INFORMATICS PRACTICES

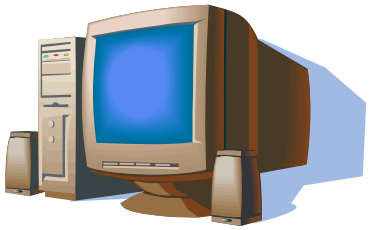
CLASS - XI

Student's Handbook

Easy & systematic approach of Learning

[For Distribution to Students]

(As per latest CBSE's Curriculum 2012)



[◈Split-up Syllabus ◈ Theory & Practical Assignments, ◈Guidelines]

- COMPILED BY-

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About the Handbook

Respected Teachers, As you are aware that CBSE has changed the entire syllabus of Informatics Practices and introduced Java's GUI Programming and MySQL based on Open Source environment.

As per the latest syllabus mentioned in CBSE Curriculum 2012, the students must go through some practical assignments to enhance their practical skill along with class room teaching learning.

This Student's Handbook is a result of compilation of some theoretical and practical Hand-on exercises to cover the whole syllabus in Learning-by-Doing approach.

This Handbook is an attempt to standardize the Teaching & Learning activities of Informatics Practices (065) subject at XIth standard in KVs.

I would like to pay my sincere gratitude to the Publisher and Author of the book "Informatics Practices –XI" published by Dhanpat Rai & Co. Since most of the questions were taken from this book.

Your suggestions and feedback are always welcome to improve this Handbook.

Many-many thanks to all my students of class XI, who helped me by typing the materials and giving feedback.

Regards,
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SPLIT – UP SYLLABUS

Class XI

Informatics Practices (Theory)

Month	Chapter No.	Name of Chapter	No of Theory Periods	No of Practical Periods
June	1	Hardware Concepts	8	-
July	2	Software Concepts	12	4
	3	Getting Started with Programming using IDE	5	5
August	4	Programming fundamentals	5	5
	5	Control Structures	5	10
September	6	JAVA GUI Programming using Swing Controls -I	5	6
	7	JAVA GUI Programming using Swing Controls -I	5	6
	8	JAVA GUI Programming using Swing Controls -I	5	6
October	9	Introduction to Methods*	3	2
	10	Introduction to Classes*	3	-
	11	Programming Guidelines	4	-
November	REVISION		10	-
	12	Database Management System	5	-
December	13	Introduction to MySQL	5	-
	14	Simple Queries Using SQL statements	10	10
January	15	Functions in MySQL	15	10
	16	Manipulating Data of a table	10	16
February	17	IT Applications	5	20
March	REVISION		10	-
TOTAL 110+ (20) Revision			**130**	**100**

* Topics are not included in CBSE curriculum 2012, but recommended to learn.

DETAILED SPLIT – UP SYLLABUS
Class XI
Informatics Practices (New Syllabus)

Unit	Topic	Period		Marks	
		Theory	Practical	Theory	Practical
1	Introduction to Computer Systems	20	04	10	02
2	Introduction to Programming	40	40	25	16
3	Relational Database Management System	45	36	30	06
4	IT Application	05	20	05	06
	Total	**110**	**100**	**70**	**30**

UNIT 1: Introduction to Computer Systems

June

Hardware Concepts: **Periods: Theory [08] – Practical [00]**

Computer organization (basic concepts): CPU, Memory (RAM and ROM), I/O devices, communication bus, ports (serial, parallel, network, phone);

Input devices: Keyboard, Mouse, Light pen, Touch Screens, Graphics Tablets, Joystick, Microphone, OCR, Scanner, Smart Card reader, Barcode reader, Biometric sensor, web camera;

Output Devices: Monitor/Visual Display Unit (VDU), LCD screen, Television, Printer (Dot Matrix Printer, Desk jet/ Inkjet/ Bubble jet Printer, Laser Printer), Plotter, Speaker;

Secondary Storage Devices: Floppy Disk, Hard Disk, Compact Disk, Magnetic Tape, Digital Versatile Disk (DVD), USB Drive, Memory cards - Comparative properties

Memory Units: Bit (Binary Digit)/Byte (K, MB, GB, TB and Petabyte)

July

Software Concepts: **Periods: Theory [12]- Practical [04]**

Operating systems, Need for operating system, major functions of Operating System, Memory Management;

Security of system: sources of attack and possible damages, virus and related entities - worms, propagation of these entities, virus detection using a tool, Desktop security, Digital certificates, Digital signature, cookies, firewall, password, file access permissions.

Types of Software: System Software, Utility Software, Application Software and Developer Tools System Software:

Productivity Tools

General Purpose Application Software: Word Processor, Presentation Tool, Spreadsheet Package, Database Management System;

Specific Purpose Application software (for example: Inventory Management System, Purchasing System, Human Resource Management System, Payroll System, Financial Accounting, Hotel Management and Reservation System, etc.);

Developer Tools: Compilers and Interpreters, Integrated Development Environment (IDE)

General features of Desktop: To be taught through practical. Refer to practical section.

Word Processing: To be taught through practical. Refer to practical section.

Spresdsheet : To be taught through practical. Refer to practical section.

UNIT 2: Introduction to Programming

Getting started with Programming using IDE **Period: Theory [05]- Practical [05]**

Introduction, Rapid Application Development using IDE (Integrated Development Environment);

Familiarization of IDE using basic Interface components-Label, TextField, TextArea, Button, CheckBox, RadioButton.
Creation of a simple Swing Application ("Hello World")

August

Programming Fundamentals **Period: Theory [05]- Practical [05]**

Data Types: Concept of data types; Built-in data types - byte, short, int, long, float, double, char, String (or any object), Boolean;
Variables:
Need to use variable, Declaring Variables, Variable Naming Convention, Assigning value to Variables;
Integer object method: parseInt
Double object method: parseDouble

Control Structures: **Period: Theory [05]- Practical [10]**

Decision Structure - if, if-else, switch; Looping Structure- while, do-while, for;

September

Developing General Application: **Period: Theory [15]- Practical [18]**

Getting Familiar with Java Swing User Interface components- Frame, Dialog, OptionPane, Panel, ScrollPane, Label, TextField, PasswordField, TextArea, Buttob, CheckBox, RadioButton, ComboBox, List, Table, FileChooser, ColorChooser, ToolBar, Menu.
Basic component handling methods/attributes
setText, getText, add, isSelected, setSelected, getX, getY, addActionListener.
Working with Swing controls (jButtons, jLabel, jTextField, jRadioButton, jCheckBox, jButtonGroup, jComboBox, jList, jTable and JOptionPane. (With commonly used properties and methods)

October

Introduction to methods: **Period: Theory [03]- Practical [02]**

Introduction to methods, Designing a simple methods, prototype, signature, Void keyword, Parameters to methods, returning value from methods.

Introduction to Classes: **Period: Theory [03]- Practical [00]**

Introduction to Classes, objects, types of members in classes, methods in classes, referencing object's member.
Concept of constructor methods, Use of constructors, types of constructors.

Programming Guidelines: **Period: Theory [04]- Practical [00]**

General Concepts; Modular approach; Stylistic Guidelines: Clearity and Simplicity of Expressions, Names, Comments, Indentation; Documentation and Program Maintenance; Running and Debugging programs, Syntax Errors, Run-Time Errors, Logical Errors;
Problem Solving Methodology and Techniques: Understanding of the problem, identifying minimum number of input required for output, Step by step solution for the problem, breaking down solution into simple steps, Identification of arithmetic and logical operations required for solution, Using Control Structure: Conditional control and looping (finite and infinite);

Revision & Cumulative Test
Autumn Break

November

UNIT 3: Relational Database Mgmt. System

Database Management System **Period: Theory [05]- Practical [0]**

Introduction to database concepts: Relation/Table, attribute/fields, Tuple / Rows;
Data Types - Number, Character and Date
Key - Primary Key, Candidate key, Alternate key;
Example of common Database Management System- MySQL, INGRESS, POSTGRES, ORACLE, DB2, MS SQL, Sybase.

December

Introduction to MySQL **Period: Theory [05]- Practical [0]**

(ANSI SQL 99 standard commands)

Classification of SQL Statements: **Period: Theory [10]- Practical [10]**

DML - SELECT, INSERT, UPDATE, DELETE;
DDL - CREATE, DROP, ALTER;
SQL SELECT Statement (working with demo/already existing tables): SELECT statement, Selecting All the Columns, Selecting Specific Column, Using Arithmetic Operators, Operator Precedence, Defining and using Column Alias, Duplicate rows and their Elimination (DISTINCT keyword), Displaying Table Structure (DESC command); SELECT Statement Continued: Limiting Rows during selection (using WHERE clause), Working with Character Strings and Dates, Working with NULL values;
Using Comparison operators - =, <, >, <=, >=, < >, BETWEEN, IN, LIKE(%), Logical Operators - AND, OR, NOT; Operator Precedence;
ORDER BY Clause, Sorting in Ascending/Descending Order, Sorting By Column Alias Name, Sorting On Multiple Columns;
W i n t e r B r e a k

January

Functions in MySQL: **Period: Theory [15]- Practical [10]**

String Function - CHAR(), CONCAT(),INSTR(), LCASE(), LEFT(), LOWER(), LENGTH(), LTRIM(), MID(), RIGHT(), RTRIM(), SUBSTR(), TRIM(), UCASE(), UPPER().
Mathematical Functions - POWER(), ROUND(), TRUNCATE().
Date and Time Functions - CURDATE() , DATE(), MONTH(), YEAR(), DAYNAME(), DAYOFMONTH(), DAYOFWEEK(), DAYOFYEAR(), NOW(), SYSDATE().

Manipulating Data of a Table/Relation: **Period: Theory [10]- Practical [16]**

Inserting New Rows, Inserting New Rows with Null Values, Inserting NUMBER, CHAR and DATE Values, Update Statement to Change Existing Data of a Table, Updating Rows in A Table, Delete statement - removing row/rows from a Table;
Creating Table using CREATE TABLE, ALTER TABLE for adding a new column, using naming conventions for column names;

February

UNIT 4: IT Applications

IT Applications **Period: Theory [05]- Practical [20]**

• e - Governance - Definition, Benefits to citizen, e-Governance websites and their salient features and societal impacts; e-governance challenges.

• e - Business - Definition, Benefits to customers and business, e-Business websites and their salient features and societal impacts; e-business challenges.

• e - Learning - Definition; Benefits to students (Learners), Teachers (Trainers) and School (Institution) Management; e-Learning websites and their salient features and societal impacts; e-Learning challenges.

March: *Revision and Session Ending Examinations*

THEORY - ASSIGNMENTS

Assignment No. 1

HARWARE CONCEPTS

TYPE A: VERY SHORT ANSWER QUESTION

1. What is a computer? Name functional components of a digital computer?

2. What is the function of main memory? What are the measuring units of memory?

3. What do you mean by terms Hardware, software & firmware?

4. What are the functions of operating system and language processor? Give examples of each.

5. What is Assembler, Compiler and Interpreter.

6. What do you understand by application software?

7. Write full forms of:

1. VDU
2. OMR
3. DMP
4. CD-ROM
5. MICR
6. LCD
7. CRT
8. DVD

8. What is the advantage of non-impact printers over impact printers?

9. Out of following devices, write whether they are input devices, output devices or storage devices. Also write their function.

1. Light pen
2. Flatbed plotter
3. Joystick
4. OMR
5. Web camera
6. Optical Disk
7. Magnetic Disk
8. MICR

10. What are the two types of RAM? Name various types of ROMs. Write their names in full forms.

11. What is communication bus? What are its types?

12. What is a port? Name some ports types briefly.

13. Name two ports that allow wireless connection of devices.

TYPE B: SHORT ANSWER QUESTIONS

1. What are characteristics and limitations of Computers?

2. What is the function of CPU in a computer system? What are its subunits?

3. Draw a block diagram of the main units of a computer hardware system and explain its functionality.

4. What are the software classifications? Discuss their functioning in brief.

5. How are computers classified? How are they different from one another?

6. What do you understand by the term 'Super Computers'? Give the name of super computers installed in India.

7. What are RAM and ROM? How are they alike? How are they different?

8. What is MICR? What are the advantages and disadvantages of MICR?

9. How is Optical Character Recognition (OCR) used for data input? What are the advantages and disadvantages of OCR?

10. What do you mean by Storage Devices? Describe the function of Hard Disk with a diagram.

11. Write brief notes on each of the following types of printer. Make clear the differences between them in terms of speed, cost and method of operation and suggest suitable application.

- Inkjet printer
- Dot matrix printer
- Laser printer

12. How may he following be used:

- A track ball
- A light pen
- A graphic tablet
- A touch screen

13. Briefly explain and differentiate between

(a) Data & information	(b) Input & Output unit
(c) Impact printer & Non-Impact printers	(d) VDU & LCD
(e) Hardware & Software	(f) Inkjet & Laser Printer
(g) Plotter & Printer	(h) Analog & digital Computers
(i) CPU & ALU	(j) OCR & MICR
(k) Magnetic Disk & Optical Disk	(l) Serial & Parallel Port

14. What is Bus? Explain its type? How they are different to each other?

15. Why do you think USB ports are popular these days?

16. What is a memory card? Discuss briefly its types.

TYPE C: LONG ANSWER QUESTION

1. What is contribution of computers towards our society? What are the advantages and disadvantages of computer data processing over manual data processing?

2. Why is input device? Discuss various types of input devices along with their working mechanism.

3. What is the role of an output unit? Discuss various types of output devices along with their working mechanism.

Assignment No. 2

SOFTWARE CONCEPTS

TYPE A: VERY SHORT ANSWER QUESTION

1. What is Program and Software package?
2. What are two categories of system software?
3. What is an Operating system? What is its role? Name some commonly used Operating systems.
4. What is application software? What are three categories of application software?
5. What is an IDE? What are developer tools?
6. Define the following.

1. Spam	2. Malware	3. Phishing
4. Firewall	5. Digital Signature	6. Digital Certificate

TYPE B: SHORT ANSWER QUESTIONS

1. What is system software? What role does it play in the functioning of the computer?
2. What is Operating System? Why it is called Resource Manager? Explain its functions.
3. Differentiate the following-
   i. Multiprogramming OS & Multiprocessing OS
   ii. Time sharing OS & real time OS
   iii. Compiler & Interpreter
   iv. Spyware & Adware
4. Write short notes on the following:
   i. Word processor
   ii. Electronic spreadsheet
   iii. DBMS
   iv. Graphic & Multimedia
   v. DTP software
5. What is Utility software? Discuss the role of utility software in the context of computer performance and tuning.
6. How is backup utility useful? Is it necessary to take backup of data?
7. What is a computer virus? How can it affect your computer?
8. Why are antivirus software considered important
9. What do you mean by System Security? What are different types of threats to computer security?
10. What are Malware? What types of damages can they cause to your computer?
11. What is Virus? Explain its types?
12. What is a Spam? How it is different from virus?
13. What do you understand by PC intrusion?
14. What measure would you take to avoid various types of threats?
15. What is denial-of-service (DoS) and sweeper attacks?

Assignment No. 3

GETTING STARTED WITH PROGRAMMING USING IDE

TYPE A: VERY SHORT ANSWER QUESTION

1. What is byte code?
2. Describe Java compilation? How it is different from ordinary compilation process?
3. How is Java byte code executed?
4. What is RAD? How it facilitates programmer to develop an application.
5. What are containers and child controls?
6. What happens to container control and its child controls if you delete the container control

TYPE B: SHORT ANSWER QUESTIONS

1. "Java is both a programming language and a platform". Comment on the statement.
2. Write a brief history of the Java.
3. What is the role of JVM ? How byte code makes a Java program platform independent?
4. What are different characteristics of Java?
5. Define the Event, message and method? How they are interrelated?
6. Name at least 3 commonly used swing controls. Also give some of their properties and methods.
7. Sketch a screen shot of NetBeans IDE and Name the various components.
8. Make a list Swing Containers and Swing Controls available in Palatte. Also write their use.
9. Write the steps to perform the following-
   (i) How to start a new project in NetBeans IDE.
   (ii) How to add a Frame.
   (iii) How to add TextField and Push button control on a form.
   (iv) How to change text, font and forecolor properties.
   (v) How to change the name of the push buttons to DisplayButton and of text field to dispTextField.
   (vi) How to change the caption of push button to "Display Message".
   (vii)Write down the TODO code/command for :
      a. On clicking the "Dsplay Message" button, dispTextField text field should display the message "Welcome in JAVA world."
      b. Close the application.
   (viii) How to run the application.

Assignment No. 4

PROGRAMMING FUNDAMENTALS

TYPE A: VERY SHORT ANSWER QUESTION

1. Name the character set supported by Java.
2. What is meant by token? Name the tokens available in Java.
3. What are keywords? Can keywords be used as identifiers?
4. What is an identifier? What is the identifier forming rule of Java?
5. Is Java case sensitive? What is meant by the term 'case sensitive'?
6. Which of the following are valid identifiers and why/why not?
Data_rec, _data, 1 data, data 1, my.file, asm, switch, goto, break
7. What is use of .setText() and .getText() methods ?
8. What is an integer constant? How Octal and Hexadecimal integers are represented in Java.
9. What kind of program elements are the following: 13, 'a', 4.38925, "a", main() ?
10. What kind of constants are the following: 14, 011, 0X2A, 17, 014, 0XBC1, 2.50 ?
11. What is a character constant in Java? How are nongraphic characters represented in Java?
12. Which escape sequences represent the newline character & null character?
13. What is floating constant in Java? How many ways can a floating constant be represented?
14. Write the following real constants into exponent form: 23.197, 7.214, 0.00005, 0.319.
15. Write the following real constants into fractional form: 0.31E04, 0.471E-04, 0.4E-05.
16. What are binary operators? Give examples of arithmetic binary operators.
17. Convert the 35, 30, 56 decimal numbers into its Binary form.
18. Convert the 010011 , 1010110, 01100011 into its Decimal form.
19. What will be the result of a =5/3 if **a** is (i) float (ii) int?
20. Assuming that res start with the value 25, what will the following code fragment print out?

```
System.out.println ( res-- ) ;
System.out.println (++res) ;
```

21. What will be the value of j = - - k + 2*k + (l = k, l++) if k is 20 initially ?
22. What will be the value of P = P* ++ J where J is 22 and P = 3 initially?
23. What will be the value of following, if j = 5 initially?
(i) (5* ++ j) % 6 (ii) (5* j++)%6
24. What will be the result of following expression if (i) age =25 (ii) age =65 (iii) age =85 ?
age > 65 ? 350 : 100.
25. What will be the result of following expression if (i) ans =700, val =300 (ii) ans =800,val =700 ?
ans - val < 500 ? 150 : 50
26. Write equivalent Java expressions for the following expressions :
(i) $ut + \frac{1}{2} ft^2$ (ii) |a| + b >= |b| + a (iii) $[(3x +5y / 5x +3y) - (8xy/2xy)]^{3/2}$ (iv) $e^{|2x\text{^}2 \ -4x|}$
27. What is meant by implicit and explicit type conversion?
28. What do you mean by type casting? What is type caste operator?
29. What will be the resultant type of the following expressions if *bh* represents a byte variable, *i* is an int variable, *fl* is a float variable and *db* is a double variable?
(i) bh – i + db / fl - i * fl + db / i (ii) (int) (fl + db)
30. Which class is used for using different mathematical methods in Java program?
31. The modulus operator (%) can be used only with integer operands. True/False?
32. The range of values for the long type data is ……
33. Which of the following represent(s) a hexadecimal number?
(a) 570 (b) (hex) 5 (c) 0X9G (d) 0X5

34. Which of the following assignments are invalid?
(a) float x =123.5 (b) long m =23 (c)int n =(int) false (d) double y =0X756

35. The default values of char type variable is ……..

36. The result of the expression 13 & 25 will be …….

37. The result of the expression 9|9 …….

38. Which of the following will produce a value of 22 if x =22.9?
(a) Math.ceil(x) (b)Math.round(x) (c)Math.abs(x) (d)Math.floor(x)

39. Which of the following will produce a value of 10 if x =9.7 ?
(a) Math.floor(x) (b) Math.abs(x) (c) Math.round(x) (d) Math.ceil(x)

40. Given the declarations

```
boolean b ;
short x1 = 100 , x2 = 200 , x3 = 300
```

Which of the following statements are evaluated to true ?
(a) b = x1 * 2 ==x2; (b) b = (x3 – 2 * x2 < 0)|| ((x3== 400) < 2 ** x2) ;
(c) b = x1 + x2 != 3 * x1 ; (d) b = (x3 – 2 * x2 > 0) || ((x3 = 400)* 2* x2) ;

TYPE B: SHORT ANSWER QUESTIONS

1. What are literals in Java ? How many types of literals are allowed in Java ?

2. What are data types? Make a list of primitive data types with size, initial values and range of values available in Java.

3. Explain various types of operators in Java. What is meant by operator precedence and associatively?

4. What do you mean by parsing? Name some parsing methods available in Java.

5. Write the following equations in JAVA. Also determine the data type of the expression

(i) $\left(\frac{(100(1-pq))}{(p+r)}\right) - \left(\frac{(p+r)/s}{(long)(s+p)}\right)$ (ii) $\left(\frac{2x+3y}{5w+6z} + \frac{8t}{5u}\right)^4$

If p ,x is an int, r , w is a float , q , y is a long and s, z is double , t is a short and u is a long double.

6. Given that :

```
int x , m = 2000; short y ;
byte b1 = -40 , b2 ; long n ;
```

Which of the following assignments statements will evaluate correctly? Also determine the data type of resultant variable.
(a) x = m * b1 (b) y = m * b1 (c) n = m * 3L (d) x = m * 3L

Assignment No. 5

FLOW OF CONTROL

TYPE A: VERY SHORT ANSWER QUESTION

1. What is null statement? What is its use?
2. What are the three programming constructs that governs statement flow?
3. In a nested-if, how does the default matching of dangling else take place?
4. What is the significance of a break statement in a switch statement? What will happen if a break is missing in a switch statement?
5. Write one limitation and one advantage of a switch statement?
6. What is the significance of default clause in a switch statement? Can two case labels in a switch have identical values?
7. Which elements are needed to control a loop?
8. Write a for loop that displays
   (1) the numbers from 51 to 60.
   (2) Even numbers from 1 to 100.
   (3) Numbers divisible by 5 from 1 to 100.
   (4) Numbers from 50 to 10.
9. What is variable? What is meant by a variable's scope?
10. What does continue statement in a loop constructs, if used?

TYPE B: SHORT ANSWER QUESTIONS

1. Compare the following
   (1) if and a ? : Operator.
   (2) while and do.. while loop
   (3) Entry controlled and Exit controlled loop.
   (4) Sentinel and Counter controlled loop.
2. Given the following code fragment:

```
if (a==0)
        System.out.print ln ("Zero");
if (a==1)
        System.out.print ln ("One");
if (a==2)
        System.out.print ln ("Two");
if (a==3)
        System.out.print ln ("Three");
```

   Write an alternative code (using if) that saves on number of comparisons.

3. Rewrite the following fragment using switch:

```
if (ch== 'E')
   eastern++ ;
if (ch== 'W')
   western++ ;
if (ch== 'N')
   northern++ ;
if (ch== 'S')
   southern++ ;
else
    unknown++ ;
```

4. Write the syntax and purpose of a switch statement.
5. When does an if statement prove more advantageous over a switch statement?

6. Why is it suggested to put a break statement after the last case statement in a switch even though it is not needed syntactically?

7. Rewrite the code given in question 3 using switch?

8. Reweite the following set of if-else statements in terms of switch-case statements :

```
(a) char code ;
    code = character.readChar();
    if (code == 'A')
       System.out.print ln ("Accountant");
    else if (code == 'C' ll code == 'G')
       System.out.print ln ("Grade IV");
    else if (code == 'F')
       System.out.print ln ("Financial Advisor");

(b) int inputnum, calcval;
    If (inputnum == 5)    {
       calcval = inputnum * 25 – 20 ;
       System.out.print ln (inputnum + calcval);
        }
  else if (inputnum ==10)    {
       calcval = inputnum * 25 – 20
       System.out.print ln (calcval – inputnum);
       }
```

9. How many times are the following loops executed?

```
(a) x = 5 ;  y = 50 ;
    while(x <= y)  {
    x = y/x ;
    . . . . . .
    }
```

```
(b) int m = 10, n= 7;
    while(m % n >= 0)   {
       . . . . . .
       m = m + 1;
       n = n + 2;
       . . . . . . . . . . . . }
```

10. Given the following code fragment :

```
i = 100 ;
while (i > 0)
        System.out.print ln( i--);
System.out.print ln("Thank you");
```

Rewrite the above code using a **do...while** loop.

11. Rewrite the following code using while loop

```
int sum = 0;
for (int i = 1 ; i <= 5 ; ++i) {
     sum = sum + c;
 }
```

12. Rewrite following while loop into a for loop

```
int stripes = 0;
while (stripes <= 13)    {
    if (stripes %2 == 2)
    { System.out.print ln("Colour code Red");
    }
    else {
```

```
            System.out.print ln("Colour code Blue");
        }
        System.out.print ln("New Stripe");
        stripes = stripes + 1;
    }
```

13. Rewrite following code using either while or do-while loop or both loops.

```
for(int i = 1 ; i < 4 ; ++i)  {
    for(int j = 3 ; j > 0 ; --j)  {
     System.out.print("### ..");
 }
 System.out.print ln();
}
```

14. Find the output of the following code fragments ?

(a)
```
int s = 14;
if(s<20)
        System.out.print("Under");
else
        System.out.print("Over");
        System.out.print ln("the limit");
```

(b)
```
int s = 14;
if(s<20)
   System.out.print("Under");
else {
   System.out.print("Over");
   System.out.print ln("the limit");
      }
```

(c)
```
int s = 94;
If (s < 20) {
    System.out.print("Under");
 }
else  {
    System.out.print("Over");
 }
  System.out.print ln("the limit");
```

15. What will be the output of the following code fragment when the value of ch is

(a) 'A' (b) 'B' (c) 'D' (d) 'F'

```
switch (ch)     {
    case 'A' : System.out.print ln ("Grade A");
    case 'B' : System.out.print ln ("Grade B");
    case 'C' : System.out.print ln ("Grade C");
                  break;
    case  'D' : System.out.print ln ("Grade D");
    default  :  System.out.print ln ("Grade F");
 }
```

16. Predict the input of following code fragment:

(a)
```
int i, j, n;
     n=0; i=1;
     do  {
     n++; i++;
     } while (i<=5);
```

(b)
```
int i=1, j=0, n=0;
     while (i<4)  {
      for(j=1; j<=I; j++)  {
            n+=1;
           }
          i=i+1;
       }
         System.out.print ln(n);
```

(b)
```
int i=3, n=0;
While (i<4) {
  n++; i--;
 }
System.out.print ln(n);
```

(d)
```
int j=1, s=0;
while(j<10)  {
      System.out.print(j+ "+");
      s=s+j;
      J=j+j%3;
 }
System.out.print ln("="+s);
```

17. Find out errors if any;

(a)
```
m=1;
n=0;
for(;m+n<19;++n)
System.out.print ln("Hello \n");
m=m+10;
```

(b)
```
while(ctr !=10) ; {
    ctr=1;
     sum=sum + a;
     ctr=ctr + 1;
   }
```

(c)
```
for(a=1, a>10; a=a+1)
   { . . . . . .
   }
```

18. Identify the possible error(s) in the following code fragment : Discuss the reason(s) of error(s) and correct the code.

```
:
f = 1;
for (int a= 40; (a); a--)
    f*=a;
 :
s=0;
for (int a = 1; a<40/a++)
   s += a;
```

19. Identify the possible error(s) in the following code fragment. Discuss the reason(s) of error(s) and correct the code.

```
while(i< j)
System.out.println(i * j);
 i++ ;
```

20. Identify the possible error(s) in the following code fragment. Discuss the reason(s) of error(s) and correct the code.

```
while (i<j);  {
   System.out.println (i * j );
    i++ ;
  }
```

Assignment No. 6

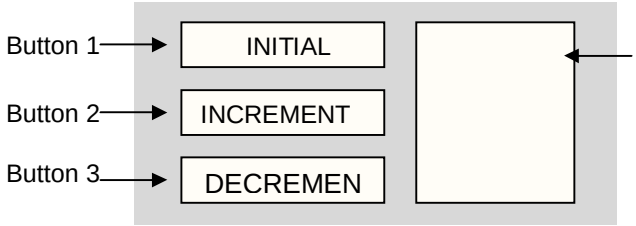
JAVA GUI PROGRAMMING USING SWING - I

TYPE A: VERY SHORT ANSWER QUESTION

1. What is GUI programming? How Event-Driven methodology facilitates GUI programming.
2. How is swing related to GUI programming?
3. What is container component? How it is different from component controls? Name some top level container controls.
4. What is an event? What is event handler?
5. What is default layout manager for a frame and for a panel?
6. What is the default name of action event handler of a button namely TestBtn?
7. Name some commonly used properties of (i) jFrame (ii) jPanel
8. What property would you set to assign access key to a button?
9. Which method can programmatically performs the click action of a push button?

TYPE B: SHORT ANSWER QUESTIONS

1. What are various categories of swing controls? Give some examples for each of them.
2. What is Event Handler/Listener? Discuss major types of Events in Swing controls.
3. Discuss briefly about different layout managers offered by swing API?
4. Suggest the layouts for the following scenarios.
   (i) A space hungry components is to be added at the centre of the frame.
   (ii) Components should appear in a row.
   (iii) Components should appear in rows & columns.
5. How does java handle events?
6. What are top level containers? What is their significance?
7. Explain some commonly used properties and methods of jButton control.
8. Write the steps/commands to do the following-
   (1) To set the iconImage as abc.png file for JFrame.
   (2) To set the cursor type as Hand cursor for a Jframe.
   (3) To set the title as “My First Java application” displayed at title bar of a window.
   (4) To set Line Border of jPanel.
   (5) To activate Close action on X button of the frame/window.
   (6) To set the HTML command to display PRINT as text of a jButton1 in Bold style.
   (7) To set the Access Key ALT+P for jButton1 having text PRINT.
   (8) To set the underline P character in PRINT text of jButton1.
   (9) To set the tool tip as “Click to get print” when mouse is place on PRINT button.
9. Write code for event handler of each of the button in the following application:



Button1 initializes the value of label to 0 (zero)
Button2 increments the value of label by 1(one)
Button3 decrements the value of label by 1(one)

Assignment No. 7

JAVA IDE PROGRAMMING USING SWING – II

TYPE A: VERY SHORT ANSWER QUESTION

1. What is a Label used for? Write some common properties of a Label?

2. What is the usage of icon property of a label?

3. You have assigned a foreground color and a background color through **foreground** and **background** properties of a label. But the label is not showing any background color. What could be the reason?

4. Write names methods to obtain and change text **of** a label?

5. Can you display text along with an image in a label? How?

6. Which import code line, you must write before you add images in labels?

7. Write names of Swing API classes, most common events, event-listener, and event handler methods for the following types of components:

(i) label (ii) dialog (iii) button (iv) password field

(v) text area (vi) check box (vii) radio button (viii) button group

8. Which property would you set for setting the password character as '$' ?

9. Which method returns the password entered in a password field ?

10. What is the difference between a check box and a radio button ?

11. What is mnemonic? What is it used for? How do you set it?

12. What is Focus? What are the focus related events?

13. If the minimumSize property of a frame is[0, 0] what would happen ?

14. How would you hide a frame namely Test_Frame ? Write code for it ?

TYPE B: SHORT ANSWER QUESTIONS

1. Identify the error in the following code that is written in action event handler of a button namely OKBtn.

```
double d = nameTF .getText( ) ;
String age = ageTF.getText( ) ;
double marks = Double.parseDouble (marksTF.getText( )) ;
```

2. What is Dialog? How are dialogs useful in an application?

3. What is the difference between a text field and a text area ?

4. What is the difference between a **getText( )** and **getPassword( )** methods ?

5. How can you display multiple lines of un-editable text in a label?

6. What are these methods used for ?

(i) isEditable( ) (ii) setEditable ( ) (iii) getEchoChar( )

7. What is the significance of lineWrap property of a text area ?

8. What major events and methods are associated with the following:

(i) Text Field (ii) Password Field (iii) Check Box

(iv) Radio Button (v) Scroll Bar (vi) Text Area

9. Write code for the event handler of a radio button so that when it is selected/unselected, its text changes to "I am selected" or "I am unselected".

10. What is the significance of a button group? How do you create a button group?

11. Write code for action event handler of a slider control so that its current value is displayed in a textfield (valTF).

Assignment No. 8

JAVA GUI PRGRAMMING USING SWING -III

TYPE A: VERY SHORT ANSWER QUESTION

1. Name the swing API classes that create (1) a list (2) a combo box.
2. Which list property do you set for specifying the contents of the list?
3. What do you understand by selection model of a list?
4. Which method would you use to determine which index has been selected in a list?
5. How would you determine whether 7th item in a list of a list namely MyList is selected or not?
6. You want to clear the selection in a list namely ChkList. How would you do this?
7. Name the event that gets fired when a user selects or unselects an item in a list.
8. Name the event handler of ListSelection Listener interface that handles the event in case of selection change in a list.
9. How would you ensure that in a list
   1) Only a single item gets selected.
   2) Only a single range of item gets selected.
   3) Multiple ranges of items get selected.
10. What is a list model? What is a default list model?
11. How can you add/remove elements to a jlist?
12. How can you add/remove elements to a ListModel?
13. A default list model namely cityDLM has been created from the list model of a list namely CityList. Which method would you use to add an element at the end of CityList?
14. Can you display graphics in a list?
15. Is a combo box by default editable? If not, then how you make it editable?
16. How would you obtain selected item from a combo box?
17. How would you determine whether a combo box is editable or not?
18. You want to remove all the items from a combo box. Which method would you use to accomplish this?
19. Which event gets fired whenever a selection is made in a combo box?
20. Which class lets you generate random integers?

TYPE B: SHORT ANSWER QUESTIONS

1. Compare and contrast a list box and a combo box.
2. Write code to obtain text of selected items from a list namely `List1`.
3. Write code to add item “Ajmer” to list CityList.
4. Write code to remove item at 3rd index in list CityList.
5. Write code to add items (“Rai” and “Shivpuri”) in list CityList. “Rai” should be added at 5th position and “Shivpuri” should be added at 9th index.
6. What method obtains the current selection of a combo box? Give a code- example.
7. Discuss about some commonly used properties of lists & combo boxes.
8. Write code to generate random number in the range 20…….50.

Assignment No. 9

INTRODUCTION TO METHODS

TYPE A : VERY SHORT ANSWER QUESTIONS

1. Method not returning any value has return type as ……..
2. A method can return _____ value(s).
3. The parameters appearing in method call statement are called ……. parameter.
4. The parameter appearing in method definition are called……. parameter.
5. The method call in which the data in actual parameter remains intact is known as…….
6. The method call in which the data in actual parameters get changed is known as …….
7. Fill in the blanks
   (a) If no any return data type is used, by default a method returns…….. type value.
   (b) The number and type of arguments of methods are known as_____.
   (c) The first line of methods definition that tells about the type of return value along with number and type of arguments is called _____.
   (d) The return statement is used to return a single value to calling method.
   (e) A method may more than one return statement but only one is executed.
8. What is the output of the following code?

```
Void func (Stings s)    {
   String s1 = s + "xyz"
   System.out.printnln("s1 –" + s1) ;
   System.out.printnln("s1 –" = s) ;
 }
```

TYPE B : SHORT ANSWER QUESTIONS

1. Define a method. What is method prototype and signature?
2. Discuss some advantages of using methods in a program.
3. What do you mean by actual and formal parameters of a method? Explain with an example.
4. Identify the errors in the method skeletons given below:

```
(1)  float average (a, b) { }
(2)  float mult (int x, y) { }
(3)  float doer (int, float = 3.14) { }
```

5. Given the method below write main( ) method that includes everything necessary to call this method.

```
int thrice (int x)
{ return a * 3 ; }
```

6. Differentiate between CALL by reference and CALL by value? Explain with code-example.
7. Write a method in Java to do the following (assume method name and parameter yourself)-
   (1) A method takes two integer numbers and returns sum of them.
   (2) A method that takes an integer number and returns 1 if it is even otherwise returns 0.
   (3) A method that takes two integer arguments and returns 0 if both the arguments are equal, return -1 if the first argument is smaller than the second and 1 if the second argument is smaller than the first?
   (4) A method takes an integer parameter and returns its factorial (e.g. if 5 is passed, it should return 5x4x3x2x1=120).
   (5) A method takes an integer parameter and returns true if number is prime otherwise returns false.

Assignment No. 10

INTRODUCTION TO CLASSES IN JAVA

TYPE A : VERY SHORT ANSWER QUESTIONS

1. Fill in the blanks

a. In Java, methods reside in _____.

b. A member method having the same name as that of its class is called _____ method.

c. A constructer method has _____ return type.

d. A private constructer allows object creation only inside _____ methods.

e. A _____ constructer takes no arguments.

f. A _____ constructer creates objects through values passed on it.

g. The keyword _____ refers to current object.

2. Define the Class and object. Which keyword is used to define a class in Java.

3. How an object method is called in other object?

4. State true or false :

(a) An instance method can access static data members of a class.

(b) A method declared as static cannot access non-static class members.

5. At what time is the constructer method automatically invoked?

6. What is the output of the following program ?

```
class Stat    {
    static int m = 0 ;
    static int n = 0 ;
    public static void StaticTest( )  {
       int m = 10 ;
       int x = 20 ;
       int n = 30 ;
       system.out.println('m + n =" + m + n) ;
       x= m + n ;
        System.out.println("x =" + x) ;  }
   }
```

7. What is role of new operator during object creation?

8. What is difference between primitive data type and user-defined data type?

TYPE B : SHORT ANSWER QUESTIONS

1. Which types of data and method members are used in class? Declare a class showing some data and method members.

2. How Instance variables (members) are different from Class (Static) members.

3. What is this keyword? What is its significance?

4. What do you men by object Instantiation? What steps are taken to create an object?

5. What is constructer? What it does? How many types of constructors are used in Java? Explain with giving suitable code-example.

6. Write code to declare a class student (along with its constructor) having two data members rollno and grade and two methods init( ) and display( ).

7. Write a code to declare an object st1 of student type (created in Question No.7).

8. Here is a skeleton definition of a class :

```
class sample  {
 int x ; char c ; float f ;
   :
}
```

Implement the constructor method.

9. How are parameterized constructors different from non-parameterized constructors? Explain with code-example.

10. How can objects be initialized with desired values at time of object creation?

11. When a compiler can automatically generate a constructor if it is not defined then why is it considered that writing constructors for a class is a good practice?

12. List some of the special properties of the constructor methods?

13. What is composite datatype? What is user defined data type?

14. Class can be used to define user-defined datatype. How?

15. Define a class for date with required data members like day, month, year and functions like constructors, printing a date, validating a date etc.

16. Using the above defined class date create two objects such as birthDate and joinDate.

17. Define a class named Book with the following details- (assume data type your self)

Data members- Title, Author, Subject, Edition and Price.

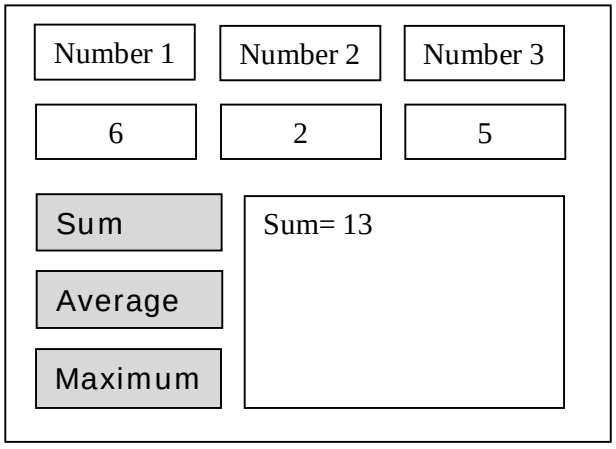
Method Members-

Display() to display the details of the book.

Parameterized constructor method to initialize data members with given value.

Non-parameterized constructor to initialize String data members with "" and numeric members with 0.

18. Consider the application having an interface like: (Assume control name your self)



Implement functionality by writing methods Calcsum( ), CalcAng( ) and CalcMax( ). Invoke these methods from buttons, event handlers.

Assignment No. 11

PROGRAMMING GUIDELINES

TYPE A : VERY SHORT ANSWER QUESTIONS

1. Define the following terms :

(i) Prologue, (iii) Pretty typing/printing,

(ii) Robustness (iv) Guard code

2. What is the process of translation of the algorithm into a program, called?

3. What is a 'source code'? What is an 'object code'?

4. What does the compilation do? Under which phase, the program is executed?

5. Name the three types of errors? Name two types of compilation errors?

TYPE B: SHORT ANSWER QUESTIONS

1. Why a program should have good presentation style? Discuss some Stylistic guidelines to write a good program.

2. What are the characteristics of a good program?

3. What do you mean by the clarity of expressions in a program? What is its significance?

4. What is meant by Application development? What major steps are followed to develop a program?

5. What are main error types? Which types are most dangerous and why?

6. "A properly designed and coded program, reduces the probability of bugs and hence the Maintenance cost". Do you agree with the statement? Why?

7. Differentiate between-

1. Syntax error & Semantics error 2. Syntax error & Logical error
2. Compile-time & Run-time error 4. Corrective & Adaptive Maintenance

8. What is program documentation? What is its importance?

9. What do mean by Program testing? What is differentiate between Unit testing & Integration testing.

10. What do you mean by Program Maintenance? Why it is considered very important? Discuss major types of Program Maintenance occurred during life cycle of a program.

Assignment No. 12

DBMS CONCEPTS

TYPE A : VERY SHORT ANSWER QUESTIONS

1. What is data redundancy? What are the problems associated with it?
2. How do data base management systems overcome the problems associated with data redundancy?
3. How do database management systems ensure data security and privacy?
4. What is data model? Name various data model?
5. Define the following terms:

   (I) DBMS (ii) View (iii) data security (iv) data integrity (v) Relation
   (vi) domain (vii) tuple (viii) attribute (ix) Degree (x) cardinality
6. What are views? How are they useful?
7. What do you mean by referential Integrity? How it is enforced in DBMS?
8. What is Key? Define the following keys-

   (I) Primary key (ii) Candidate key (iii) Alternate key (IV) Foreign key.

TYPE B : SHORT ANSWER QUESTIONS

1. What is Database Management System? Discuss its functions?
2. Why DBMS is mostly used in IT applications. Discuss its advantages.
3. What is Data Abstraction? Draw a diagram explaining various levels of data abstraction.
4. What is meant by "Data independence"? Explain difference between Logical and Physical data independence.
5. What do you mean by data model? Discuss various data model with their major characteristics.

Assignment No. 13

INTRODUCTION TO MYSQL

TYPE A : VERY SHORT ANSWER QUESTIONS

1. What is MySQL? By which company was MySQL developed?
2. Who is chief developer of MySQL? What is name of dolphin logo of MySQL?
3. What LAMP stands for? Write the use of its element applications.
4. What types of commands are used in the following categories?

   1. DDL 2. DML
   3. TCL 4. System control commands
5. What do you mean by Data dictionary? What it consist of?

TYPE B : SHORT ANSWER QUESTIONS

1. What is MySQL? Describe its features?
2. What is the use of SQL and MySQL?
3. Differentiate between DDL and DML commands?
4. What do you understand by client server architecture of MySQL?
5. What is SQL? Discuss the different categories of commands of SQL?

Assignment No. 14

SIMPLE QUERIES IN SQL

TYPE A: VERY SHORT ANSWER QUESTION

1. What is data type? Name some data types available in MySQL.
2. What are fixed length fields? What are variable length fields?
3. Compare Char and Varchar data types?
4. What is null value in MySQL database? Can you use nulls in arithmetic expressions?
5. Which keyword eliminates the redundant data from a query result?
6. Which keyword retains duplicate output rows in a query result?
7. How would you display system date as the result of a query?
8. How would you calculate 13*15 in SQL?
9. Which function is used to substitute Null values in a query result?
10. Which operator concatenates two strings in a query result?
11. What command is used for-
    1. To change/open a database 2. To view the table structure.
12. Which comparison operator is used for comparing?
    (i) Patterns **(ii)** character value **(iii)** null values **(iv)** ranges **(v)** list of values

TYPE B: SHORT ANSWER QUESTION

Table: Empl

empno	ename	job	mgr	hiredate	sal	comm	deptno
8369	SMITH	CLERK	8902	1990-12-18	800.00	NULL	20
8499	ANYA	SALESMAN	8698	1991-02-20	1600.00	300.00	30
8521	SETH	SALESMAN	8698	1991-02-22	1250.00	500.00	30
8566	MAHADEVAN	MANAGER	8839	1991-04-02	2985.00	NULL	20
8654	MOMIN	SALESMAN	8698	1991-09-28	1250.00	1400.00	30
8698	BINA	MANAGER	8839	1991-05-01	2850.00	NULL	30
8882	SHIVANSH	MANAGER	8839	1991-06-09	2450.00	NULL	10
8888	SCOTT	ANALYST	8566	1992-12-09	3000.00	NULL	20
8839	AMIR	PRESIDENT	NULL	1991-11-18	5000.00	NULL	10
8844	KULDEEP	SALESMAN	8698	1991-09-08	1500.00	0.00	30

1. Consider the Empl table and write SQL command to get the following.
   a. Write a query to display EName and Sal of employees whose salary are greater than or equal to 2200?
   b. Write a query to display details of employs who are not getting commission?
   c. Write a query to display employee name and salary of those employees who don't have their salary in range of 2500 to 4000?
   d. Write a query to display the name, job title and salary of employees who don't have manager?
   e. Write a query to display the name of employee whose name contains "A" as third alphabet?
   f. Write a query to display the name of employee whose name contains "T" as last alphabet?
   g. Write a query to display the name of employee whose name contains "M" as First and "L" as third alphabet?
   h. Write a query to display details of employs with the text "Not given", if commission is null?

2. Write SQL command for the following in the basis of given table (STUDENT)?

Student No.	Class	Name	Game	Grade 1	SUPW	Grade 2
10	7	Sameer	Cricket	B	Photography	A
11	8	Sujit	Tennis	A	Gardening	C
12	7	Kamal	Swimming	B	Photography	B
13	7	Veena	Tennis	C	Cooking	A

(i) Display the names of the student who are getting a grade "C" in either games or SUPW.
(ii) Display the different games offered in the school.
(iii) Display the SUPW taken up by the student whose names starts with "A"

3. Write SQL command for the following on the basis of given table sports.

Student No.	Class	Name	Game 1	Grade 1	Game 2	Grade 2
10	7	Sameer	Cricket	B	Swimming	A
11	8	Sujit	Tennis	A	Skating	C
12	7	Kamal	Swimming	B	Football	B
13	7	Veena	Tennis	C	Tennis	A
14	8	Kamal	Cricket	A	Tennis	B

(i) Display the name of the students who have grade C In either game 1 or game 2 or both.
(ii) Display the name of the students who have same grade for both game 1 and game 2.
(iii) Display the games taken up by the student whose name starts with "A"

4. Write SQL command for the following in the basis of given table (Club)?

COACH_ID	COACH	AGE	SPORTS	Dsteofapp	PAY	SEX
1	KUKREJ	35	KARATE	27/3/1996	1000	M
2	RAVINA	34	KARATE	20/01/1998	1200	F
3	KARAN	34	SQUASH	19/02/1998	2000	M
4	TARUN	33	SWIMMIN	01/01/1998	1500	M
5	ZUBIN	36	SWIMMIN	12/01/1998	750	M

a. To show all information about the swimming coaches in the club.
b. To list names of all coaches with their date of appointment in descending order.
c. To display report, showing coachmen pay, age and bonus (15% of pay).

5. Write SQL command for the following in the basis of given table (Student)?

No	Name	Stipend	Stream	Avg	Grad	Clas
1	Karan	400	Medical	78.5	B	12B
2	Diwakar	450	Commerce	89.2	A	11C
3	Divyu	300	Commerce	68.6	C	12C
4	Arun	350	Humanities	73.1	B	12C
5	Sabeena	500	Non	90.6	A	11A

a. Select all the Non medical stream students from this table.
b. List names of those students who are in class 12 stored in stipend.
c. List all student stored by avg marks in descending order.
d. Display a report, listing name, stipend, stream, and amount of stipend received in a year assuming that stipend is paid every month.

6. Write SQL commands for the following on the basis of given table.

Table: LIBRARY

No.	Title	Author	Type	Pub	Qty	Price
1	Data Structure	Lipschu	DS	McGraw	4	217
2	Computer studies	French	FND	Galgotia	2	75
3	Advanced Pascal	Schildt	PRO	McGraw	4	350
4	Dbase dummies	Palmer	DBM	PustakM	5	130
5	Mastering C++	Gurewi	PRO	BPB	3	295

a. Select all the PROG type published by BPB from Library.

b. Display a list of all books with Price more than 130 and stored by Qty.

c. Display all the books stored by Price in ascending order.

7. Write SQL commands for the following on the basis of given table MOV.

No	Title	Type	Ratin	Stars	Qty	Price
1	Gone with the wind	Drama	G	Gable	4	39.95
2	Friday the 13th	Horror	R	Jason	2	69.95
3	Top sun	Drama	PG	Cruise	7	49.95
4	Splash	Comed	PG13	Hanks	3	29.95
5	Independence Day	Drama	R	Turner	3	19.95
6	Risky business	Comed	R	Cruise	2	44.95

a. Display a list of all movies with Price over 20 and sorted by Price.

b. Display all the movies sorted by QTY in descending order.

c. Display a report listing a movie number, current value and replacement value for each movie in the above table. Calculate the replacement value for all movies as QTY *Price* 1.15.

8. Write SQL commands for the following on the basis of given table relation Teacher.

No.	NAME	Age	Department	Dateofjoin	Salary	Sex
1	Jugal	33	Computer	10/01//97	12000	M
2	Sharmila	31	History	23/03/98	20000	F
3	Sandeep	32	Maths	12/12/96	30000	M
4	Sanggeta	35	History	01/07/99	40000	F
5	Rakesh	42	Maths	05/09/97	25000	M
6	Shaym	50	History	27/06/98	30000	M
7	Shiv Om	44	Computer	25/02/97	21000	M
8	Shalakha	33	Math	31/07/97	20000	F

a. To show all information about the teacher of history department.

b. To list the names of female teachers who are in Hindi department.

c. To list names of all teachers with their date of joining in ascending order.

9. Write the Syntax of Select command and describe various options/ keywords used, with example.

10. What do you mean by Operator Precedence? Make a ordered list of operators from highest precedence to lowest.

Assignment No. 15

MySQL FUNCTIONS

TYPE A: VERY SHORT ANSWER QUESTION

1. Define a function. Why they are useful?
2. Differentiate between single row and multiple row functions?
3. What will be the output of following command?
   a. mysql>SELECT CONCAT(CONCAT ('Inform', 'atics'),'Practices');
   b. mysql> SELECT LCASE ('INFORMATICS PRACTICES CLASS !!TH');
   c. mysql> SELECT UCASE ('Computer studies');
   d. mysql> SELECT CONCAT (LOWER ('class'), UPPER ('xii'));
4. Write commands to display the system date.
5. Write a command to display the name of current month.
6. Write SQL statement to display
   Today, the date is <current date>
7. Write command to print the day of the week of your birthday in the year 1999.
8. What is the difference between SYSDATE() and NOW() function?
9. Consider two fields B_date, which stores the birth date and J_date, which stores the joining date of an employee. Write commands to find out and display the approximate age of an employee as on joining date.
10. Consider a field B_date, which stores the birth date of student. Write commands to find out and display the approximate age of student as on today.

TYPE B: SHORT ANSWER QUESTION

1. Given the following table:

TABLE: CLUB

COACH_ID	COACHNAME	AGE	SPORTS	DATOFAPP	PAY	SEX
1	KUKREJA	35	KARATE	1996-03-27	1000	M
2	RAVINA	34	KARATE	1998-01-20	1200	F
3	KARAN	34	SQUASH	1998-02-19	2000	M
4	TARUN	33	BASKETBALL	1998-01-01	1500	M
5	ZUBIN	36	SWIMMING	1998-01-12	750	M
6	KETAKI	36	SWIMMING	1998-02-24	800	F
7	ANKITA	36	SQUASH	1998-02-20	2200	F
8	ZAREEN	37	KARATE	1998-02-22	1100	F
9	KUSH	41	SWIMMING	1998-01-13	900	M
10	SHAILYA	37	BASKETBALL	1998-02-19	1700	M

   Give the output of following SQL statements:
   (i) SELECT LCASE (SPORTS) FROM Club;
   (ii) SELECT MOD (Age, 5) FROM CLUB WHERE Sex ='F';
   (iii) SELECT POWER (3, 2) FROM CLUB WHERE Sports='KARATE';
   (iv) SELECT SubStr (CoachName, 1, 2) FROM CLUB WHERE Datofapp>'1998-01-31';
2. Write a query to show the current date and time.
3. Write a query against the ADDRESS table to show the names (first name, last name) and phones of all persons concatenated in the following form:
   TinaSeth23456789
   MoradK.22211890
4. Write a query for EMPL table to show the names of employees concatenated with their jobtypes.
5. Given the following table-

TABLE: STUDENT

No	Name	Stipend	Stream	AvgMark	Grade	Class
1	Karan	400	Medical	78.5	B	12B
2	Divakar	450	Commerce	89.2	A	11C
3	Divya	300	Commerce	68.6	C	12C
4	Arun	350	Humanities	73.1	B	12C
5	Sabina	500	Nonmedical	90.6	A	11A
6	John	400	Medical	75.4	B	12B
7	Robert	250	Humanities	64.4	C	11A
8	Rubina	450	Nonmedical	88.5	A	12A
9	Vikas	500	Nonmedical	92.0	A	12A
10	Mohan	300	Commerce	67.5	C	12C

Give the output of the following SQL statement:

(i) SELECT TRUNCATE(AvgMark) FROM Student1 WHERE AvgMark<75;
(ii) SELECT ROUND(AvgMark) FROM Student1 WHERE Grade='B';
(iii) SELECT CONCAT(Name, Stream) FROM Student1 WHERE Class='12A';
(iv) SELECT RIGHT (Stream,2) FROM Student1

6. Given the following table:

TABLE: LIBRARY

No.	Title	Author	Type	Pub	Qty	Price
1.	Data Structure	Lipschutz	DS	McGraw	4	217
2.	Computer Studies	French	FND	Galgotia	2	75
3.	Advanced Pascal	Schildt	PROG	McGraw	4	350
4.	Dbase dummies	Palmer	DBMS	PustakM	5	130
5.	Mastering C++	Gurewich	PROG	BPB	3	295
6.	Guide Network	Freed	NET	BPB	3	200
7.	Mastering FoxPro	Seigel	DBMS	BPB	2	135
8.	DOS Guide	Norton	OS	PHI	3	175

Give the output of following SQL commands on the basis of table library.

(i) SELECT UPPER (Title) FROM Library WHERE Price<150;
(ii) SELECT CONCAT (Author, Type) FROM Library WHERE Qty <3;
(iii) SELECT MOD (Qty, 4) FROM Library;

7. Consider the structure of ADDRESS table-

TABLE: ADDRESS

Column Name	Data Type	Column Name	Data Type
LastName	VARCHAR(25)	State	CHAR(2)
FirstName	VARCHAR(25)	Zip	NUMBER
Street	VARCHAR(20)	Phone	VARCHAR(12)
City	VARCHAR(25)	Ext	VARCHAR(5)

8. Write a query against the ADDRESS table to select a list of names and phone numbers. The output should match these requirements:
   (i) The name column should contain both the first and last names with a blank space between them.
   (ii) The second column will contain the phone number in (999)999-9999 format.
   (iii) Order the query by last name then first name.
9. Make summery tables with category of MySQL commands, syntax and use.
10. Explain the following functions with syntax, purpose and example.

1) CONCAT()	2) SUBSTR()	3) TRIM()	4) INSTR()
5) MID()	6) MOD()	7) POW()	8) ROUND()
9) CURDATE()	10) NOW()	11) SYSDATE()	12) DAYNAME()

Assignment No. 16

Table Creation & DML Commands

TYPE A: VERY SHORT ANSWER QUESTION

1. Which command is used for creating tables?
2. Which is a constraint? Name some constraint that you can apply to enhance database integrity.
3. What is the role of UNIQUE constraint? How is PRIMARY KEY constraint different from UNIQUE constraint?
4. What is Primary key? What is PRIMARY KEY constraint?
5. What is NOT NULL constraint? What are DEFAULT constraints?
6. When column's value is skipped in an INSERT command, which value is inserted in the database?
7. Can a column defined with NOTNULL constraint, be skipped in an INSERT command?
8. How would you view the structure of table Dept?
9. Table NewEmpl has same structure as that EMPL. Write a query to insert data from EMPL table into NewEmpl, where salary is more than Rs 4000 and commission is greater than 500.
10. What is the error in following statement?

    UPDATE EMPL;

TYPE B: SHORT ANSWER QUESTION

1. How constraints ensure the validity of data? Explain various types of constraints with example.
2. What is FOREIGN key? How do you define foreign key in your table?
3. How is FOREIGN KEY different from PRIMARY KEY command?
4. What are table constraints? What are column constraints? How are these two different?
5. What is default value? How do you define it? What is default value for a column for which no value is defined?
6. Differentiate between:
   (i) DROP TABLE & DROP DATADABASE
   (ii) DROP TABLE & DROP clause of ALTER TABLE.
7. Consider the following table and answer the following-

Table: Empl

empno	ename	job	mgr	hiredate	sal	comm	deptno
8369	SMITH	CLERK	8902	1990-12-18	800.00	NULL	20
8499	Anya	SALESMAN	8839	1991-02-20	1600.00	300.00	30
8521	SETH	SALESMAN	8839	1991-02-22	1250.00	500.00	30
8566	MAHADEVAN	MANAGER	8844	1991-04-02	2985.00	NULL	20
8888	SCOTT	ANALYST	8566	1992-12-09	3000.00	NULL	20
8839	AMIR	MANAGER	8844	1991-11-18	5000.00	NULL	10
8844	Gates	PRESIDENT	NULL	1991-11-18	5000.00	NULL	10
….	…….	……	…..	…….	…….	…..	….
….	…….	……	…..	…….	…….	…..	….

a) Update all Ename so that it contains the entire name in capital letters.

b) Increase the salary of employee by 10% in Empl table.

c) Give commission of Rs 500 to all employees who joined in year 1982 in Empl table

d) Modify table Empl, add another column called Grade of VARCHAR type size 1 into it.

e) In the added column Grade, assign grade as follows.

if sal is in range 700-1500 Grade is 1
If sal is in range 1500-2200 Grade is 2
If sal is in range 2200-3000 Grade is 3
if sal is in range 3000- Grade is 4

f) Display the details of employees who are working under the employee named AMIR.

g) Modify the definition of column Grade. Increase its size to 2.

h) Drop the table Empl.

8. Given the following tables:

Orders (Ordno, Ord_date, ProdNo, Qty)
Product (Prodno,Descp,Price)
Payment (OrdNo,Pment)

Write query statements for following transaction.

a) Increase price of all products by 10 %.

b) List the details of all orders. Whose payment is pending.

c) Decrease price by 10% for all those products for which order were placed 10 months before.

d) Write a query to delete all those records from table Orders whose payment has been made.

9. Create the table Employee based on the following table instance Chart.

Column name	ID	FirstName	LastName	DeptID
Data Type	NUMBER	VARCHAR	VARCHAR	NUMBER
Length	8	25	25	8

10. Write the command for the following-

a) Create table CUSTOMER as per following Table structure.

Column Name	CustID	CustName	CustAdd1	CustAdd2	CustPhone
Data Type	NUMBER	VARCHAR	VARCHAR	VARCHAR	VARCHAR
Length	7	30	20	30	10

b) Add one column Email of data type VARCHAR and size 30 to table Customer.

c) Add one more column CustIncomeGroup of data type VARCHAR(10).

d) Insert few records with relevant information in the Customer table.

e) Drop the column CustomerIncomeGroup from table Customer.

11. Create table Employee as per following Table structure.

Col. name	EmpID	EmpName	EmpAdd	EmpPhone	EmpSal	DeptID
Key type	Primary					Foreign
Nulls /Unique		NOT NULL				
Fk Table						Department
Fk Column						Dept_ID
Datatype	NUMBER	VARCHAR	VARCHAR	VARCHAR	NUMBER	VARCHAR
Length	6	20	30	10	9,2	2

Assignment No. 17

IT APPLICATIONS

TYPE A: VERY SHORT ANSWER QUESTION

1. Define the following-
   a) E-Governance b) E-Business c) E-Learning
2. List any five web portal with their purposes involved in E-Governance.
3. List any five web portal with their purposes involved in E-Commerce or Business.
4. List any five web portal with their purposes involved in E-Learning
5. What is meant by E-governance Model? How E-Government interacts Citizen, Business and Government.

TYPE B: SHORT ANSWER QUESTION

1. How has society benefitted from e-governance? What are the limitations of e-governance?
2. How has society benefitted for e-business? Discuss its limitations?
3. How has society benefitted for e-learning? Discuss its limitations?
4. Why do you think e-learning courses have high dropout rate?
5. Discuss some popular e-business types incorporated through e-business systems.

P R A C T I C A L – S C H E D U L E

Class XI- Informatics Practices

[Month-Chapter-Experiment Plan]

Month	Chapter No	Name of Chapter	Experiment No.
June	1	Hardware Concepts	-
July	2	Software Concepts	1-4
	3	Getting Started with Programming using IDE	1-3
August	4	Programming fundamentals	4-6
	5	Control Structures	7-19
September	6	Java GUI Programming using Swing controls-I	20-22
	7	Java GUI Programming using Swing controls-II	23-25
	8	Java GUI Programming using Swing controls-III	26-29
October	9	Introduction to Methods	30
	10	Introduction to Classes	-
	11	Programming Guidelines	-
November	REVISION		-
	12	Database Management System	-
December	13	Introduction to MySQL	-
	14	Simple Queries using SQL statements	1
January	15	Functions in MySQL	2
	16	Manipulating Data of a table	3
February	17	IT Applications	1
March	REVISION		**Total (38)**

PRACTICAL – ASSIGNMENTS

Unit 1: Introduction to Computer Systems

Experiment No.1:

Objective: To get familiar students with Word Processing Application like MS Word or Write of Open Office. The student must aware to Various tools and features of Word Processing application.

Task: Open MS Word and perform the following actions. Write the steps in your Practical notebook also.

1. Type at least one page with 6 paragraphs (each paragraph with 5-6 lines) from your text-book/News paper/ Magazine or an Essay on your favorite topic.

2. Type a Title "My First Page "at the top of the page and apply the following settings.
Font- Arial, Font Size 14, Bold and Underlined with Center aligned.

3. Open Page Set-up dialog and set Left & Right margin to 0.8' and Top & Bottom as 1' along with paper size A4.

4. Set the First paragraph in double spaced and justified.

5. Insert a picture from clip Art library after First paragraph and align it center.

6. Set paragraph margin as 0.5 for second paragraph and make it Right aligned.

7. Select 3rd and 4th paragraph and apply Numbered Bullet and set text colour as Red.

8. Open Header & Footer Dialog and set your School name as a Header, and your name with class as a Footer.

9. Save the document as <Exercise1-yourname> in the My Document folder.

10 Take a Printout of this page and close the MS Word program. Attach the printed page in your Practical Note book.

Experiment No. 2:

Objective: To get familiar students with the presentation of Tabular data using Table tool of Word Processing Application like MS Word or Open Office.

Task: Open MS Word and perform the following actions. Write the steps in your Practical notebook also.

1. Insert a table (6 rows and 5 columns) with Sr., Name, DOB, House, Class columns. Fill the details of your five friends.

2. Type a Title "My Table "at the top of the page and apply the following settings.
Font- Arial, Font Size 14, Bold and Underlined with Center aligned.

3. Open Page Set-up dialog and set Left , Right, Top & Bottom margin as 1' .

4. Select the table and make it Center aligned.

5. Selected First row of the table and make it Bold.

6. Select the table and set Paragraph spacing as 6 pt as Before and After space.

7. Type 5-6 lines of your favorite poem after Table.

8. Select the Poem lines and make it Bold and Italic with Center aligned.

9. Save the document as <Exercise2-yourname> in the My Document folder.

10 Take a Printout of this page and close the MS Word program. Attach the printed page in your Practical Note book.

Experiment No. 3:

Objective: To get familiar students with Spreadsheet Application like MS Excel or Calc of Open Office. The student must aware to Various tools and features of Spreadsheet application.

Task: Open MS Excel and perform the following actions. Write the steps in your Practical notebook also.

1. Design the following Pay Statement Sheet.

Sr.	Name	Basic-pay	Grade-pay	DA	TA	HRA	Gross Total	GPF/ CPF	Net-Pay
1	Amit Kumar	9300	4600						
2	Santosh Kr.	9300	4800						
..	.....	....	....						
	Total	----	---	--	--	--	--	--	--

Type the Name and Basic-Pay & Grade Pay information of 6 employees.

2. Calculate the following using formula for the first row.
DA as 40% of Basic +Grade Pay, TA, HRA and GPF/CPF as 10% of Basic + Grade Pay. Gross Gross Total as Basic Pay +Grade Pay + DA+TA+HRA.
Net Pay as Gross Pay- GPF/CPF.

3. Calculate the Total rows using Sum() formula.

4. Make the Header Row Bold and center aligned.

5. Insert a row before the Header Row and Type PAY-DETAILS in center aligned along with Column A to J.

6. Select Gross Total column and set text color as Red.

7. Select all the columns and set Font Arial and 11 as Font size.

8. Select the Total row and give space before, and make it Bold and Italic.

9. Save the document as <Exercise3-yourname> in the My Document folder.

10 Take a Printout of this page and close the MS Excel. Attach the printed sheet in your Practical Note book.

Experiment No. 4:

Objective: To get familiar students with Spreadsheet Application's advanced feature like Graph/Chart and other Presentation styles of tabular data.

Task: Open MS Excel and perform the following actions. Write the steps in your Practical notebook also.

1. Design the following Result – Analysis Sheet of your school.

Year	2006	2007	2008	2009	2010
IX	..	..	..	..	..
X	..	..	..	..	..
XI	..	..	..	..	..
XII	..	..	..	..	..

Fill the sheet with your schools's details.

2. Insert a column chart on the same sheet to exhibit the result analysis in pictorial form.

3. Make the Header Row Bold and center aligned.

4. Insert a row before the Header Row and Type RESULT-ANALYSIS in center aligned along with Column A to F.

5. Save the document as <Exercise4-yourname> in the My Document folder.

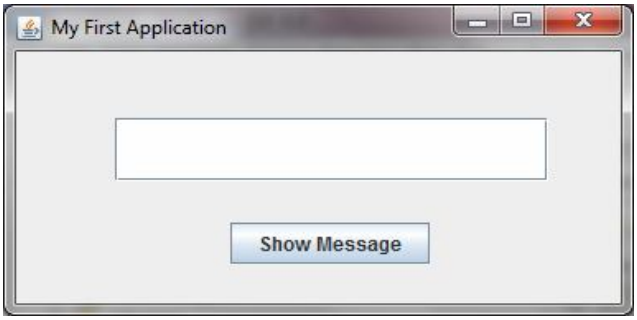
6. Take a Printout of this page along with Graph and close the MS Excel. Attach the printed sheet in your Practical Note book.

Unit 2: JAVA Programming

Experiment No.1:

Objective: To get familiar students with NetBeans IDE and developing a simple application using some commonly used swing controls.

Task: Develop an application to display a Welcome message when 'Show Message' button is pressed.



Experiment No. 2:

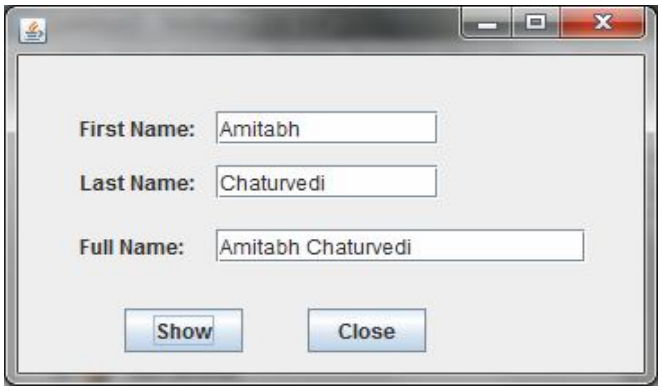
Objective: Understanding of Form design using commonly used controls with setting Fonts, Color and appearance to deliver a better 'Look and Feel' interface. Students may get familiar with Layout Manager of NetBeans.

Task: Develop a Data entry form for School Admission System as per design given below, using proper font size, color etc. Also add functionality to clear all the text boxes when Clear button is pressed.

Experiment No. 3:

Objective: Understanding of event and methods with some action. Getting input of Text field and setting text on other text field. Closing application with the help of System.exit(0) command.

Task: Develop an application to display full name for given first name and last name when Show button is pressed.



Experiment No. 4:

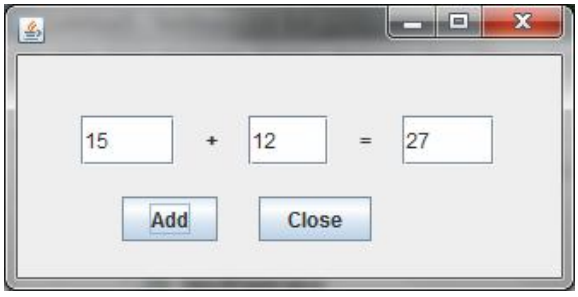
Objective: Explore the use of Panel, Buttons and Text fields. Setting text display with Alignment property of text field.

Task: Develop a Pager application to simulate the functionality of Pager. The numbers when pressed are displayed right aligned on the display panel and a Dialing message appears when 'Dial' button is pressed. Display panel gets clear when Clear button is clicked.

Experiment No. 5:

Objective: Understanding and use of variables in the application.

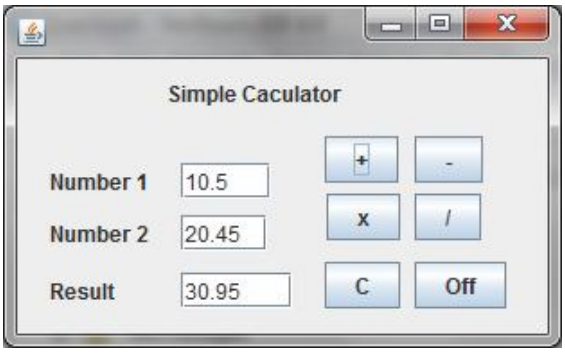
Task: Develop a simple Adder application as per given screen snapshot, to add two given numbers.



Experiment No. 6:

Objective: Understanding and use of variables of float and other data types.

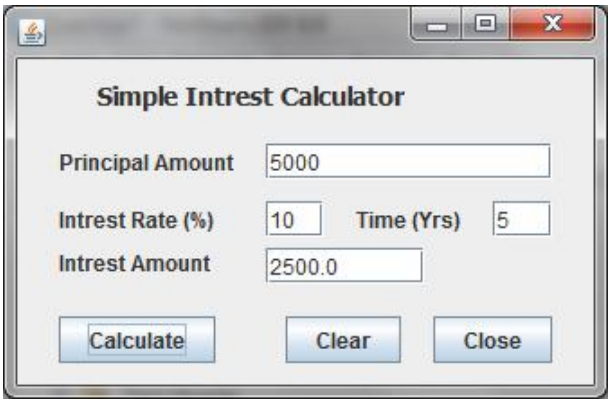
Task: Develop a simple Calculator application as per given screen snapshot, to implement +, -, x and / operations. The text boxes get cleared when 'C' button is clicked.



Experiment No. 7:

Objective: Understanding the real life application requirement and developing a solution.

Task: Develop a Simple Interest Calculator application as per given screen snapshot, to calculate simple interest for given Amount, Rate of Interest and Time using (I=P*R*T/100) formula.



Experiment No. 8:

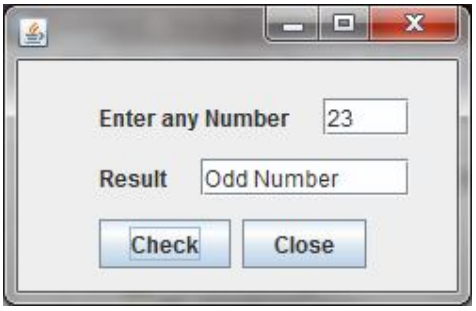
Objective: Understanding the use of simple If.. Condition with relation operator in the application.

Task: Develop an application to display a relevant message based on the given age. If given age is greater or equal to 18 then 'Eligible to Vote' message appears otherwise 'Not eligible' is displayed when user presses Check button.

Experiment No. 9:

Objective: Understanding the use of Condition statement with relation and Arithmetical operator with variables in the application.

Task: Develop an application to check whether a given number is Even or Odd.



Experiment No. 10:

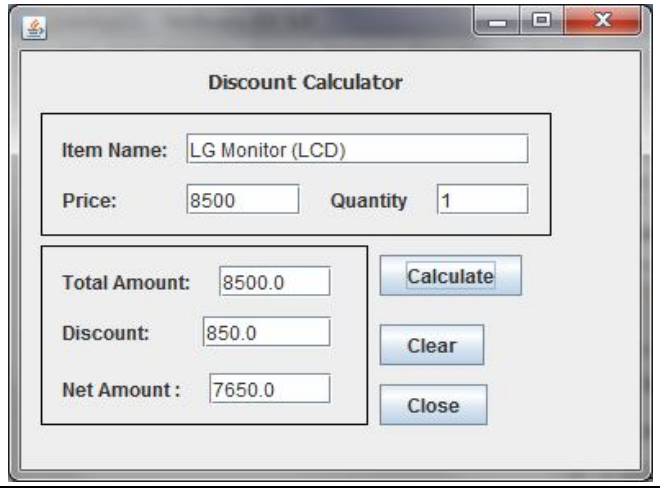
Objective: Understanding the use of If..else ladder statement with relation operator and variables in the application.

Task: Develop an application to check whether a given year is Leap year or not. Leap year are those year which are divisible by 100 and 400 or divisible by 4 only.

Experiment No. 11:

Objective: Understanding the Real life application using conditional statements and calculations.

Task: Develop a Discount Calculator application for a Computer shop. The discount is given as per the following rules.
If total amount >= 10000 then discount is 15%. If total amount >= 5000 and <10000 then discount is 10%. If total amount < 5000 then discount is 5%.
Total amount, discount and Net amount is calculated when Calculate button is pressed. All the text Boxes gets cleared when Clear button is pressed.

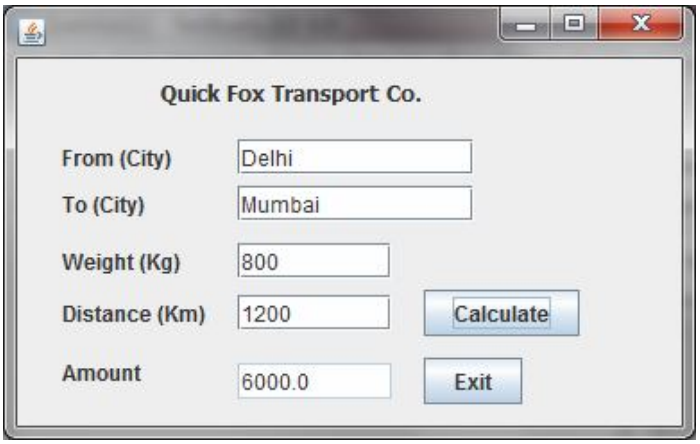


Experiment No. 12:

Objective: Understanding and use of Nested conditions in the Real life applications.

Task: A Quick Fox Transport Co. wants to develop an application for calculating amount based on distance and weight of goods.
The charges (Amount) to be calculated as per rates given below.

Distance	Weight	Charges per Km.
>=500 Km	>=100 kg.	Rs. 5/-
	>=10 and <100 kg.	Rs. 6/-
	< 10 kg.	Rs. 7/-
<500 Km	>=100 Kg.	Rs.8/-
	<100 Kg.	Rs.5/-

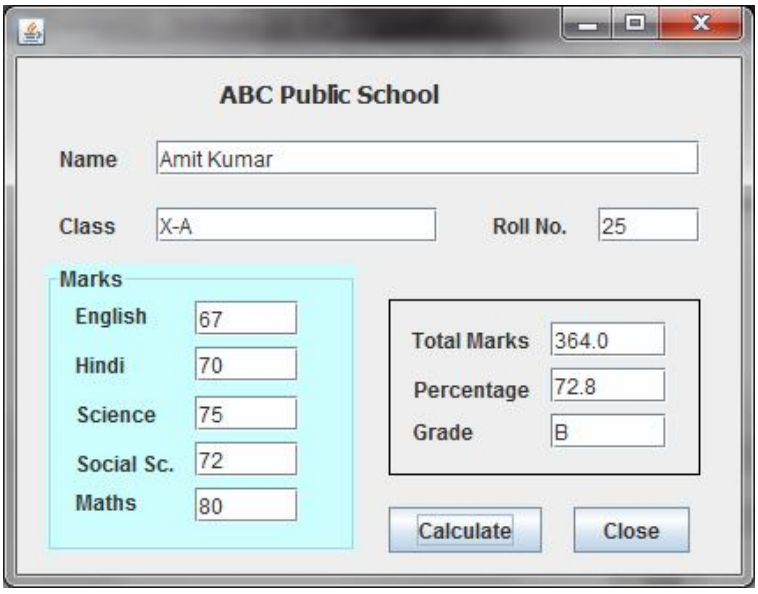


Experiment No. 13:

Objective: Understanding and use of Else-if ladder of conditions in Real life applications.
Use of variables in calculations and Panels in good interface design.

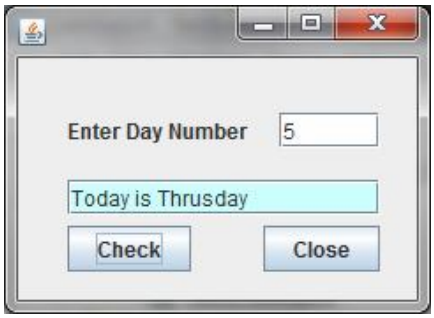
Task: ABC Public School uses an application for calculating Total marks, percentage and grades of students for given marks in five subjects with maximum marks of 100. The Screen shot and Grade calculation rule is given below.

Total Marks	Grade
>=90	A+
80-89	A
70-79	B
60-69	C
50-59	D
40-49	E
<40	Detained



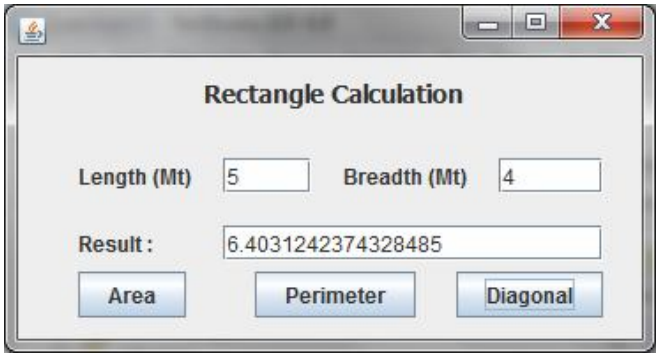
Experiment No. 14:

Objective: Understanding and use of Switch-case statements.
Task: Develop an application which determines and display day for given Day number of a week. The screen shot is given below.



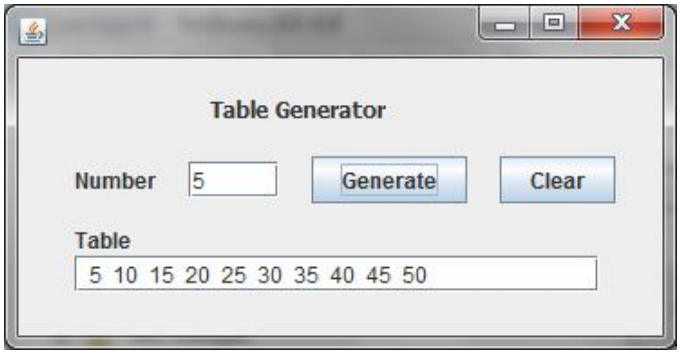
Experiment No. 15:

Objective: Understanding and use of Java's math methods in mathematical calculations.
Task: Develop an application which calculates Area, Perimeter and Diagonal for given length and breadth.



Experiment No. 16:

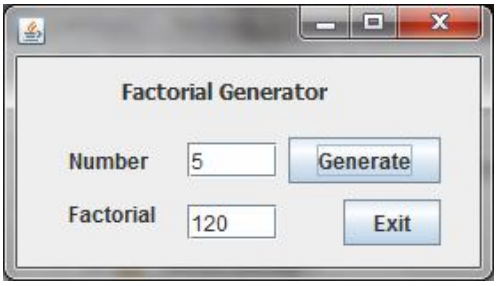
Objective: Understanding and use of Looping statement like for.. loop.
Task: Develop a Table Generator Application which calculates and prints a table of given number.



Experiment No. 17:

Objective: Understanding and use of Looping statement.

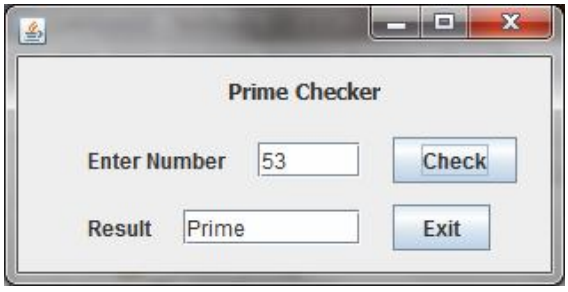
Task: Develop a Factorial Generator Application which calculates and prints a factorial of given number. Factorial of a number is obtained by summing of multiplications from 1 to given number i.e. Factorial of 4 is 1x2x3x4 =24.



Experiment No. 18:

Objective: Understanding and developing a logic to solve a problem. Use of loops and breaking it prematurely.

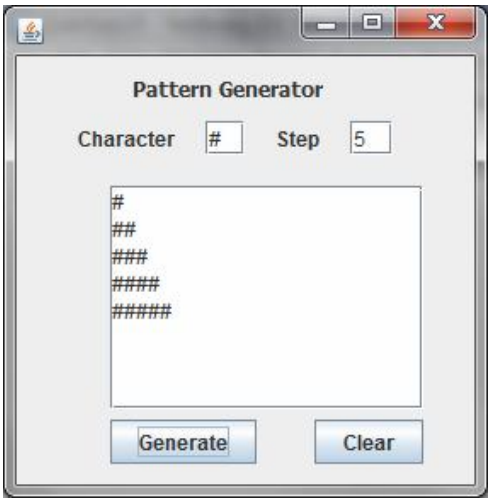
Task: Develop a Prime Checker Application which checks whether a given number is Prime or not. Prime numbers are those numbers which are divisible by one or itself only.



Experiment No. 19:

Objective: Understanding and use of Nested loops and Text Area control.

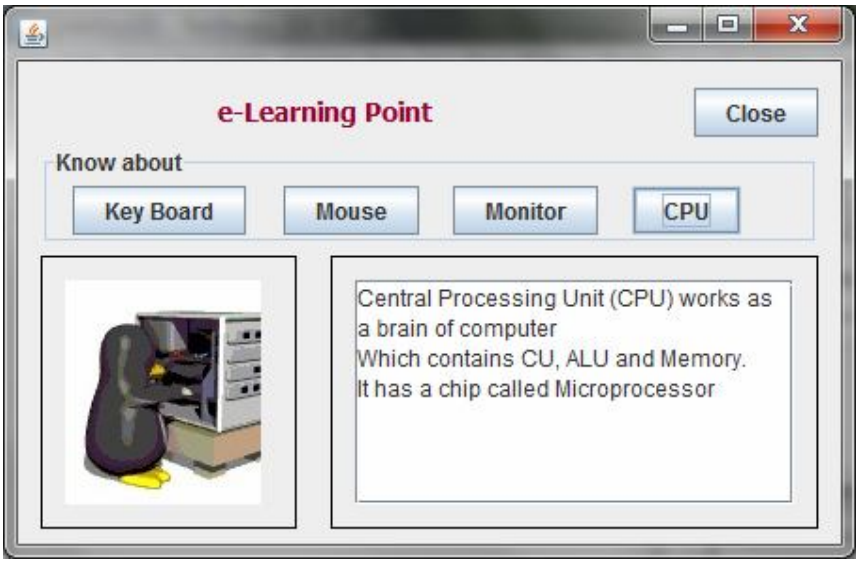
Task: Develop a Java application to print a Pattern for given character and steps, as per given screen shot.



Experiment No. 20:

Objective: Displaying images on a Label and Text Area control.

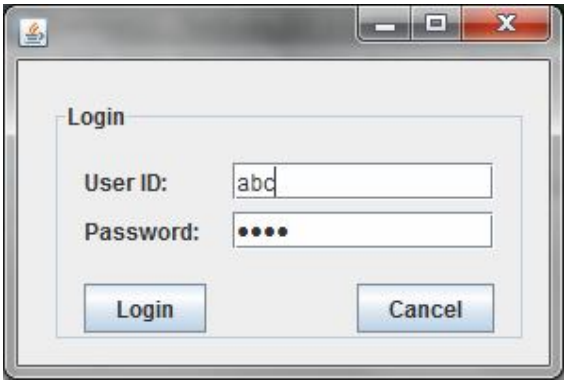
Task: Develop an e-Learning application with images and text information as per given screen shot.



Experiment No. 21:

Objective: Use of password field control and Built-in Message dialog using JOption pane object. Also demonstrates string comparison in Java.

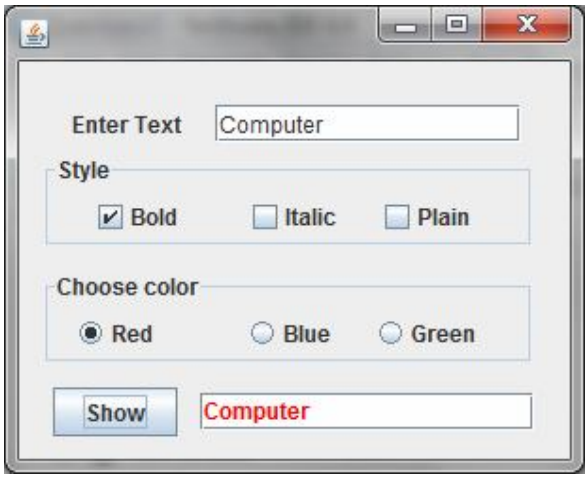
Task: Develop a Login screen as given below. A Message dialog with relevant message is appears as per given valid or invalid password.



Experiment No. 22:

Objective: Use of Check Box and Radio Button controls, with customizing the color and appearance of text in Text Boxes.

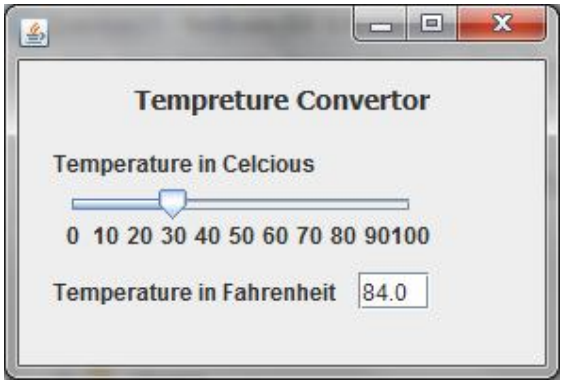
Task: Develop an application as per given below to customize the appearance of given text in selected color and style.



Experiment No. 23:

Objective: Use of Slider or Scroll bar control to get user input and using it some calculation.

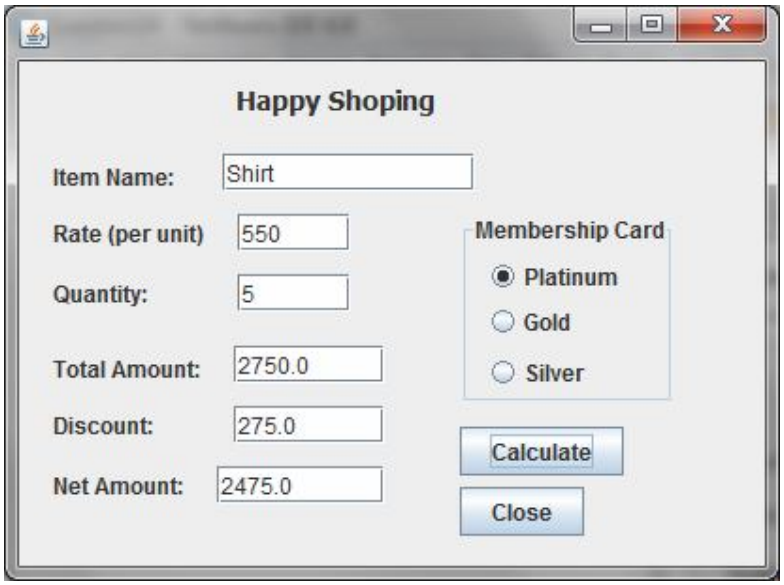
Task: Develop a Temperature Converter application which converts selected Celsius temperature on a scale and displays it equivalent Fahrenheit temperature.



Experiment No. 24:

Objective: Understanding and using the Radio Button in Real-life application to determine the selection of choice and calculations accordingly.

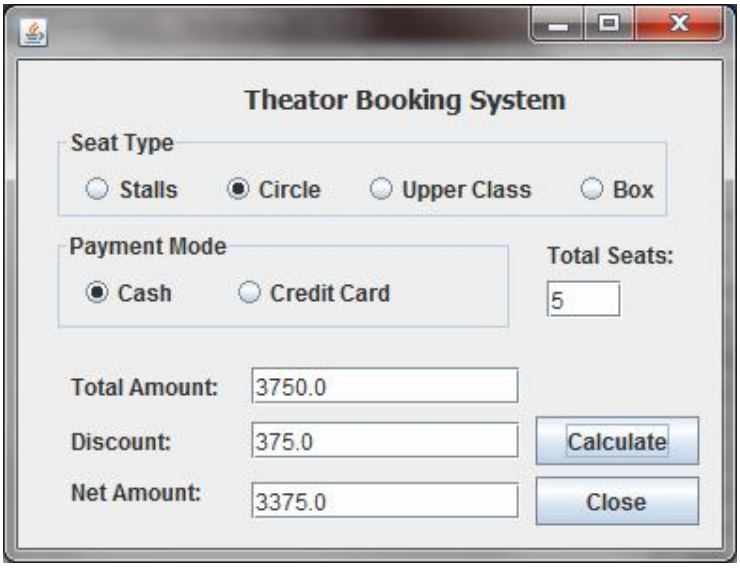
Task: Develop a Billing application for Happy Shoping- A retail chain involve in sales of Readymade garments. The happy Shoping offers discount to its members holding Platinum, Gold and Silver card.
The 10% discount is given to Platinum card, 8% to Gold Card and 5% to Silver Card holders on sales amount.



Experiment No. 25

Objective: Understanding and using the Radio Button in Real-life application to determine the selection of choices and calculations accordingly.

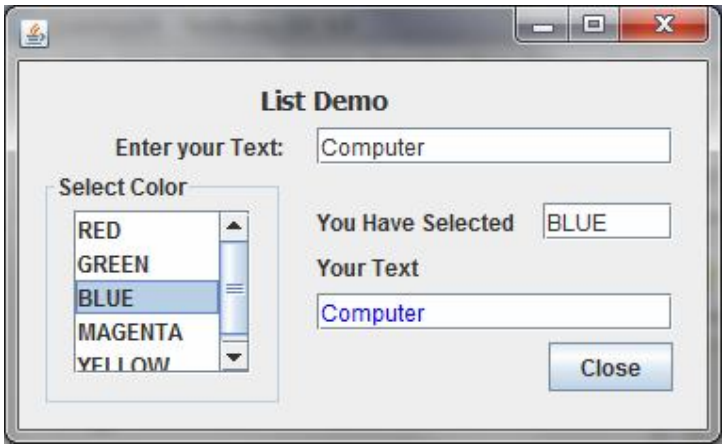
Task: The Entertainment Paradise- A theater in Delhi wants to develop a computerized Booking System. The proposed Interface is given below. The theater offers different types of seats. The Ticket rates are-
Stalls- Rs. 625/-, Circle- Rs.750/-, Upper Class- Rs.850/- and Box- Rs.1000/-. A discount is given 10% of total amount if tickets are purchased on Cash. In case of credit card holders 5% discount is given.



Experiment No. 26

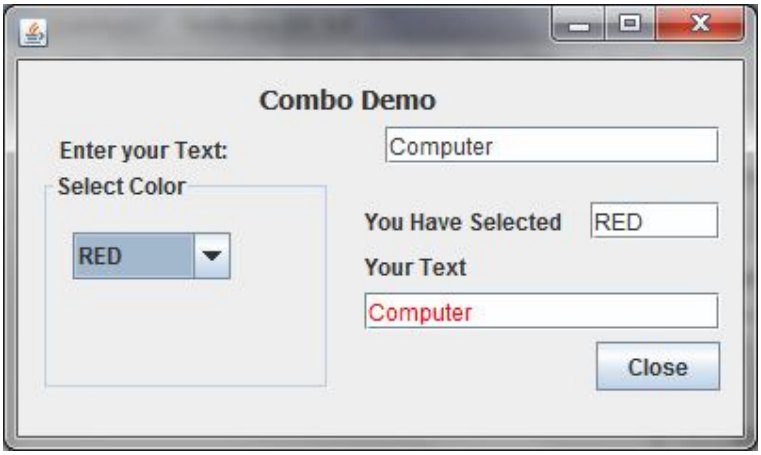
Objective: Demonstration of use of List control.

Task: Develop an application as per given screen shot to display the given text in selected color using List control.



Experiment No. 27

Objective: Demonstration of use of Combo control.
Task: Redesign the application developed in Experiment 26, using combo control.



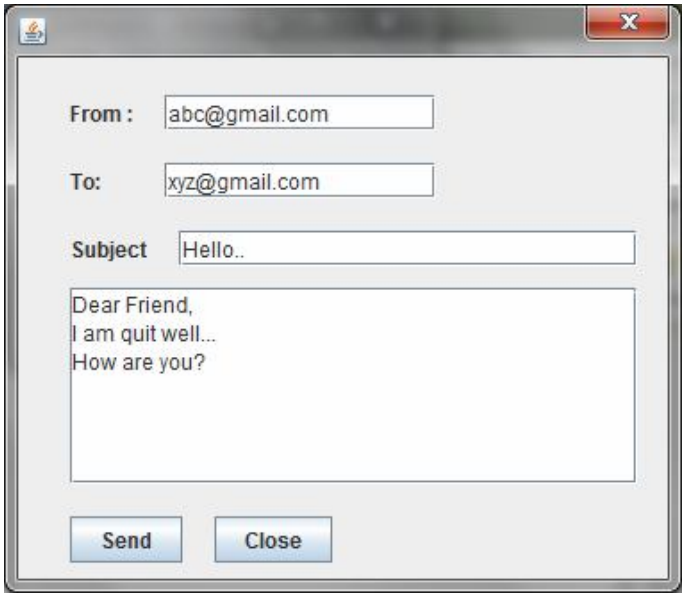
Experiment No. 28

Objective: Demonstration of use of List Dynamically through code.
Task: Develop an application as per given screen shot to Add , Remove the given members of list and display the selected item in a text field using List control.

Experiment No. 29

Objective: Developing Multi-Frame Application using JDialog Control.

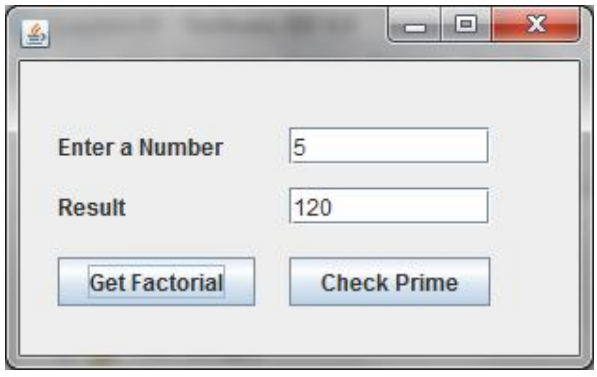
Task: Develop an e-Mail sending Application which facilitates the login and composing screen as given below. A Message box also displayed with proper message when invalid password is given by user and when mail is sent after pressing Send button.



Experiment No. 30

Objective: Understanding the use of User-defined methods in the application.

Task: Develop an application to compute the Factorial and Checking Prime for a given number, using custom methods. A method named factorial() and CheckPrime() along with suitable parameters are called when Get Factorial and Check Prime button is pressed respectively.



Unit 3: Relational Data Base Management Systems

Experiment No. 1

Objective: Understanding the use of DML command at MySQL plateform.

Task: Open MySQL and Login with your ID and password given by your Teacher. Write and Execute the SQL command for the following and also write the steps/commands in your Practical notebook.

1 Create a Database named MYORG.

2 Open the Database with USE command.

3 Create a table name Emp with following structure.

empno	ename	job	hiredate	sal	comm
Number	Varchar	Char(10)	Date	Number	Number

4 Insert the following Records-

empno	ename	job	hiredate	sal	comm
8369	SMITH	CLERK	1990-12-18	800.00	NULL
8499	ANYA	SALESMAN	1991-02-20	1600.00	300.00
8521	SETH	SALESMAN	1991-02-22	1250.00	500.00
8566	MAHADEVAN	MANAGER	1991-04-02	2985.00	NULL
8654	MOMIN	SALESMAN	1991-09-28	1250.00	400.00
8698	BINA	MANAGER	1991-05-01	2850.00	NULL
8882	SHIVANSH	MANAGER	1991-06-09	2450.00	NULL
8888	SCOTT	ANALYST	1992-12-09	3000.00	NULL
8839	AMIR	PRESIDENT	1991-11-18	5000.00	NULL
8844	KULDEEP	SALESMAN	1991-09-08	1500.00	0.00

5 Write a query to display all the records with all the columns.

6 Write a query to display EName and Sal of employees whose salary are greater than or equal to 2200

7 Write a query to display details of employs who are not getting commission.

8 Write a query to display employee name and salary of those employees who don't have their salary in range of 2500 to 4000.

9 Write a query to display the name of employee whose name contains "A" as third alphabet in Ascending order of employee names.

10 Write a query to display the ename and sal with 50% of sal as DA.

11 Write a query to display the name of employee whose name contains"M" as First and "L" as third alphabet.

12 Write a query to display details of employs with the text "Not given", if commission is null.

13 Display the distinct job titles offered by the Organization.

14 Display the Names of employees who are working as Manager or Analyst.

15 Display the names of employees who joined the organization on or after 01/05/1991.

Experiment No. 2

Objective: Understanding the use of DML command with MySQL functions.

Task: Open MySQL and load MYORG database. Write and Execute the SQL command for the following and also write the steps/commands in your Practical notebook.

1 Write commands to display the system date.

2 Write a command to display the name of current month.

3 Write command to print the day of the week of your birthday in the year 2015.

4 Write a query to display employee names in lower case from Emp table.

5 Write a query to display last 3 characters from all the names of employee from Emp table.

6 Write a query to display ename alon with the position of 'N' character in ename column from Emp table.

7 Write a query to display ename and two characters from 2^{nd} position in job column from Emp table.

8 Write a query to display ename and weekday on which they joined from Emp table.

9 Write a query to display ename alon with number of years(experience) as on today from Emp table.

10 Write a query to display ename, Job and Date of retirement (60 years after Hiredate) from Emp table.

11 Write a query to find out the result of 6^3.

12 Write a query to find out the result of $30^{1/2}$ (Square root of 30)

13 Write the command to display the ename and its length from Emp table.

14 Write the command to round off value 15.193 to nearest ten's i.e. 20.

15 Write a query to display ename concatenated by job from Emp table.

Experiment No. 3

Objective: Understanding the use of DDL commands.

Task: Write and Execute the SQL command for the following and also write the steps/commands in your Practical notebook.

1. Create table CUSTOMER as per following Table structure.

Column Name	CustID	CustName	CustAdd	CustCity	CustPhone
Data Type	NUMBER	VARCHAR	VARCHAR	VARCHAR	VARCHAR
Length	7	30	40	30	10
Constraints	Primary			Not Null	

2. Insert 5 records with relevant information in the Customer table.
3. Update all the records as add 'Mr.' with CustName.
4. Add one column Email of data type VARCHAR and size 30 to table Customer.
5. Add one more column CustIncomeGroup of data type VARCHAR(10).
6. Drop the column CustomerIncomeGroup from table Customer.
7. Modify the column CustCity as change the size 40 characters long.
8. Delete all the records who belongs to 'Jaipur'
9. Create table ORDER as per following Table structure. Also make CustNo as Foreign Key which refers CustID of CUSTOMER table.

Column Name	OrderNo	CustNo	ItemName	Qty	Price
Data Type	NUMBER	NUMBER	VARCHAR	NUMBER	NUMBER
Length	5	7	30	5	6,2
Constraints	Primary			>=2	Not Null

10. Add 5 records as per defined constraints in Order table.
11. Create a table TEMPCUSTOMER from existing CUSTOMER table with CustID, CustName and CustPhone columns.
12. Write command to show the Tables in the MYORG Database.
13. Drop the TEMPCUSTOMER table.
14. Drop the Foreign Key constraints from the Order Table.
15. Drop the database MYORG.

Unit 4: IT Applications

Experiment No. 1

Objective: Understanding the Application Area of IT and latest happening in IT.

Task: Write the brief note in about the following in your Practical notebook.

1. Visit Three Web sites related to e-Governance and point out its major services offered to the people.
2. Visit Three Web sites related to e-Business/Commerce and point out its major services offered to the customers.
3. Visit Three Web sites related to e-Learning and point out its major services offered to the learners.
4. Login to ThinkQuest and Make a page named 'My Survey to IT Application' and post all the comments about visited web portals along with their links.
5. Document a Project assigned by your teacher.

Class XI – Practical Examination Guidelines

S.No.	Description	Marks
1.	Problem Solving using Java	12
2.	SQL Queries	4
3.	Practical Record • Familiarization of Computer and its Productivity Tools • Simple Problems using IDE Java • SQL Queries • IT Applications	8
4.	**Viva Voice**	6
	TOTAL	30

Evaluation of Practical Examination

1. Problem solving using Java

Student is required to solve programming problems based on all concepts covered in theory throughout the year and maintain a record of these in the practical file.

Student will be given a problem to be solved using Java during final Practical examination to be conducted at the end of the academic session

2. SQL Queries

Students will be trying out SQL queries in MySQL throughout the year along with course coverage in theory.

Student will be asked to write 4 queries based on one or two tables during final practical examination to be conducted at the end of the academic session

3. Practical Record File

A practical record file is required to be created during the entire academic session. It should be duly signed by the concerned teacher on regular basis and is to be produced at the time of Final Practical Examination for evaluation. It should include the following:

- Print out of at least 2 documents with use of Different Style, Page Setting/Formatting, Bulleting/Numbering and Tabulation
- Print out of at least 2 spreadsheets with simple calculations, basic Functions, macros and graphs/charts
- At least 6 solutions of simple problems and 2 IT applications using IDE based Java.
- At least 20 SQL queries based on one table

4. Viva Voce

Students will be asked oral questions during practical Examination to be conducted at the end of the course. The questions will be from the entire course covered in the academic session.