Assignment - 1

1] Write a program to calculate the percentage of student based on marks of any 5 subject

I] Start

II] take the 5 subject marks

Sub.1 = 70
Sub.2 = 50
sub.3 = 85
sub.4 = 90
sub.5 = 80

III] calculate obtain marks

obt_marks = sub1 + sub2 + sub3 + sub4 + sub5
= 70 + 50 + 85 + 90 + 80
=

IV] calculate percentage

$$per = \frac{obt\_marks}{total\ marks} * 100$$

$$= \frac{375}{500} * 100$$

$$= 75\%$$

V] Display result

percentage of 5 marks of student is 75%.

VI] Stop

2] Write a program to calculate area of rectangle based on length and breadth.

I] Start

II] Take a value of length & breadth
length = 15
breadth = 7

III] calculate area of rectangle
Area of rectangle = length * breadth
= 15 * 7
= 105

IV] Display result
∴ Area of rectangle = 105

V] Stop.

3] Program to find quotient and remainder of two numbers.

I] Start

II] take a two value divisor & divided
divisior = 6
Dividend = 60

III] calculate the quotient

Q = divided // divisor
= ~~50 // 6~~ 50 // 6
= 8

iv] calculate the remainder
R = divided % divisor
= 50 % 6
= 2

v] Display result :
Quotient = 8
Remainder = 2

vi] Stop.

4] Write a program to enter P, T, R and calculate simple Interest.

I] Start

II] Take a value P, R & T
principale amount = 10,000
Rate of interest per year = 7%
Time (years) = 2

III] calculate simple interest

$$SI = \frac{P * R * T}{100}$$

$= \frac{10000 * 7 * 2}{100}$

$= 1400$

iv] Display result

∴ simple interest is 1400

v] Stop

5] Write a program to enter P, T, R and calculate compound Interest.

I] start

II] Take a value P, R & T

P = 100,000

R = 15 %.

T = 3

III] calculate the compound interest

$CI = p * \left(1 + \frac{R}{100}\right)^T - p$

$= 100,000 * \left(1 + \frac{15}{100}\right)^3 - 100000$

$= 52.087.50$

IV] Display result

∴ compound Interest is 52.087.50

V] Stop.

6] Write a program to input two angles from user and find third angle of the triangle.

I] Start

II] Take first angle = 60°, second angle = 80°

III] Calculate third angle:

third_angle = 180° - (angle1 + angle2)
= 180 - (60 + 80)
= 180 - 140
= 40°

IV] Display Result

The third angle of the triangle is 40°.

V] stop.

7] program to find the roots of a quadratic Equation.

I] start

II] values of coefficients a, b and c.

$a=1$, $b=-3$, $c=2$

III] calculate the discriminant:

~~$ax^2+bx+c=0$~~

$D = b^2 - 4ac$

$D = (-3)^2 - 4(1)(2) = 9-8 = 1$

$x_1 = \frac{-b+\sqrt{D}}{2a}$, $x_2 = \frac{-b-\sqrt{D}}{2a}$

$x_1 = \frac{-(-3)+\sqrt{1}}{2(1)} = \frac{3+1}{2} = \frac{4}{2} = 2$

$x_2 = \frac{-(-3)-\sqrt{1}}{2(1)} = \frac{3-1}{2} = \frac{2}{2} = 1$

$x_1 = 2$, $x_2 = 1$

IV) stop.

8) write a program to enter base and hight of a triangle and find its area.

I] start

II] The base of the triangle → base = 10cm

III] The hight of the triangle → height = 6 cm

IV] calculate area:

$$\text{Area} = \frac{1}{2} \times \text{base} \times \text{height}$$

$$\text{Area} = \frac{1}{2} \times 10 \times 6$$

$$\text{Area} = 30\ cm^2$$

V] Stop

9] write a program to convert days into years, weeks and days.

I] Start.

II] input the total number of days (n).

III] calculate years = n // 365.

IV] calculate Remaining days = n % 365.

V] calculate weeks = remaining // 7.

VI] calculate days = remaining % 7.

VII) Display years, weeks, and days.

n = 1329 days

- years = 1329 // 365
  years = 3
- Remaining days = 1329 % 365
  = 234
- week = 234 // 7
  week = 33
- Days = 234 % 7
  Days = 3

VIII) Stop.

10) write a program to calculate area of an equilateral triangle.

I) Start

II) side length a.

III) calculate Area:

$$\text{Area} = \frac{\sqrt{3}}{4} \times a^2$$

$$= \frac{\sqrt{3}}{4} \times (6^2)$$

$$= \frac{\sqrt{3}}{4} \times 36$$

$$= 9\sqrt{3}$$

$$\approx 15.59 \text{ cm}^2$$

IV] For side 6, area $\approx 15.59 \text{ cm}^2$

11] Find the area and circumference of circle.

I] Start

II] radius r.

III] calculate area using formula:

- Area $= \pi r^2$

$$\pi r^2 = 3.1416 \times 7^2$$

$$\text{Area} = 153.94 \text{ cm}^2$$

- circumference $= 2\pi r$

$$2\pi r = 2 \times 3.1416 \times 7$$

$$= 43.98 \text{ cm.}$$

V] Stop.

12] Find the volume of sphere.

I] Start

II] radius r.

III] calculate ~~volume~~ radius:

$$\text{volume} = \frac{4}{3}\pi r^3$$

$$= \frac{500}{3}\pi$$

$$= 523.6 \text{ cm}^3$$

IV] For radius = 5 cm $\rightarrow$ 523.6 cm^3

V] Stop.