**Basic Programs**

1. WAP to find the Area, Perimeter and Diagonal of a rectangle.
2. WAP to calculate the discount, if a customer purchases a Laptop and a Printer.
   1. On Laptop: Discount = 20%
   2. On printer: Discount = 15%
3. WAP to accept the number of days and display the result after converting it into number of years, number of months and the remaining number of days.
4. WAP with name Trigonometry and its basic data members to calculate the value of the given expression.

(Tan A – Tan B) / (1+ tan A \* Tan B)

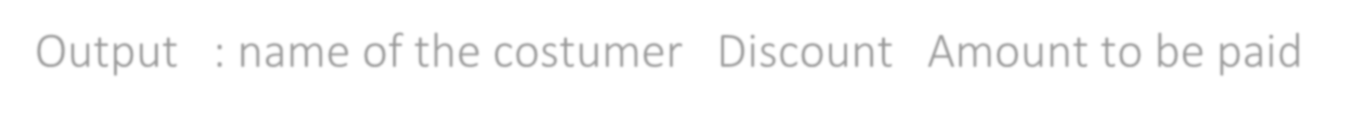
Hint: radian = (22.0 / (7.0\*180))/degree

1. A shopkeeper offers 30% discount on purchasing articles whereas the other shopkeeper offers two successive discount 20% and 10% for purchasing the same articles. WAP to compute and display which is a better offer for a customer.
2. WAP to enter three angles of a triangle and check whether a triangle is possible or not. If possible then display whether an Acute-Angled, A Right Angled, or an Obtuse-Angled Triangle otherwise, display “Triangle is not possible.”

**Decision Control (IF)**

1.} write a program for a mart to compute the discount according to the given conditions and display the output as per given format

|  |  |
| --- | --- |
| List price | Rate of discount |
| Up to Rs 5000 | No discount |
| From Rs 5001-10,000 | 10% on the list price |
| From Rs 10,001-Rs15,000 | 15% on the list price |
| From Rs 15,001 | 20% on the list price |



Output : name of the costumer Discount Amount to be paid

s



|  |  |
| --- | --- |
| Calls made | Rate |
| Up to 100 calls | No charge |
| For the next 100 calls | 1 Rs/- per calls |
| For the next 200 calls | 2 Rs/- per calls |
| More than 400 calls | 3 Rs/- per calls |

W rite the program to compute the monthly bill to be paid according to the given conditions and display the output as per given format

However, every costumer has to pay Rs180/month as monthly rent for availing the service.

Output: name of the costumer calls made amount to be paid



Write a program to compute the tax according to the given condition and display the output as per given format

|  |  |
| --- | --- |
| Total annual taxable amount | Tax rates |
| Up to 1,00,000 | No tax |
| From 1,00,001 to 1,50,000 | 10%of the income exceeding 1,00,000 |
| From 1,50,001 to 2,50,000 | 5000+20% of the income exceeding  1,50,000 |
| above 2,50,000 | 25,000+30%of the income exceeding  2,50,000 |

Output: pan number name tax-income tax



Write a program to compute the fine according to the given conditions and display the fine to be paid

|  |  |
| --- | --- |
| Days | Fine |
| Firs seven days | 25 paise per day |
| Eight to fifteen days | 40 paise per day |
| Sixteen to thirty days | 60 paise per day |
| More than thirty days | 80 paise per day |



Trust bank interest charges for the vehicle loan are given below:

|  |  |
| --- | --- |
| Number of years | Rate of interest |
| Up to 5 years | 15% |
| More than 5 and up to 10 years | 12% |
| Above 10 years | 10% |
|  |  |

Int time : time for which loan is sanctioned

Double principle : amount sanctioned

Double rate : Rate of interest

Double interest : To store the interest

Interest : ( principle\*rate\*time)/100

Amount : Principle + interest

Double amt : Amount to pay after given time

6) A Hotel is giving a seasonal discount on the total amount to be paid by the person staying. The charges for different rooms are given below:

|  |  |
| --- | --- |
| Category | Tariff |
| Semi Deluxe Room | Rs 2500/- per day |
| Deluxe Room | Rs 3500/- per day |
| Super Deluxe Room | Rs 5000/- per day |

The discount will be given as per the following criteria:

|  |  |
| --- | --- |
| No of days stayed | Discount |
| Up to 3 days | 10% |
| More than 3 days and up to 5 days | 15% |
| More than 5 days and up to 10 days | 20% |
| More than 10 days | 30% |

WAP to input name of guest, category (‘S’ for Semi-Deluxe, ‘D’ for Deluxe, ‘SD’ for Super Deluxe) and number of days stayed in a hotel. Calculated the discount and total amount to be paid. Print the bill along with the name.

**Menu Driven/ Switch Case Program**

1. WAP to calculate:
2. Area of Circle
3. Area of Square
4. Area of Rectangle
5. WAP for Traffic Light.
   1. Red – Stop
   2. Yellow – Ready
   3. Green – Stop
6. The relative velocity of two Trains travelling in opposite directions is calculated by adding their velocities. In case, the trains are travelling in the same direction, the relative velocity is the difference between their velocities.

WAP to input the velocities and length of the trains and calculate the relative velocities and the time taken to cross each other by indicating 1 for same direction and 2 for opposite direction.

1. A Promoter cum Developer announces a special bonanza for early booking of flats for their customers as per the tariff given below:

|  |  |  |
| --- | --- | --- |
| Category | Discount on the price | Discount on Development charge |
| Ground Floor | 10% | 8% |
| First Floor | 2.0% | 1.0% |
| Second Floor | 5% | 5% |
| Third Floor | 7.5% | 10% |

WAP to input price and category: ‘0’ (Zero) for ground floor, ‘1’ for first floor, ‘2’ for second floor and ‘3’ for third floor. Calculate and display the total discount, price of the flat after getting discount.

**Iteration Control**

1. WAP to find the **factorial** of a given number.
2. WAP to check whether a given number is **Prime** or Not.
3. WAP to accept two numbers and find the Greatest Common Divisor (**GCD**).
4. In a **game of tossing** a coin, you want to know the number of times you get ‘Head’ and ‘Tail’ Respectively. You keep the record as ‘1’ for getting head and ‘0’ for ‘Tail’. WAP to perform the above task. Suppose you have tossed a coin for 20 times in this game.
5. WAP to display the **Fibonacci** Series.
6. WAP to check entered number is Nivin Number or not.

Eg: 126

1+2+6=9

126 is divisible by 9

1. WAP to check entered number is **Happy Number** or not.

Take a positive number and replace the number by sum of squares of its digit. Repeat the process until the number equals 1.

Eg: 31

32+12=10 => 12 +0=1

1. WAP to find the smallest digit of an integer.

Input: 63527

Output: 2

1. WAP to check entered number is **Neon Number** or not.

Eg: Input: 9

9\*9=81

8+1=9

1. is Neon Number
2. WAP to check entered number is **palindrom Number** or not.
3. WAP to check entered number is **Armstrong Number** or not.
4. WAP to check entered number is **Automorphic Number** or not.

Input: 25

25\* 25=625

625 is contained 25 int the last

25 is Automorphic number.

1. WAP to check entered number is **Special Number** or not.

Input: 145

1!+4!+5! = 1+24+120 = 145

1. A game of throwing dice is played between two players in which each player throws a dice unless his score adds up to 20. A player is declared ‘WINNER’ with the minimum number of throws. WAP to perform above task.
2. WAP to check entered number is **DUCK Number** or not.

Duck number is another special positive non-zero number that contains zero in it. The digit zero should not be presented at the starting of the number. Zero can be present at any of the positions except the beginning of the number.

1. WAP to print series of prime number between 1 to 100.

**Function**

Write any 5 program using function from above List.

**Recursion**

1. WAP to find value of given term in Fibonacci series.
2. WAP to print number from 10 to 1.
3. WAP to print factorial of a given number.
4. WAP to check entered number is palindrome Number or not.
5. WAP to print the sum of digit of any given number.

**ARRAY**

1. WAP for Bubble Sort.
2. WAP for Selection Sort
3. WAP for Linear Search.
4. WAP for Binary Search.
5. WAP to find the maximum and minimum element of the array.
6. WAP to accept 10 different city names in an Array. Arrange them in ascending order by using “Bubble Sort” and display them.

Eg:

Input: Delhi, Bangalore, Agra, Mumbai, Calcutta

Output: Agra, Bangalore, Calcutta, Delhi, Mumbai

1. WAP to accept 10 states