1) Write a java code to display the system date and the date before 763 days from today’s date.

2) Write a code in java which take 10 numbers store it in a combo box and display the greatest one.

3) WAP to input any number ‘n’ and print the product of all its digits.
   For e.g. if n=235 then print 5*3*2=30

4) Write a code in java to generate single calculator using classes and accepting the two integers and operator with all methods to input, display, add, subtract, product and division.

5) Write a java code to get the output as shown below if the user input the String ‘D’.

   A
   B A
   C B A
   D C B A

6) Write a java code to find area of a rectangle and triangle by using class hierarchy.

7) Write a java method which take a float argument and return integer without using type casting and round method.

8) Read the following case study and answer the questions that follow:

   ABC Company has developed the following interface to enter and display data related to Income Tax of employees.

   ![Image of Income Tax Interface]
(a) When Calculate button is clicked, Income Tax, Education Tax, Surcharge, and Total Tax (Sum of Income Tax, Education Tax, Surcharge) is displayed in their respective text boxes based on the following criterion

(b) When the user clicks the clear button all textboxes should be set to zero.

<table>
<thead>
<tr>
<th>Taxable Income</th>
<th>Income Tax</th>
<th>Education Tax</th>
<th>Surcharge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upto ₹ 1,00,000</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
</tr>
<tr>
<td>₹ 1,00,000 to 1,50,000</td>
<td>10% of the amount exceeding ₹ 1,00,000</td>
<td>2% of Taxable Income</td>
<td>Nil</td>
</tr>
<tr>
<td>₹ 1,50,000 to 2,50,000</td>
<td>₹ 5,000 + 20% of amount exceeding ₹ 1,50,000</td>
<td>2% of Taxable Income</td>
<td>Nil</td>
</tr>
<tr>
<td>₹ 2,50,000 and above</td>
<td>₹ 25,000 + 30% of the amount exceeding ₹ 2,50,000</td>
<td>2% of Taxable Income</td>
<td>1% of taxable Income</td>
</tr>
</tbody>
</table>

9) The given form Calculates the GCD (HCF) of two Number’s. Write code for the command button (jbutton1) to print the GCD in the jTextField3.

![GCD Calculator](image)

10) Create an application that receive a number through a jTextField1 and Print the sum of the individual digits when the submit button is pressed.
11) Write a Program in Java to Calculate the Factorial of an Integer using a while loop. (2)

12) Write a Program in Java to display the following series upto 10 terms (2)

10  13.5  17  20.5  24.0............

13) Write a Program in Java to print series squares of first 10 Natural numbers and their sum.

14) Using For…..Loop display the following pattern :

*  
**  
***  
****  
*****  
******  
*******  
********  
*********  
**********

15) Read the following case study and write a java code to answer the questions that following.

Manager of Bachat Bank has developed a java form for finding EMI to be paid by customers against repayment of loan. Loan interest rates are (Yearly) -

<table>
<thead>
<tr>
<th>Loan Type</th>
<th>Interest Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car Loan.</td>
<td>14.5 %</td>
</tr>
<tr>
<td>Personal Loan</td>
<td>13.25 %</td>
</tr>
<tr>
<td>Education Loan</td>
<td>11.75 %</td>
</tr>
</tbody>
</table>
a) Initially loan type should be set to Car Loan, jtxtRate should be disabled and jcmbYears should have values 5, 10, 15, and 20.

b) If loan amount is less than or equal to 0. It should display an error message “Invalid Amount” and cursor should point to jtxtLoanAmt.

c) When the user clicks the CmdCalcEMI button, the total payable EMI should be calculated and displayed in the jtxtEMI text box. To calculate EMI, firstly calculate compound interest using formula \( ci = p \times (1 + r/100)^t \). Add compound interest to loan amount and divide by time (in months).

d) Write the code for jCmdExit button to stop the application and jCmdClear command button to clear all the text boxes, option buttons. Also cursor should point on jtxtLoanAmt test box.

16. Define a class Bank to represent the bank account of a customer with the following specification

**Private Members:**
- Name of type character array (string)
- Account_no of type long
- Type_of_account (S for Saving Account, C for current Account) of type char
- Balance of type float

**Public Members:**

A constructor to initialize data members as follows

- Name NULL
- Account_no 100001
- Type_of_account ‘S’
- Balance 1000

(i) A function NewAccount() to input the values of the data members Name, Account_no, Type_of_account and Balance with following two conditions
17. Write a java method to fetch the data from the employee table and display it in jTable the method already having Connection class object name con, Statement class Object name smt and ResultSet class object rs with the following query SELECT EMPNO, ENAME, JOB, SAL FROM EMP’.

18. Write a java method to get the sum of the following series:

\[ x + \frac{x^2}{4!} + \frac{x^4}{16!} + \frac{x^6}{36!} + \frac{x^8}{64!} + \ldots + \frac{x^n}{(n^2)!} \]

19. Write a Method in Java to take a number as argument and print the product of its digit, as if a number entered is 234 then the program gives output as 24.

20. Read the following case study and answers the question that follows:

ABC Company has developed the following interface to enter and display data related to Income Tax of employees.

![INCOME TAX Interface](image)

Write the code to implement the following:
(a) When the Frame loads Text Fields for Income Tax, Education Tax, Surcharge and Total Tax Amount should be disabled. They should also be enabled when Calculate command button is clicked.
(b) Taxable income entered should be numeric data only.
(c) When the user clicks the clear command button, the Text Fields EmpCode and EmpName should be set to blank and other TextFields should be set to zero.
(d) When calculate command button is clicked, Income Tax, Education Tax, Surcharge and Total Tax (sum of Income Tax, Education Tax and Surcharge) is displayed in their respective Text Fields based on the following criterion:

<table>
<thead>
<tr>
<th>Taxable Income</th>
<th>Income Tax</th>
<th>Education Tax</th>
<th>Surcharge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upto Rs. 1,00,000</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
</tr>
<tr>
<td>Rs. 1,00,001 -Rs. 1,50,000</td>
<td>10% of the amount exceeding Rs. 1,00,000</td>
<td>2% of Taxable Income</td>
<td>Nil</td>
</tr>
<tr>
<td>Rs. 1,50,001 – Rs.2,50,000</td>
<td>Rs. 5000 + 20 % of the amount exceeding Rs. 150,000</td>
<td>2% of Taxable Income</td>
<td>Nil</td>
</tr>
<tr>
<td>Rs. 2,50,001 and above</td>
<td>Rs. 2,50,000 + 30% of the amount exceeding Rs. 2,50,000</td>
<td>2% of Taxable Income</td>
<td>1% of the Taxable Income</td>
</tr>
</tbody>
</table>

21. Write a method in Java that takes two integer arguments and returns power of it. Suppose x and y passing as an argument then it returns x to power y after calculation.

22. Write a program to check given no is prime number or not. The number is prime if number is divisible by 1 and itself.

23. Write a Method in Java to take a number as argument and print the product of its even digits, as if a number entered is 234 then the program gives o/p as 2*4=8.

24. Write a java method that takes an integer N as input parameter and displays the sum of all the digits in the number.

25. Design a class to represent a bank account. Include the following members:

   Data Members:
   - Name of the depositor
   - Account number
   - Type of account(Savings/Current)
   - Balance amount in the account(Minimum balance is Rs.500.00)

   Methods:
   - To read account number, Depositor name, Type of account
   - To deposit an amount ( Deposited amount should be added with it)
   - To withdraw an amount after checking balance(Minimum balance must be Rs.500.00)
   - To display the balance

   (Assume necessary interface (with NetBeans IDE) for above program)

26. Read the following case study and answer the questions that follow:

   Mr.Basu of MEGA MALL decided to computerize the billing department. The accounts manager at MEGA MALL is creating the billing software to generate the bill during the sale
period. A new bill is generated for each item sold. The discount is given based on the item category. An additional discount of 5% is given to the MEGA MALL card holders. The following is data entry screen used at the MEGA MALL:

(a) Write the code for the Clear Button to clear all the JTextFields.

(b) Write the code for the TestJB button to ensure that the user does not enter a negative or a zero value in txtItem JTextField. If a negative or a zero value is entered that txtItem should be made blank and a warning message should be displayed through a JOptionPane.

(c) Write the code for the Calculate button to display the discount and final price in the txtDiscount and txtFP JTextFields respectively. Note that final price is calculated as (price – discount) and the discount is calculated based on the category and price according to the following table. Also remember to given an additional 5% discount for membership card holders i.e. if the CHCheck JCheckBox is checked.

<table>
<thead>
<tr>
<th>Category</th>
<th>Price</th>
<th>Discount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men’s</td>
<td>&lt;10000</td>
<td>30%</td>
</tr>
<tr>
<td></td>
<td>&gt;=10000</td>
<td>50%</td>
</tr>
<tr>
<td>Women’s</td>
<td>&lt;8000</td>
<td>40%</td>
</tr>
<tr>
<td></td>
<td>&gt;=8000</td>
<td>50%</td>
</tr>
<tr>
<td>Kid’s</td>
<td>&lt;5000</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td>&gt;=5000</td>
<td>30%</td>
</tr>
</tbody>
</table>
27. WAP to input Basic salary of a person and calculate Net salary in Rs. after increasing his salary as per the following criteria and Display the Net Salary.

<table>
<thead>
<tr>
<th>Basic(Rs.)</th>
<th>%increases</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 3000</td>
<td>2</td>
</tr>
<tr>
<td>&gt;=3000&lt;5000</td>
<td>5</td>
</tr>
<tr>
<td>&gt;=5000&lt;10000</td>
<td>10</td>
</tr>
<tr>
<td>Above 10000</td>
<td>20</td>
</tr>
</tbody>
</table>

28. Write a java code to input height(in inches) in a text field and convert it into feet and inches. Display the final result in feet and inches. For e.g. if height is 77 inches then after conversion it will be 6 feet 5 inches. [ 1 feet=12 inches]

29. Consider the form given above and write code for the following:-

i) When ‘compute discount’ button is clicked, the discount should be calculated as per the following criteria:

<table>
<thead>
<tr>
<th>COST(Rs.)</th>
<th>DISCOUNT(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1000</td>
<td>5</td>
</tr>
<tr>
<td>&gt;=1000</td>
<td>10</td>
</tr>
</tbody>
</table>

NOTE:- The extra discount of 3%, 2% and 1% should be given for electrical appliances, electrical gadget and stationery respectively.

ii) On clicking ‘Compute Net Amount’, the net amount must be calculated and displayed in textbox 3 after giving desired discount.

30. Observe the form given below and write a java code for the following:-

i) The list box should be populated with following 4 accessories when the form is opened.

ii) The text fields 1 & 3 must be set to non-editable.

iii) The default choice should be set to List Item1.

iv) Upon clicking the button, the price of selected accessory should be displayed in TextField 1 and total cost should be displayed in TextField3, on the basis of given criteria:

<table>
<thead>
<tr>
<th>Accessory</th>
<th>Price(Rs./Item)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charger</td>
<td>45</td>
</tr>
<tr>
<td>EarPhone</td>
<td>100</td>
</tr>
<tr>
<td>Battery</td>
<td>250</td>
</tr>
<tr>
<td>Card</td>
<td>225</td>
</tr>
</tbody>
</table>

31. Write code for the following:-

i) The ‘cost’ text field should contain only non-negative value.
ii) The jComboBox1 must contain Economic, Business and Luxury when the form window is opened.

iii) The ‘material quality’ should be set as ‘Luxury’ by default.

iv) When ‘calculate’ button is clicked, the cost should be calculated & displayed as per the following criteria and message should be displayed on JLabel4 as given on the form:-

<table>
<thead>
<tr>
<th>Material</th>
<th>COST(Rs./sqm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic</td>
<td>50</td>
</tr>
<tr>
<td>Business</td>
<td>80</td>
</tr>
<tr>
<td>Luxury</td>
<td>120</td>
</tr>
</tbody>
</table>

v) The ‘cost’ text field could not be edited.

32. Create a class player as follows:-

   Data members:- pname(String),innings(int),runs(int),notouts(int)

   Methods:-
   i) void showdata() – to display the details of player.
   ii) Void calcAvg() – to calculate batting average of player as follows:-
       Bat. Avg = runs/(innings-notouts);

   WAP to create an object of class Player to input player details and invoke all its methods.

33. Give the name of the methods required to perform the following tasks in Java:-

   i) To check the equality of two strings.
   ii) To extract a set of characters from a given string.
   iii) To get the character present at specified index.
   iv) To find the index of the last occurrence of the specified character.

34. WAP to input any string and count total no. of uppercase and lowercase letters separately.

35. Write a method that takes a number as argument and check whether it is perfect or not.

36. Write a method that takes a fractional number as argument and print only its integer part.

37. Write a method that takes distance in inches as argument and convert it into feet and inches. For example- if distance is 15 inches then result will be 1 feet 3 inches.
38. The shop-n-save store has developed the following data entry screen for its operations. The store offers 3 different types of membership discount schemes for its regular customers. Platinum members get a discount of 10% on all their purchases, Gold members get 5% and Silver members get 3% discount.

Write a java code to add the following functionalities:

a) to disable the text fields AMOUNT, DISCOUNT AND NET.

b) To remove the decimal part from the text field NET so that the net amount contains only the integer portion in rupees.

c) The GOLD radio button should be selected by default when the form is opened. Also write the appropriate event.

d) To calculate amount, discount and net amount as per the descriptions and conditions. The formulas are as follows: \( \text{Amount} = \text{quantity} \times \text{rate} \) and \( \text{Net Amount} = \text{Amount} - \text{Discount} \)

e) WAP to input any number and print its first 10 multiples.
39. Observe the form given below and write a java code on the click of button to calculate the cost of food items selected by the customer.

![Form Image]

40. Name the method to perform the following operations in java Swing:-
   i) to get the name of selected item from list box.
   ii) To check whether the check box is selected or not.
   iii) To enable/disable the text field.

41. Community Works Department has proposed the following layout to obtain the details of volunteers for a community work project running in your school. The user types his/her roll number and selects his/her stream and section from the jList provided. Upon clicking the ‘submit’ button, the selected contents of two lists and rollno are merged in the order <stream><section><Rollno> and added to the combo box. Write a java code to implement the above mentioned functionality.

![Form Image]

42. The shop-n-save store has developed the following data entry screen for its operations. The store offers 3 different types of membership discount schemes for its regular customers. Platinum members get a discount of 10% on all their purchases, Gold members get 5% and Silver members get 3% discount. The Regular customer gets an additional discount of 2% more.
43. Write the java code to add the following functionalities:

   i) to disable the text fields DISCOUNT AND NET.

   ii) To remove the decimal part from the text field NET AMOUNT so that the net amount contains only the integer portion in rupees.

   iii) The GOLD radio button should be selected by default when the form is opened. Also write the appropriate event.

   iv) To calculate amount, discount and net amount as per the descriptions and conditions. The formulas are as follows:

       Amount = quantity * rate

       Net Amount = Amount – Discount

   v) Write the code for cmdExit to close the application, but before the application is closed it should check the net amount and if the net amount > 10,000 the membership of the customer should be upgraded to the next higher level and a message box informing the customer should be displayed. For example if the customer already has Silver membership it should be upgraded to Gold and he should be informed of the same using a message box.

44. The YOUWE Event Managing Company is organizing a shopping festival in the Shopping Mall. The company gives a discount on the total amount spend (in all the shops) in the mall. The discount is given based on the credit card used. The following is the layout of the form:
Write the Java code for the following:

i) To display the message “Thank You for shopping” and to close the application when EXIT button is clicked.

ii) To clear all the text fields when “clearALL” button is clicked and set the default choice to VISA.

iii) To apply a check so that user could not enter negative or zero value in ‘Shopping Amount’ text field. If user does so, the text field should be made blank and a warning message should be displayed.

iv) Calculate and display discount and net price in appropriate text fields.

\[
\text{Net Price} = \text{Shopping Amount} - \text{Discount}
\]

The discount is calculated based on credit card and total shopping amount as follows:

<table>
<thead>
<tr>
<th>Credit Card Type</th>
<th>Shopping Amount(Rs.)</th>
<th>Discount(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VISA</td>
<td>&lt;5000</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>&gt;=5000</td>
<td>20</td>
</tr>
<tr>
<td>XYZ</td>
<td>&lt;10000</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>&gt;=10000</td>
<td>25</td>
</tr>
<tr>
<td>ABC</td>
<td>&lt;8000</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>&gt;=8000</td>
<td>15</td>
</tr>
</tbody>
</table>

45. Create a class Height to store height in feet and inches. WAP to input height in inches in a text box and store it in an object and then convert it into feet and inches. Display the result in respective text boxes.
46. Sumeet electronics has the following products with their list prices given. Create a class SHOP to store product name & price of product. Write following class methods:

i) void getinfo() – to input details of product through arguments.

ii) void showinfo() – to show details of product.

47. The store gives a 10% discount on every product. However at the time of festive seasons, the store gives a further 7% festival discount in addition to 10%. Write a Java program to create an object of class SHOP and take input of product name only. Calculate the List Price & Net price for a product after giving discount after selecting either festival or non-festive radio buttons.

<table>
<thead>
<tr>
<th>Product</th>
<th>List price (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Washing machine</td>
<td>12000</td>
</tr>
<tr>
<td>Colour TV</td>
<td>17000</td>
</tr>
<tr>
<td>Refrigerator</td>
<td>18000</td>
</tr>
<tr>
<td>OTG</td>
<td>8000</td>
</tr>
<tr>
<td>CD Player</td>
<td>4500</td>
</tr>
</tbody>
</table>

48. Define a class SPORTS with the following specifications:

Private Members:

SCODE(long), SNAME(String), Fees(int), Duration(int)

Public members:

i) Default constructor to assign initial values of S_CODE as 1001, S_NAME as “CRICKET”, Fees as 500 and Duration as 70.

ii) Argument constructor to assign values to SCODE, SNAME and Duration through arguments and assign the fees as per following conditions:
SNAME                  Fees
TABLE TENNIS          2000
SWIMMING              4000
FOOTBALL              3000

iii) void showsport ( ) to display the contents of all data members on screen.

WAP to create an object of this class & take input using text boxes and invoke argument constructor.
49. Pizza cafe software has provided the following Pizza order form for the customer. The rate of Regular Pizza is Rs. 60 and of Pan Pizza Rs. 80.

(i) Write the code to clear all the check boxes.

(ii) Write the code to find the cost of toppings (Rs.10 each) selected by customer and then to calculate the amount as follows:

\[ \text{Amount} = (\text{Rate} + \text{cost of toppings}) \times \text{quantity} \]

50. A programmer is required to develop a student record. The school offers two different streams, medical and non-medical, with different grading criteria. The following is the data entry screen used to calculate percentage and grade.

(i) Write code to prevent the user from entering negative value in ‘Percentage’ text field.

(ii) Write the code for the ‘Clear’ button to set the default choice to “Medical”.

(iii) Write the code to close the form when ‘Exit’ button is clicked.

(iv) Write the code for the ‘Calculate Percentage’ button to calculate the percentage and display in text field ‘Percentage’, after finding the total marks of first term and second term (assuming that both marks are out of 100).
51. Write a java program to print the following triangular pattern:-

* 
**
***
****
*****

52. Write a java program to input two numbers x and y and count total number of prime numbers between x and y. For example if x=1 and y=10 then o/p is 4.

53. Richika is a programmer at Alpha Builders. To calculate wages to be paid to labourers she has developed the following GUI in Netbeans.

Male and Female labourers are respectively paid at the rate of Rs.140/- per day and Rs. 160/- per day. Skilled labourers are paid extra at the rate of Rs.50/- per day.

(i) What should be done so that only one of the radio buttons (Male and Female) can be selected at a time?

(ii) Write code to do the following:
   a. Calculate and display the Total wages in the corresponding label when the "Calculate Wages" button is pressed.
   b. Clear the Name and No. of days worked text fields.
   c. Close the application when the "STOP" button is pressed.
54. Glamour Garments has developed a GUI application for their company as shown below

The company accepts payments in 3 modes - cheque, cash and credit cards. The discount given as per mode of payment is as follows.

<table>
<thead>
<tr>
<th>Mode of Payment</th>
<th>Discount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash</td>
<td>8%</td>
</tr>
<tr>
<td>Cheque</td>
<td>7%</td>
</tr>
<tr>
<td>Credit Card</td>
<td>Nil</td>
</tr>
</tbody>
</table>

If the Bill Amount is more than 15000 then the customer gets an additional discount of 10% on Bill Amount.

(i) Write the code to make the textfields for Discount (named txtDisc) and Net Amount (named txtNetAmt) uneditable.

(ii) Write code to do the following:

(a) Write a method that takes “Bill Amount” as argument and calculates discount when “Calculate Discount” button is clicked and it should be displayed in the discount textfield. "Calculate Net Amount" button (named btnCalcNetAmt) should also be enabled.

(b) Write a method to calculate Net Amount when "Calculate Net Amount" button is clicked and it should be displayed in the net amount textfield.

55. Define a class Electbill that contains consumer details as follows:

Data members/Instance variable :
- cno (long) // consumer number
- cname (String) // consumer name
- cadd (String) // consumer address
- NOU(long) // to store number of units consumed

Member functions / Methods :

(i) Electbill(....) : Parameterised constructor to assign values to consumer number, consumer name and address

(ii) void display() : Display consumers details

(iii) void calculate() : Calculate the monthly bill of consumer according to following slabs and it should also display the total amount to be paid.

<table>
<thead>
<tr>
<th>Number of units consumed</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – 100</td>
<td>Rs 500/-rental charges only</td>
</tr>
<tr>
<td>101 - 200</td>
<td>Rs 1.00 per call + rental charges of Rs. 500</td>
</tr>
<tr>
<td>201 - 300</td>
<td>Rs 1.20 per call + rental charges of Rs. 500</td>
</tr>
<tr>
<td>Above 300</td>
<td>Rs 1.50 per call + rental charges of Rs. 500</td>
</tr>
</tbody>
</table>
56. **WAP to create an object of class Electbill and invoke all its methods.**

For the following GUI application. The percentage marks are to be entered in the TextField and upon clicking the Button, corresponding grade (as per following rules) should be displayed in the Label.

<table>
<thead>
<tr>
<th>Marks Percentage</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;=60</td>
<td>A ++</td>
</tr>
<tr>
<td>&gt;=45&lt;60</td>
<td>B</td>
</tr>
<tr>
<td>&gt;=33&lt;45</td>
<td>C</td>
</tr>
<tr>
<td>&lt;33</td>
<td>F</td>
</tr>
</tbody>
</table>

57. **The Manager of Bachat Bank has developed a java form for finding EMI to be paid by customers against repayment of loan.**

Loan interest rates (Yearly) -

<table>
<thead>
<tr>
<th>Loan Type</th>
<th>Interest Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car Loan</td>
<td>14.5 %</td>
</tr>
<tr>
<td>Personal Loan</td>
<td>3.25 %</td>
</tr>
<tr>
<td>Education Loan</td>
<td>11.75 %</td>
</tr>
</tbody>
</table>

(i) Initially loan type should be set to Car Loan & InterestRate box should be disabled.

(ii) If loan amount is less than or equal to 0. It should display an error message “Invalid Amount”

(iii) When the user clicks the Calculate EMI button, the total payable EMI should be calculated and displayed in the EMI text box. To calculate EMI, firstly calculate compound interest using formula \( ci=p*(1+r/100)^t \). Add compound interest to loan amount and divide by time by time(in years) * 12.

(iv) Write the code for Exit button to stop the application and Clear button to clear all the text boxes & option buttons.
58. Write a java code to input time (in minutes) in a text box and convert it into hours and minutes. Display the result in respective text boxes.

![Image](image.png)

59. Write a java program to input any number in a text box and print the sum of its odd factors only.

   Example:-
   
   If number is 36 then its factors are 1,2,3,4,6,9,12,18 and sum of its odd factors is 1+3+9=13.

60. “Electro Bazaar” offers 5% discount to all the customers. However, if customer type is “regular” then additional discount of 10% is given to that customer.

![Image](image2.png)

Create a class “BILL” as follows:-

Data members/Instance Variables:-

- Amount - double type
- Cust_type - String (can either be ‘regular’ or ‘occasional’)

Methods:-

i) Argument Constructor – to assign values to data members through arguments.

ii) void compute() – to calculate and display the discount(in Rs.) and Net Amount(in Rs.) in the following format. Net Amount is calculated as Amount – Discount.

<table>
<thead>
<tr>
<th>Bill Amount</th>
<th>Discount(Rs.)</th>
<th>NetAmount(Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>xxxxxxxxxxx</td>
<td>xxxxxxxxx</td>
<td>xxxxxxxxxxxxxxx</td>
</tr>
</tbody>
</table>

Write a Java program to create an object of class BILL and invoke constructor and compute().
61. Create an interface COST as follows:

   Method:

   public void calcPrice(int qty) - that takes 'qty' as argument and calculate total cost(price*qty).

   ![Image of a GUI interface for calculating drink cost]

   Also Create a class SoftDrink as follows:

   Data members:

   dcode (long) // drink code
   dname(String) // drink name
   price(double)

   Methods:

   i) showdetails() - to display details of drink

   The class SoftDrink must also implement an interface COST.

   WAP to input drink details using class SoftDrink object and invoke all the methods of class & interface.

62. Create a class "Employee" as follows:

   Instance variables: - empno(long), empname(String), job(String);

   Methods:

   i) void showinfo() - to display details of employee.

   Create another class "Salary" that inherits from class "Employee" as follows:

   Instance variables: - basic(double), newsal(double)
Methods:-

i) void calculate(double perc) – that takes percentage amount “perc” as argument and calculates newsalary by incrementing the basic salary by that percentage amount.

ii) void dispdata() – to display basic salary.

Write a Java program to create an object of class Salary to input details of employee and also invoke showinfo(), calculate() and dispdata() methods.

63. The FOR U SHOP has computerized its billing. A new bill is generated for each customer. The shop allows three different payment modes. The discount is given based on the payment mode. The following is the data entry screen used at to generate the bill.

(i) Write the code for the CmdClear Button to clear all the Text Fields and default Payment Mode must be ‘Cash’ by default.

(ii) Write the code for the Calculate Button to display the Discount Amount and Net Price in the Discount and the NetPrice Text Fields respectively. Note that Net Price is calculated as Shopping Amount – Discount Amount and the discount is calculated based on the credit card and the total shopping amount according to the following table:-

<table>
<thead>
<tr>
<th>Card Type</th>
<th>Shopping Amount</th>
<th>Discount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash</td>
<td>&lt; 10000</td>
<td>20 %</td>
</tr>
<tr>
<td></td>
<td>&gt;= 10000</td>
<td>25 %</td>
</tr>
<tr>
<td>Cheque</td>
<td>&lt; 15000</td>
<td>10 %</td>
</tr>
<tr>
<td></td>
<td>&gt;= 15000</td>
<td>15 %</td>
</tr>
<tr>
<td>Credit Card</td>
<td>&lt; 10000</td>
<td>10 %</td>
</tr>
<tr>
<td></td>
<td>&gt;= 10000</td>
<td>12 %</td>
</tr>
</tbody>
</table>

(iii) Write the code for Exit button to display a message “Thank You “and exit out of the
64. Define a class Travel with the following descriptions:

Data members/Instance variable:
- TravelCode(long), Place(string), No_of_travellers(int), No_of_buses(integer)

Member functions / Methods:

i) A constructor to assign initial values of TravelCode as 201, Place as “Nainital”, No_of_travellers as 10, No_of_buses as 1

ii) A method NewTravel() which allows user to enter TravelCode, Place and No_of_travellers through arguments. Also, assign the value of No_of_buses as per the following conditions:

<table>
<thead>
<tr>
<th>No_of_Travellers</th>
<th>No_of_buses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 20</td>
<td>01</td>
</tr>
<tr>
<td>Equal to or More than 20 and less than 40</td>
<td>02</td>
</tr>
<tr>
<td>Equal to 40 or more than 40</td>
<td>03</td>
</tr>
</tbody>
</table>

iii) A method ShowTravel( ) to display the content of all the data members on screen.

WAP to create an object of class Travel and invoke all its methods.

65. Design the following form and calculate DA, HRA, Gross Sal, Annual Sal & Total Tax as given:

66. WAP to input any digit number and print the sum of only its even digits. Example: 2354=2+4=6.

67. WAP to input two numbers and check whether they are special Prime or not.
   Example:- A special prime is a prime number that differs from another prime number by six such as (7,13),(11,17), etc.

68. Design the given form and calculate the total cost & discount (only if customer is Special) as given on the form. A special additional discount of 10% is given to special customers.
Define a class TOUR as follows:

Private Members:
- Tcode(string), Noofadults(int), Noofkids(int), kilometres(int), totFare(float)

Public:
i) A constructor to assign initial values as follows:
   - Tcode with the word “NULL”, Noofadults, Noofkids, kilometres & totFare with zero.

ii) A function AssignFare() which calculates and assigns the value of data members TotFare as follows:
   - For Each Adult
     - Fare(Rs.)
     - For Kilometres
       - 500 >=1000
       - 300 <100 & >=500
       - 200 <500
   - For each kid the above fare will be 50% of the Fare mentioned above.

Example if distance is 850 km and Noofadults are 2, Noofkids are 3 then TotFare=1050Rs.

iii) EnterTour() to input values for Tcode, Noofadults, Noofkids and kilometres through arguments.

iv) ShowTour() to display the details of all the data members along with total fare.

WAP to input a string and count only those words that starts with uppercase vowel.

Example:- if string is “Carry An Umbrella” then o/p is:- 2

Define a class POWER in C++ with following description:

Private Members:
- MetreNo(long), CName(string), Units(long), Charges(float)
Public Members:-

i) A function CALCCHARGE( ) to calculate Charges according to the following conditions:

<table>
<thead>
<tr>
<th>Units Conditions</th>
<th>Charges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 100 Units</td>
<td>Rs. 2.00 per Unit</td>
</tr>
<tr>
<td>Below 200 Units and &gt;= 100 Units</td>
<td>Rs. 3.00 per Unit</td>
</tr>
<tr>
<td>&gt;= 200 Units</td>
<td>Rs. 5.00 per Unit</td>
</tr>
</tbody>
</table>

For Example: If the Units are 392, Charges will be Rs. 1463/-

ii) A Function Enterdata( ) to allow user to enter values for MetreNo, CName, Units & through arguments.

iii) A Function ShowBillI( ) to view the contents of all the data members.

72. WAP to input your full name and print its initials.

Example:- if name is “Amit Kumar Singh” then print A.K.S

73. Design the following form and calculate Total charges according to the following criteria:-

<table>
<thead>
<tr>
<th>Seat Type</th>
<th>Charges(Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stall</td>
<td>20</td>
</tr>
<tr>
<td>Circle</td>
<td>35</td>
</tr>
<tr>
<td>Upper</td>
<td>50</td>
</tr>
<tr>
<td>Box</td>
<td>80</td>
</tr>
</tbody>
</table>

Display price per seat and payment mode on respective Labels.

74. Observe the form given below and write a java code on the click of button to calculate the total cost of food items selected by the customer.
75. WAP to input Basic salary and calculate TA, DA, HRA & Net salary in Rs. and display them in respective text boxes as per the following criteria:

<table>
<thead>
<tr>
<th>Basic(Rs.)</th>
<th>TA(%)</th>
<th>DA(%)</th>
<th>HRA(Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>below 3000</td>
<td>NIL</td>
<td>NIL</td>
<td>NIL</td>
</tr>
<tr>
<td>3000 to 5000</td>
<td>5</td>
<td>10</td>
<td>500</td>
</tr>
<tr>
<td>5000 to 10000</td>
<td>10</td>
<td>20</td>
<td>1000</td>
</tr>
<tr>
<td>Above 10000</td>
<td>20</td>
<td>30</td>
<td>2000</td>
</tr>
</tbody>
</table>

Formula is: \( \text{Net Sal} = \text{Basic} + \text{TA} + \text{DA} + \text{HRA} \)

76. Mr. Das is working as a Chief Information Officer in AMD Constructions Company. In this month of January he received a letter from the management to store all his employee information in electronic form. He decided to develop a small software application to store employee’s personal data. He instructed one of his juniors to make a form in VB to enter employee information. The junior presented the following form to Mr. Das:

The form details are given in the following table:

(i) Write a Code snippet on click event of ‘ClearForm’ command button to clear text boxes
(ii) Write code to set default choice as option button1.
(iii) Write code to clear all check boxes controls.
(iv) Write code to close the form and display the gender selected.
(v) Write a method procConvertCase to convert all the employee details in textbox1, 2 & 3 to Upper Case character and display separately.
v) Write a method that takes your name as argument and print its length & reverse.

77. An electric shop has announced the following seasonal discounts on the purchase of certain items:

<table>
<thead>
<tr>
<th>Purchase Amount(Rs.)</th>
<th>Discount on Laptop(%)</th>
<th>Discount on Desktop PC(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 25,000</td>
<td>0.0</td>
<td>5.0</td>
</tr>
<tr>
<td>25001 to 57000</td>
<td>5.0</td>
<td>7.5</td>
</tr>
<tr>
<td>57001 to 1,00,000</td>
<td>7.5</td>
<td>10.0</td>
</tr>
<tr>
<td>More than 1,00,000</td>
<td>10.0</td>
<td>15.0</td>
</tr>
</tbody>
</table>

Write the code to read compute Discount(Rs.) and Net Amount(Rs.) based on purchase amount and type of purchase.

Discount=(Discount Rate/100) * Amount of purchase
Net Amount=Amount of purchase – discount

Home Decor Furnishing is a company that manufactures and sells various furnishing items in three qualities (Economy, Business and Elite) and three sizes (Kids, Adults and Giants). The cost of each furnishing item is calculated on basis of a Base Cost, which is the cost of the item in Business quality and Adults size. The cost is changed by – 10% and +20% in case of Economy and Elite quality respectively. Similarly the cost is changed by –5% and +15% in case of Kids and Giants sizes respectively. The interface for gathering users choice is as given below:

Add the following functionality to the interface:

(a) The combo box cmbquality must contain economic, Business and Luxury when the form loads in the memory.
(b) The combo boxes cmbquality and cmbsize should respectively be set to default values of Economy and Adults initially.

(c) PRINT the caption of cmdcalculate button and lblsize.

(d) When a user chooses a choice other than the default choices, the labels lblchangeforquality and lblchangeforsize should display the message. ‘Percent Increase / Decreases in cost ....% according to the logic explained above.

(e) When user clicks the Calculate button the final message should be displayed in the label as indicated in the form image.

**Q.5.**

![](image.png)

a) Write the commands to disable the text box and to set the Total Cost Command Button as default command button.

b) Write the code for cmdClear Command Button to clear all the checkboxes and TextBox.

c) Write the code for cmdTotCost to calculate the Total Cost for the selected dishes.

**Q.6.** An institute offers two courses MBA and MCA of duration 2 years and 3 years respectively. The interface given to capture the marks secured by student in the semester exam.

a) If user select MBA then textboxes for YEAR1 and YEAR2 should be disabled.

b) When the user clicks GPA button, the total marks and the average marks secured by the student should be displayed in text boxes txttotal, txtavg respectively depending upon the option MCA or MBA. An overall GPA in the range 0-10 should be displayed in the message box when the user click it. GPA = Average /10. (Assume that the marks in each semester are out 600)

b) When the user clicks REPORT button, the final report should be displayed in the label lblreport.
Q.7. Mr. Vijay has designed a VB form to gather the data regarding the ranks and prize amounts won by different teams in an annual sports meet. He has used different controls for storing the sports name, rank and the prize amount respectively. Now he wishes to make the following changes to the application he designed.

(a) The team Name should be displayed in upper case and the text box for rank should be enabled only if the corresponding check box is checked. [3]
(b) The text box for prize amount should be enabled only if the corresponding check box is checked [2]
(c) The contents of the text box prize amount should be a non-negative number. [2]
(d) When the user clicks the command button Calculate Prize Amount, the total prize amount should be displayed in a message box. [2]
(e) When the user clicks the clear button, the form should be restored to the default state.