



**PRATICAL FILE
OF
PROGRAMMING IN C
COURSE CODE - CSEG1041
SCHOOL OF COMPUTER SCIENCE**

SUBMITTED BY: SUBMITTED TO:

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COURSE: BSC CS

SEMSTER: 01

BATCH=01

ACADEMIC YEAR=2025-2026

/EXPERIMENT:02 OPERSTORS

//1. WAP a C program to calculate the area and perimeter of a rectangle based on its length and width.

```
#include <stdio.h>
#include <math.h> // for pow() function
int main() {
printf("Name - Shagun\n");
printf("SAP ID:590025458\n");
printf("Course - bscCS\n");
printf("batch-01\n");
printf("\n-----\n");
float length, width, area, perimeter;
printf("Enter length of rectangle: ");
scanf("%f", &length);
printf("Enter width of rectangle: ");
scanf("%f", &width);
area = length * width;
perimeter = 2 * (length + width);
printf("Area of rectangle = %.2f\n", area);
printf("Perimeter of rectangle = %.2f\n", perimeter);
return 0;
}
```

Output:

```
Name - Shagun
SAP ID:590025458
Course - bscCS
batch-01

-----
Enter length of rectangle: 23
Enter width of rectangle: 31
Area of rectangle = 713.00
Perimeter of rectangle = 108.00

-----
Process exited after 10.7 seconds with return value 0
Press any key to continue . . . |
```

//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() {
    printf("Name - Shgun\n");
    printf("SAP ID:590025458\n");
    printf("Course - bscCS\n");
    printf("batch-01\n");
    printf("\n-----\n");
    float celsius, fahrenheit;
    printf("Enter temperature in Celsius: ");
    scanf("%f", &celsius);
    fahrenheit = (celsius * 9 / 5) + 32;
    printf("Temperature in Fahrenheit = %.2f\n", fahrenheit);
    return 0;
}
```

OUTPUT:

```
Name - Shgun
SAP ID:590025458
Course - bscCS
batch-01

-----
Enter temperature in Celsius: 34
Temperature in Fahrenheit = 93.20

-----
Process exited after 8.035 seconds with return value 0
Press any key to continue . . . |
```

```
//3. Program to Calculate Compound Interest
#include <stdio.h>
#include <math.h> // for pow() function
int main() {
printf("Name - Shagun\n");
printf("SAP ID:590025458\n");
printf("Course - bscCS\n");
printf("batch-01\n");
printf("\n-----\n");
double principal, rate, time, compoundInterest, amount;
printf("Enter the Principal amount: ");
scanf("%lf", &principal);
printf("Enter the Rate of interest (in %%): ");
scanf("%lf", &rate);
printf("Enter the Time (in years): ");
scanf("%lf", &time);
amount = principal * pow((1 + rate / 100), time);
compoundInterest = amount - principal;
printf("Compound Interest = %.2lf\n", compoundInterest);
printf("Total Amount = %.2lf\n", amount);
return 0;
}
```

OUTPUT:

```
Name-Shagun
SAP ID:590028657
Course - bscCS
batch-01

-----
Enter the Principal amount: 67
Enter the Rate of interest (in %): 23
Enter the Time (in years): 3
Compound Interest = 57.68
Total Amount = 124.68

-----
Process exited after 19.2 seconds with return value 0
Press any key to continue . . . |
```

//4. Program to Find Roots of a Quadratic Equation

```
#include <stdio.h>
#include <math.h>
int main() {
    printf("Name - Shagun\n");
    printf("SAP ID:590025458\n");
    printf(" Course - bscCS\n");
    printf("batch-01\n");
    printf("\n-----\n");
    float a, b, c, discriminant, root1, root2, realPart, imagPart;
    printf("Enter coefficients a, b and c: ");
    scanf("%f %f %f", &a, &b, &c);
    discriminant = b * b - 4 * a * c;
    if (discriminant > 0) {
        root1 = (-b + sqrt(discriminant)) / (2 * a);
        root2 = (-b - sqrt(discriminant)) / (2 * a);
        printf("Roots are real and different.\n");
        printf("Root1 = %.2f and Root2 = %.2f\n", root1, root2);
    }
    else if (discriminant == 0) {
        root1 = -b / (2 * a);
        printf("Roots are real and equal.\n");
        printf("Root1 = Root2 = %.2f\n", root1);
    }
    else {
        realPart = -b / (2 * a);
        imagPart = sqrt(-discriminant) / (2 * a);
        printf("Roots are complex and different.\n");
        printf("Root1 = %.2f + %.2fi and Root2 = %.2f - %.2fi\n",
            realPart, imagPart, realPart, imagPart);
    }
    return 0;
}
```

output

```
Name - Shagun  
SAP ID:590025458  
Course - bscCS  
batch-01
```

```
-----  
Enter coefficients a, b and c: 6 8 7  
Roots are complex and different.  
Root1 = -0.67 + 0.85i and Root2 = -0.67 - 0.85i
```

```
-----  
Process exited after 10.36 seconds with return value 0  
Press any key to continue . . . |
```