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(8)
Rahul
18/8/25

Expt. No. 1 D Page No. 2 Date 06/08/25

PROGRAMMING IN C LAB :-

EXPERIMENT - 1

1) Write a C programme to print "Hello World"

:-

```
#include <stdio.h>
int main(){

printf("HELLO WORLD");

return 0;
}
```

RESULT :- HELLO WORLD

Red Pen

Teacher's Signature _____

Expt. No. 1 2) Page No. 3 Date 06/08/25

2) Write a C program to Print the address in multiple lines.

:-

```
# include <stdio.h>
int main( ) {

printf ("I am Sayra Sood.\n");
printf ("I live in Moga,\n");
printf ("Punjab, India.\n");

return 0;
}
```

RESULT :- I am Sayra Sood.
I live in Moga,
Punjab, India.

Teacher's Signature

Expt. No. 13) Page No. 4 Date 06/08/25

3) Write a program that prompts the user to enter their name and age.

:-

```
#include <stdio.h>
int main( ) {

    char name [50]
    int age;

    printf ("Enter your name: ");
    fgets (*name, sizeof (name), stdin);

    printf ("Enter your age: ");
    scanf ("%d", &age);

    printf ("\nHello, %s", name);
    printf ("You are %d years old.\n", age);

    return 0;
    }
```

RESULT :- Enter your name : Sayra
Enter your age : 18

Hello, Sayra
You are 18 years old.

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Expt. No. 14) Page No. 5 Date 06/08/25

4) write a C program to add two numbers, take no from user

:-

```
#include <stdio.h>
int main( ) {
    int num1, num2, sum;

    printf("enter the first number: ");
    scanf("%d", &num1);

    printf("enter the second number: ");
    scanf("%d", &num2);

    sum = num1 + num2;
    printf("the sum of %d and %d is %d \n", num1, num2, sum

    return 0;
}
```

RESULT :- enter the first number : 5
enter the second number : 6

the sum of 5 and 6 is 11

Teacher's Signature

Expt. No. 2 1) Page No. 6 Date 06/08/25

EXPERIMENT-2

1) WAP a C program to calculate the area and perimeter of a rectangle based length and width

:-

```
#include <Stdio.h>
int main( ) {
 int length, width;
 int area, perimeter;

 printf("enter length");
 Scanf ("%d", &length);

 printf("enter width");
 Scanf ("%d,"& width);

 area = length * width;
 perimeter = 2*(length + width);
 printf("the area is %d and perimeter is %d", area,
                                        perimeter);

 return 0;
}
```

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Expt. No. 2D Page No. 7 Date 06/03/25

RESULT:- enter length 40
enter width 50

the area is 2000 and perimeter is 180

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Expt. No. 2 2) Page No. 8 Date 06/08/25

2) WAP a C program to Convert temperature from Celsius to Fahrenheit using the formula.

$F = (C * 9/5) + 32$

:-

```
include <stdio.h>
int main() {
    float celsius, fahrenheit;

    printf("Enter temperature in Celsius: ");
    scanf("%f", &celsius);

    fahrenheit = (celsius * 9/5) + 32;

    printf("%.2f celsius = %.2f Fahrenheit \n", celsius,
                                        fahrenheit);
    return 0;
}
```

RESULT :- Enter the temperature in celsius: 35

35.00 celsius = 95.00 Fahrenheit

Teacher's Signature

Expt. No. 11 i) Page No. 9 Date

EXPERIMENT - 11

1) Write a program to apply bitwise OR, AND and NOT operators on bit level.

:-

```
#include <stdio.h>
int main() {
int a=3;
int b=5;

printf("bitwise a and b is %d\n", a&b);
printf("bitwise a or b is %d\n", a|b);
printf("bitwise a not b is %d\n", ~a);

return 0;
}
```

RESULT :- Bitwise a and b is 1
Bitwise a or b is 7
Bitwise a not b is -4

Teacher's Signature

Expt. No. 11 2) Page No. 10 Date

2) write a program to apply leftshift and rightshift operator.

:-
```
include<stdio.h>
int main() {
  int a=3;
  int b=5;

  printf("left shift of a %d\n", a<<1);
  printf("left shift of a %d\n", a<<2);
  printf("right shift of b %d\n", b>>1);
  printf("right shift of b %d\n", b>>2);

  return 0;
}
```

RESULT :- left shift of a 6
left shift of a 12
~~left~~ right shift of b 2
right shift of b 1

Teacher's Signature

Expt. No. 3.1 5) Page No. 11 Date

EXPERIMENT - 3.1

5) WAP using ternary operator, the user should input the length and breadth of rectangle, one has to find out which rectangle has the highest perimeter. The minimum no. of rectangles should be 3

:-

```
#include <stdio.h>
int main() {
float l1, b1, l2, b2, l3, b3;
float p1, p2, p3, max;

printf("enter length and breadth of rectangle 1; ");
scanf("%f %f", &l1, &b1);
printf("enter length and breadth of rectangle 2; ");
scanf("%f %f", &l2, &b2);
printf("enter length and breadth of rectangle 3; ");
scanf("%f %f", &l3, &b3);

p1 = 2*(l1+b1);
p2 = 2*(l2+b2);
p3 = 2*(l3+b3);

max = (p1>b2)?((p1>p3)?p1:p3):((p2>p3)?p2:p3);
```

Teacher's Signature

```
printf("highest perimeter is : %2f\n", max);

return 0;
}
```

RESULT - enter length and breadth of rectangle 1; 10
20
enter length and breadth of rectangle 2; 40
100
enter length and breadth of rectangle 3; 30
90
Highest perimeter is : 280.00

Expt. No. 3.1 2) Page No. 13 Date

2) WAP to compute the BMI index of person and print the BMI values as per the following ranges. You can use the following formula to compute BMI = weight(kg) / Height(MTS) * Height(MTS)

```
#include <stdio.h>
int main() {
    float h, w;
    printf("enter your height:");
    scanf("%f", &h);
    printf("enter your weight:");
    scanf("%f", &w);
    float BMI;
    BMI = w/(h*h);
    printf("Your BMI is: %f", BMI);
    if (BMI<15) {
        printf("starvation");
    }
    else if (BMI>=15.1 && BMI<17.5) {
        printf("Anorexic");
    }
    else if (BMI>=17.6 && BMI<18.5) {
        printf("underweight");
    }
    else if (BMI>=25 && BMI<25.9) {
```

Teacher's Signature

```
else if (BMI>=18.6 && BMI<24.9){
    printf("Ideal ");
}
else if (BMI>=25 && BMI<25.9){
    printf ("overweight ");
}
  else{
    printf ("obese ");
}
  return 0;
}
```

RESULT:- enter your height:-165 metres
enter your weight:- 80kg
Your BMI is: 29.38

Expt. No. 3.1 3) Page No. 15 Date

3) WAP to check if 3 points (x_1, y_1), (x_2, y_2) and (x_3, y_3) are collinear or not

```
#include <stdio.h>
int main(){
  int x1, y1, x2, y2, x3, y3
  int area;

  printf("enter cordinates of first point (x1 y1):");
  scanf("%d %d", &x1, &y1);

  printf enter cordinates of second point (x2 y2):");
  scanf (%d %d", &x2, &y2);

  printf (enter cordinates of third point (x3 y3):");
  scanf %d %d, &x3, &y3);

  area = x1*(y2-y3) + x2*(y3-y1) + x3*(y1-y2);

  if (area == 0)
    printf("\n the points are collinear.\n");
  else
    printf("\n the points are not collinear.\n");
  return 0;
}
```

Teacher's Signature

Expt. No. 3-1 3) Page No. 16 Date

RESULT - 1) collinear points

Enter cordinates of first point $(x_1\ y_1)$: 1 1
enter coordinates of second point $(x_2\ y_2)$: 2 2
Enter coordinates of third point $(x_3\ y_3)$: 3 3

the points are collinear

2) Not Collinear

Enter cordinates of first point $(x_1\ y_1)$: 0 0
Enter cordinates of second point $(x_2\ y_2)$: 2 0
Enter coordinates of third point $(x_3\ y_3)$: 4 3

the points are not collinear

Teacher's Signature

Expt. No. 3.1 1) Page No. 17 Date

1) WAP to take check if the triangle is valid or not. If the validity is established, do check if the triangle is isoceles, equilateral, right angle or scalene. Take sides of triangle as input from user.

```
#include <stdio.h>
int main() {
int S1, S2, S3;
printf("enter your first side: ");
scanf("%d", &S1);
printf ("enter your Second side : ");
Scanf ("%d", &S2);
printf ("enter your third side :");
Scanf ("%d", &S3);
if (S1+S2>S3 && S2+S3>S1 && S3+S1>S2) {
printf("This triangle exists. \n");
}
else {
printf("Triangle is invalid.");
}
if (S1==S2 && S2==S3 && S3==S1) {
printf("It is an equilateral triangle");
}
```

Teacher's Signature

```
else if (s1 == s2 || s1 == s3 || s2 == s3) {
printf("It is an isoceles triangle");
}
else if ((s1+s2)^2 == s3^2 || (s3+s2)^2 == s1^2
                                || (s1+s3)^2 == s2^2){
printf("It is a right angled triangle");

return 0;
}
```

RESULT :- Enter your first side: 12
Enter your second side: 9
Enter your third side: 6
This triangle exists.
It is a right angled triangle

Teacher's Signature

Expt. No. 3.1 4) Page No. 19 Date

4) Acc to gregorian calendar, it was Monday on the date 01/01/01. If any year is input through keyboard write a program to find out what is the day on 1Jan. of this year

```
#include <stdio.h>
int main () {
printf ("Enter year");
Scanf ("%d", &year);

for(int y=1; y<year; y++){
   if (isleap (y))
      days += 366;
   else
      days += 365;
}
int day = days % 7;
   char[] = {"Mon", "Tue", "Wed", Thurs", "Fri",
                        "Sat", "Sun" };
printf("1st January of year %d is %s\n", year, week,
                              day [day index]);
   return 0;
}
```

Teacher's Signature

Output:- Enter the year - 2025

1st January of year 2025 is wednesday

Expt. No. 3.2 1) Page No. 20 Date

EXPERIMENT - 3.2

1) WAP to enter numbers till the user wants. At the end, it should display the count of +ve, -ve, & entered

```
#include <stdio.h>
int main() {
int num, positive=0, negative=0, zero=0;
char choice='y';
while (choice=='y' || choice=='Y') {
printf("Enter a number: ");
scanf("%d", &num);
if (num>0)
positive++;
else if (num<0)
negative++;
else
zero++;
printf("Do you want to enter another number? (Y/N): ");
scanf("%c", &choice);
}
printf("\nTotal +ve numbers: %d\n", positive);
printf("\nTotal -ve numbers: %d\n", negative);
printf("Total zeroes: %d\n", zero);
return 0;
}
```

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Output - Enter a number = 5
Do you want to enter another no? (y/n): y
Enter number : -2
Do you want to enter another no? (y/n): n

Count of positive number = 1
Count of negative number = 1
Count of zeroes = 0

Expt. No. 3.2 2) Page No. 21 Date

1) WAP to print the multiplication table of the number entered by the user. It should be in the correct formatting. Num * 1 = num

```
# include <Stdio.h>
int main( ) {
int n, i;
printf ("Enter the value of n \n");
scanf ("%d", &n);
for (int i=1; i<=10 ; i++)
{
printf ("%d*%d= %d \n", n, i, n*i);
}
return 0;
}
```

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Output - enter value of n : 5

5 * 1 = 5

5 * 2 = 10

5 * 3 = 15

5 * 4 = 20

5 * 5 = 25

5 * 6 = 30

5 * 7 = 35

5 * 8 = 40

5 * 9 = 45

5 * 10 = 50

Expt. No. 3.2 3) Page No. 23 Date

3) WAP to generate the following set of output:-

a. 1
2 3
4 5 6

```
#include <stdio.h>
int main() {
int i, j, num = 1;
for (i=1; i<=3; i++){
    for (j=1; j<=i; j++){
     printf ("%d ", num);
    num++;
}
printf("\n");
}
return 0;
}
```

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