different Types of Information System**: Basic Communication Concepts, Personnel, Impersonal and Anonymous Communication-Time, place and Direction of Communication, Data Communication, Data Transmission, Types of Networks, Basic Decision Making Concepts, Steps for Decision Making Process, Transaction Processing System	25%	12
4	**Various Systems**: Inventory Management (INMANS) System Design, Account Payable System (ACPAYS) Design, Payroll System (PAYSY) Design	25%	12

***Continuous Evaluation:**

It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.

Reference Books:

1. Business Information Systems
   Muneesh Kumar; Vikas Publishing House Pvt. Ltd; First Edition
2. Information Technology & System Audit (TextBook)
   C A Pankaj Goel; AJ publication; First Edition

Course Outcome:

After Learning the course the students shall be able to:

1. Describe use and functions of management information systems
2. Analyze requirements for developing information systems to support strategic business operations
3. Understand how IT helps in shaping the operations of business environment
4. Explain need of information gathering and decision-making tools in taking rational decisions.
5. Recognize need for applications of MIS in manufacturing and service sector

PARUL UNIVERSITY - Faculty of IT & Computer Science

Department of Computer Application

SYLLABUS FOR 2nd Sem BCA PROGRAMME

Open Source Technology using PHP (05101204)

Type of Course: BCA

Prerequisite: Basic Knowledge of HTML and Internet

Rationale: Web Development skills for Computer Science Student.

Teaching and Examination Scheme:

Teaching Scheme			Credit	Examination Scheme					Total
				External		Internal			
Lect Hrs/ Week	Tut Hrs/ Week	Lab Hrs/ Week		T	P	T	CE	P	
3	0	4	5	60	30	20	20	20	150

Lect - Lecture, **Tut** - Tutorial, **Lab** - Lab, **T** - Theory, **P** - Practical, **CE** - CE, **T** - Theory, **P** - Practical

Contents:

Sr.	Topic	Weightage	Teaching Hrs.
1	**Overview of Web**: Introduction Websites : Static and Dynamic, Client side & Server Side Scripting ,Web Server (IIS & Apache), Protocols : HTTP,HTTPS & FTP, ISP and its Services, Web Hosting, Virtual Host, Multi-Homing , Document Root	7%	4
2	**Configuration & Installation of PHP**: System Requirements for PHP, PHP installation & Configuration in IIS / Apache Web Server, Working with WAMP / XAMP, Php.ini & .ht access files	5%	2
3	**PHP Basics:**: Overview of PHP, PHP syntax, How PHP Code Works, Creating & Running PHP Webpage, PHP variable & its scope : local, global, static, parameter, PHP Operators, Conditional Structure, Looping Structure	10%	4
4	**PHP Arrays & Functions**: PHP Array, Indexed Arrays, Associative Arrays, Loop through Indexed & Associative Arrays, Array Lib. Functions : Count, current, next, previous, end, sort, rsort, assort, arsort, array_merge, array_reverse, array_diff(), array_shift(), array_slice(), array_unique(), array_unshift(), array_keys(), array_key_exists(), array_push(), array_pop(), array_multisort(), array_search(), PHP Functions, Functions with arguments, Miscellaneous Functions : define, constant, include, require, header, die, exit	13%	8

5	**Handling Form**: HTML Form element & its attributes, Send Form data using GET Method & POST Method, Receive Form data using $_GET, $_POST & $_REQUEST variables, File uploading, Mail sending using mail()	10%	4
6	**State Management**: Query string, Cookies, Session,Hidden fields	5%	2
7	**Working with MySQL**: Introduction to MySQL, MySQL Data Types. **MySQL functions:** mysql_connect, mysql_close, mysql_error, msyql_errno, mysql_select_db, mysql_query, mysql_fetch_array, mysql_num_Rows, mysql_affected_Rows, mysql_fetch_assoc, mysql_fetch_field ,mysql_fetch_object,mysql_fetch_ row ,mysql_insert_id, mysql_num_fields, mysql_result, mysql_tablename , mysql_list_tables, mysql_list_field s, mysql_field_type , mysql_db_name ,mysql_db_query , mysql_data_seek	15%	8
8	**Object Oriented Programming with PHP**: Classes & Objects, Constructor & destructor, Declaring & accessing methods & Properties, Inheritance, Abstract class & methods, Exception handling	10%	5
9	**PHP with Ajax & Jquery**: Introduction to Ajax, How Ajax works with PHP, Introduction to JQuery, How JQuery works, Jquery Syntax, Jquery Selectors, Jquery Events & Methods, Jquery Effects	10%	5
10	**Content Management System**: Introduction to CMS, overview of CMS, Advantages of CMS, Word press [Introduction & Installation], working with word press , themes , plugins, widgets, user roles, creating Posts & Pages.	15%	6

***Continuous Evaluation:**

It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.

Reference Books:

1. Beginning PHP 5.3
   Matt Doyle; Wrox
2. PHP Bible
   Tim Converse, Joyce Park; First Edition
3. Professional PHP 5
   Ed Lecky-Thompson, Heow Eide-Goodman, Steven D. Nowicki, Alec Cove

Course Outcome:

After Learning the course the students shall be able to:

1. Understand significance of open source technology
2. Design and develop data driven web application in PHP and MYSQL .
3. Develop dynamic web application using ajax, JavaScript and object oriented principle in PHP

List of Practical:

1. display hello world

Write a PHP Script that will display hello world

2. **calculate sum**

   Write PHP script that will take three integer values for and calculate sum of it.

3. **calculate average of three values**

   In above PHP script calculate average of three values.

4. **take two strings and concatenate it.**

   Write a PHP Script that will take two strings and concatenate it.

5. **swap two integer values**

   Write a PHP Script that will assign two integer values and swap their values.

6. **swap two integer values without third variable.**

   Write PHP Script that will assign two integer values and swap their values without third variable.

7. **perform arithmetic operations**

   Write a PHP Script that will assign two integer values that will perform arithmetic operations and display it in tabular format

8. **two numbers and check their equality**

   Write a PHP Script that will assign two numbers and check their equality

9. **check they are identical or not**

   Write a PHP Script that will assign two numbers and check they are identical or not

10. **check number is positive or negative**

    Write a PHP Script that will check number is positive or negative

11. **Even or Odd**

    Write a PHP Script that will check number is Even or Odd.

12. **check number is divisible by 13 and 7**

    Write a PHP Script that will check number is divisible by 13 and 7

13. **Pattern**

    1
    12
    123
    1234

14. **pattern**

1
22
333
4444

15. **Pattern**

    1234
    123
    12
    1

16. **pattern**

    4444
    333
    22
    1

17. **nested for loop that creates a chess board**

    Write a PHP script using nested for loop that creates a chess board as shown below.

18. **find out max number.**

    Write a PHP function that will take three integer values and find out max number.

19. **function that will take an integer value and return sum of digits.**

    Write a PHP function that will take an integer value and return sum of digits.

20. **calculate the factorial of a number**

    Write a function to calculate the factorial of a number (non-negative integer). The function accept the number as a argument

21. **check a number is prime or not**

    Write a PHP function to check a number is prime or not.

22. **reverse a string.**

    Write a PHP function to reverse a string.

23. **function that checks whether a passed string is palindrome or not**

    Write a PHP function that checks whether a passed string is palindrome or not?

24. **simple PHP class which displays the following string : 'MyClass class has initialized !'**

    Write a simple PHP class which displays the following string : 'MyClass class has initialized !'

25. **simple PHP class which displays an introductory message**

Write a simple PHP class which displays an introductory message like "Hello All, I am ALKA", where "ALKA" is an argument value of the method within the class.

26. sorts an ordered integer array

Write a PHP class that sorts an ordered integer array with the help of sort() function

27. PHP Calculator

Write a PHP Calculator class which will accept two values as arguments, then add them, subtract them, multiply them together, or divide them on request.

28. Calculate the difference between two dates using PHP OOP approach.

Calculate the difference between two dates using PHP OOP approach.
Sample Dates : **1981-11-03, 2013-09-04**
Expected Result : **Difference : 31 years, 10 months, 1 days**

29. convert string to Date and DateTime

Write a PHP script to convert string to Date and DateTime.
Sample Date : **'12-08-2004'**
Expected Output : **2004-12-08**
Note : PHP considers '/' to mean m/d/Y format and '-' to mean d-m-Y format.

30. take name and message from user and display it.

Write a HTML Form & PHP Script that will take name and message from user and display it.

31. guessing game,

Write a PHP Script for guessing game,which will take one number from user and check that number is right or wrong

32. count the number of guessing attempts using hidden fields

In above PHP Script count the number of guessing attempts using hidden fields

33. displays the marksheet of the student.

Write a php page and create a user form which asks for marks in five subjects out of 100 and

then displays the marksheet of the student. The format is as follows:

Name of Student*:

Marks in Each Subject

Subject 1* :

Subject 2* :

Subject 3* :

Subject 4* :

Subject 5* :

Total Marks Obtained:

Total Marks:

-

Note: All the entries marked (*) are to be input by the user. And use a submit button to post the

entries in the form using the POST method.

1. **Write a php page and create a user form which asks for marks in five subjects out of 100 and**

then displays the marksheet of the student. The format is as follows:

Name of Student*:

Marks in Each Subject

Subject 1* :

Subject 2* :

Subject 3* :

Subject 4* :

Subject 5* :

Total Marks Obtained:

Total Marks:

-

Note: All the entries marked (*) are to be input by the user. And use a submit button to post the

entries in the form using the POST method.

34. send mail

Write a PHP Script that will be used for mail send.

35. upload a file.

Write a php script that will help to upload a file.

36. **create an IMCA database**

    Write a PHP that will create an IMCA database

37. **create sem_5 table under IMCA Database**

    Write a PHP Script that will create sem_5 table under IMCA Database

38. **insert data into sem_5 table.**

    Write a PHP Script that will insert data into sem_5 table.

39. **display records of sem5 table in tabular format.**

    Write a PHP Script that will display records of sem5 table in tabular format.

40. **delete records from sem_5 table.**

    Write a PHP Script that will delete records from sem_5 table.

41. **drop table sem_5 from database**

    Write a PHP Script that will drop table sem_5 from database

42. **load content from text file using ajax.**

    Write a PHP Script that will load content from text file using ajax.

43. **suggest namelist to user on key enter event using ajax**

    Write a PHP Script that will suggest namelist to user on key enter event using ajax

44. **display employee information on selection of name using ajax.**

    Write a PHP Script that will display employee information on selection of name using ajax.

46. **jquery code that hide / show text on button click event**

    Write a jquery code that hide / show text on button click event

47. **jquery code that will fade in, fade out,fade toggle images on click event**

    Write a jquery code that will fade in, fade out,fade toggle images on click event

48. **slide up, slide down and slide togle panel on click event.**

    Write a jquery code that will slide up, slide down and slide togle panel on click event.

PARUL UNIVERSITY - Faculty of IT & Computer Science

Department of CDC

SYLLABUS FOR 2nd Sem BCA PROGRAMME

Communication Skills - II (05193152)

Type of Course: BCA

Prerequisite:

Rationale: Communication confidence laced with knowledge of English grammar is essential for all engineers.

Teaching and Examination Scheme:

Teaching Scheme			Credit	Examination Scheme					Total
Lect Hrs/ Week	Tut Hrs/ Week	Lab Hrs/ Week		External		Internal			
				T	P	T	CE	P	
2	2	0	4	0	0	0	100	0	100

Lect - Lecture, **Tut** - Tutorial, **Lab** - Lab, **T** - Theory, **P** - Practical, **CE** - CE, **T** - Theory, **P** - Practical

Contents:

Sr.	Topic	Weightage	Teaching Hrs.
1	**Body Language**: The students will be shown the positive and negative body languages and will be taught how to project a better body language in personal and professional life with help of interactive videos, exercises and Activities.	3%	2
2	**Goal Setting**: Goal setting involves helping the students to make clear cut achievable goals. This session will teach the students, how to plan, execute and realise their goals	3%	2
3	**Habit formation**: The students will be given a detailed study about the formation of habits and its effects. They will also be taught different techniques to cultivate good habits that will help them to refine themselves.	5%	2
4	**Impression Management**: Will lead to understanding of how controlling self-presentation and managing behavior in certain situations, to take control over the impression left on others will help maintain a good reputation, and allow others to see the value one brings to the table	5%	2
5	**Simple and effective communication**: This session involves self awareness, behaviours, communication, listening, empathy and tips and techniques for understanding others better. It will help the students to have a better relation with people both personally and professionally.	3%	2

6	**Team building**: This session is dedicated to make the students understand the importance of Team work and how to work as a team. It involves activities that will help the students break the ice amongst them and to work productively as a team.	5%	2
7	**Tenses**:	5%	2
8	**Classification of sentences**:	5%	2
9	**Adjectives and Adverbs**:	5%	2
10	**Forms and Speech and Voice**:	5%	2
11	**Punctuations**:	3%	2
12	**Email and letter writing**:	5%	2
13	**Report and Proposal writing**:	3%	2
14	**Listening to workplace communication**:	3%	2
15	**Speaking - Participating in discussions**:	5%	2
16	**Reading Introduction**:	5%	1
17	**Note Writing**:	3%	1
18	**Memo Writing**:	3%	1
19	**Listening Skills – Questions**:	5%	2
20	**Listening Skills worksheet**:	2%	1
21	**Listening Skills**:	5%	2
22	**Listening Skills Activity**:	2%	1
23	**Speaking Skill Building Introduction**:	4%	2
24	**Speaking-Skill Building IS 16-04**:	4%	2
25	**Speaking Skill Building Activity**:	4%	2

***Continuous Evaluation:**

It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.

Reference Books:

1. Booklets on English Grammar and Communication confidence

2. Word Power Made Easy
   Norman Lewis; Goyal Publishers
3. Understanding and Using English Grammar
   Betty Azar & Stacy Hagen; Pearson Education
4. Made to Stick: Why some ideas take hold and others come unstuck
   Chip and Dan Heath; RHUK Publication

Course Outcome:

After Learning the course the students shall be able to:

1. Come to terms with basics of English grammar
2. Display high level of communication confidence