Practical File
Of
Programming in C

Course Code: CSEG1041
School of Computer Science

Submitted By: Submitted To:
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Course:B.Sc(Computer Science)
Batch:2025-28
Academic Year: 2025-26

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

#include <stdio.h>

int main(int argc, const char * argv[]) {

    float length,width,area,perimeter;
    printf("Enter length of the rectangle:");
    scanf("%f", &length);

    printf("Enter width of rectangle:");
    scanf("%f",&width);

    area= length*width;
    perimeter= 2*(length+width);

    printf("Area=%.2f\n",area);
    printf("Perimeter=%.2f\n",perimeter);
    return 0;
}
```

Output:

```
Enter length of the rectangle:5
Enter width of rectangle:8
Area=40.00
Perimeter=26.00
Program ended with exit code: 0
```

```c
//2. WAP a program in C to convert temperature from celsius to
Fahrenheit

#include <stdio.h>

int main() {
    float celsius, Fahrenheit;

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

    Fahrenheit = (celsius * 9.0 / 5.0) + 32.0;

    printf("%.2f Celsius = %.2f Fahrenheit\n", celsius,
Fahrenheit);

    return 0;
}
```

Output:

```
Enter temperature in Celsius: 7
7.00 Celsius = 44.60 Fahrenheit
Program ended with exit code: 0
```

```c
//3. Write a program to calculate compound interest

#include <stdio.h>
#include <math.h>
int main() {
    double principal, rate, time, ci;
    printf("Enter Principal, Rate and Time: ");
    scanf("%lf %lf %lf", &principal, &rate, &time);

    ci = principal * (pow((1 + rate / 100), time) - 1);
    printf("Compound Interest = %.2lf\n", ci);

    return 0;
}
```

Output:

```
Enter Principal, Rate and Time: 100
10
2
Compound Interest = 21.00
Program ended with exit code: 0
```

```c
//4. Write a program to find the square roots of the quadratic
equations

#include <stdio.h>
#include <math.h>

int main(void) {
    double a, b, c, discriminant, realPart, imagPart, x1, x2;

    printf("Enter the values for a, b, c: ");
    scanf("%lf %lf %lf", &a, &b, &c);

    if (a == 0) {
        printf("Not a quadratic equation.\n");
        return 0;
    }

    discriminant = (b * b) - (4 * a * c);

    if (discriminant > 0) {
        // Two real and distinct roots
        x1 = (-b + sqrt(discriminant)) / (2 * a);
        x2 = (-b - sqrt(discriminant)) / (2 * a);
        printf("Roots are real and distinct:\n");
        printf("Root1 = %.2lf\n", x1);
        printf("Root2 = %.2lf\n", x2);
    }
    else if (discriminant == 0) {
        // Real and equal roots
        x1 = -b / (2 * a);
        printf("Roots are real and equal:\n");
        printf("Root1 = Root2 = %.2lf\n", x1);
    }
    else {
        // Complex roots
        realPart = -b / (2 * a);
        imagPart = sqrt(-discriminant) / (2 * a);
        printf("Roots are complex:\n");
        printf("Root1 = %.2lf + %.2lfi\n", realPart, imagPart);
        printf("Root2 = %.2lf - %.2lfi\n", realPart, imagPart);
    }

    return 0;
}
```

```
Enter the values for a, b, c: 1
2
6
Roots are complex:
Root1 = -1.00 + 2.24i
Root2 = -1.00 - 2.24i
Program ended with exit code: 0
```