**LAB 2: CONDITIONAL STRUCTURES CSE A**

Write C programs for the following:

1. Write a program to read a number from the user and display the decimal, octal and hexa-decimal equivalent of the same.[HINT: format specifier for decimal-%d, Ocatl-%o, Hexadecimal-%x)
2. C Program to Read Two Integers M and N & Swap their Values
3. Read two integer numbers and find their **sum, difference, product, quotient and remainder**
4. Read the distance in **km** and convert to **m**
5. Convert temperature given in **Fahrenheit to Celsius**

*°C = (°F - 32) \* 5/9*

1. Convert measurement given in **feet to cms**

*1 feet = 30.48cm*

1. Find the **square, cube** of the given integer number.
2. Read base and height of a triangle and calculate it’s **area**
3. Read an alphabet and convert it to **uppercase**
4. Write a program to accept the radius of the circle and calculates the area and perimeter of the circle.
5. Write a program to accept marks in 5 subjects and calculates the total percentage of marks.
6. Read the **initial** **velocity *u*, acceleration *a* and time *t*** and calculate the **displacement *S***

*S = ut +1/2 at2*

1. Given a positive integer denoting *N*, do the following:

* If ,1<=N<=9 then print the lowercase English word corresponding to the number (e.g., one for , two for , etc.).
* If N>9 , print Greater than 9.

1. Write a C program that reads a date (Read the day, month and year as numbers) and print it in the following format. Implement the program using **switch**

**Sample input:**

*Enter day: 2*

*Enter month:12*

*Enter year: 2001*

**Expected output:**

*2 December 2001*

1. A mail order house sells 5 different products whose retail prices are shown in the following table. You are required to write a program that calculates the ***final price*** for a product sold.

The program reads 2 values: *product number* and *quantity sold*.

The ***total price*** is calculated as***unit price \* quantity sold***

A discount of 10% of ***total price*** is available for products 2 and 3.

Your program should determine the ***final price*** for the product obtained by deducting the discount( only for products 2 and 3) from the ***total price***.

Display an error message if an invalid product number is entered

| Product number | Unit price |
| --- | --- |
| 1 | Rs 2.98 |
| 2 | Rs 4.50 |
| 3 | Rs 9.98 |
| 4 | Rs 4.49 |
| 5 | Rs 6.87 |

1. Write a C program that read a number from the user and display whether it is a single digit number, 2 digit number, 3 digit number or a number with more than 3 digits. [Assume only positive inputs]
2. Read a date (day, month, year) from the user and display the date of previous day and next day of the input date. [Your program should work correctly for months with 30 days and months with 31 days....]

**Sample input:** 31 12 1991

**Expected Output:**

**Previous date:** 30 12 1991

**Next date:**  1 1 1992

1. Given a point, a line from the point forms an angle with the horizontal axis to the right of the line. The line is said to terminate in one of the quadrants based on its angle. Write a program that determines the quadrant, given a user input angle. If the angle is exactly 0, it is not in a quadrant but lies on the positive X axis; if it is exactly 90, it lies on the positive Y axis, If it is exactly 180, lies on the negative X axis; if it is exactly 270, it lies on the negative Y axis
2. KBC bank has decided to give special offers to their loyal customers. They are offering special interest rates to loans for the customers who opened an account in their bank before 2005. The details are given below.

|  |  |
| --- | --- |
| **Customer type** | **Loan interest rate** |
| Customers who opened account before 2005 | 10% |
| Customers who opened account after 2005 | 20% |
| Customers without an account in the bank | 25% |

Write a program that calculates for a customer, the money he/she will have to repay after a specified time period (amount + interest). Your program should get the following inputs from user

* Userid, principal and time period

The userid is 5 digit number in which last 4 digits give the year in which the customer opened an account. For eg: userid 221999 belongs to a customer who opened the account in 1999

**Your program should be able to determine the customer type from the user id.**

1. Write a C program that reads an ascii value from the user and print the corresponding character