```c
#include <stdio.h>

int main()
{
    int choice;   // menu choice

    while (1)     // infinite loop to repeat menu until exit
    {
        printf("\n==== MAIN MENU ====\n");
        printf("1. Road Curve Design – Stopping Sight Distance (SSD)\n");
        printf("2. Soil Bearing Capacity Checker\n");
        printf("3. Water Tank Volume Calculator\n");
        printf("4. Exit\n");
        printf("Enter your choice: ");
        scanf("%d", &choice);

        switch (choice)
        {
            // -------------------- SSD PROGRAM --------------------
            case 1:
            {
                float v, t, f, SSD;

                printf("\n=== Road Curve Design – Stopping Sight Distance (SSD) ===\n");
                printf("Enter speed of vehicle (km/hr): ");
                scanf("%f", &v);
                printf("Enter reaction time (sec): ");
                scanf("%f", &t);
                printf("Enter coefficient of friction: ");
                scanf("%f", &f);

                SSD = (v * t) + ((v * v) / (254 * f));

                printf("\nStopping Sight Distance (SSD) = %.2f meters\n", SSD);
                break;
            }

            // -------------------- SOIL BEARING CAPACITY PROGRAM --------------------
            case 2:
            {
                float load, area, SBC, stress;

                printf("\n=== Soil Bearing Capacity Checker ===\n");
                printf("Enter load on foundation (kN): ");
                scanf("%f", &load);
                printf("Enter area of foundation (sq.m): ");
                scanf("%f", &area);
                printf("Enter safe bearing capacity of soil (kN/sq.m): ");
```

```
    scanf("%f", &SBC);

    stress = load / area;

    printf("\nApplied Stress = %.2f kN/m2\n", stress);

    if (stress <= SBC)
        printf("Result: SAFE — Soil can bear the load.\n");
    else
        printf("Result: NOT SAFE — Increase foundation size.\n");
    break;
}

// -------------------- WATER TANK VOLUME PROGRAM --------------------
case 3:
{
    int tankType;
    float length, width, height, radius, volume;

    printf("\n=== Water Tank Volume Calculator ===\n");
    printf("1. Rectangular Tank\n");
    printf("2. Cylindrical Tank\n");
    printf("Enter type: ");
    scanf("%d", &tankType);

    if (tankType == 1) {
        printf("Enter length (m): ");
        scanf("%f", &length);
        printf("Enter width (m): ");
        scanf("%f", &width);
        printf("Enter height (m): ");
        scanf("%f", &height);

        volume = length * width * height;

        printf("\nVolume of Rectangular Tank = %.2f cubic meters\n", volume);
    }
    else if (tankType == 2) {
        printf("Enter radius (m): ");
        scanf("%f", &radius);
        printf("Enter height (m): ");
        scanf("%f", &height);

        volume = 3.1416 * radius * radius * height;

        printf("\nVolume of Cylindrical Tank = %.2f cubic meters\n", volume);
    }
    else {
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                printf("Invalid tank type!\n");
            }
            break;
        }

        // -------------------- EXIT --------------------
        case 4:
            printf("\nExiting program...\n");
            return 0;  // stop entire program

        default:
            printf("\nInvalid choice! Try again.\n");
    }

    printf("\nPress Enter to return to Main Menu...");
    getchar(); // to consume leftover newline
    getchar(); // wait for user
  }

  return 0;
}
```

OUTPUT:

```
==== MAIN MENU ====
1. Road Curve Design – Stopping Sight Distance (SSD)
2. Soil Bearing Capacity Checker
3. Water Tank Volume Calculator
4. Exit
Enter your choice: 1

=== Road Curve Design – Stopping Sight Distance (SSD) ===
Enter speed of vehicle (km/hr): 80
Enter reaction time (sec): 5
Enter coefficient of friction: 10

Stopping Sight Distance (SSD) = 402.52 meters

Press Enter to return to Main Menu...

==== MAIN MENU ====
1. Road Curve Design – Stopping Sight Distance (SSD)
2. Soil Bearing Capacity Checker
3. Water Tank Volume Calculator
4. Exit
Enter your choice: 2
```

```
=== Soil Bearing Capacity Checker ===
Enter load on foundation (kN): 100
Enter area of foundation (sq.m): 9
Enter safe bearing capacity of soil (kN/sq.m): 5

Applied Stress = 11.11 kN/m2
Result: NOT SAFE — Increase foundation size.

Press Enter to return to Main Menu...

==== MAIN MENU ====
1. Road Curve Design – Stopping Sight Distance (SSD)
2. Soil Bearing Capacity Checker
3. Water Tank Volume Calculator
4. Exit
Enter your choice: 3

=== Water Tank Volume Calculator ===
1. Rectangular Tank
2. Cylindrical Tank
Enter type: 1
Enter length (m): 6
Enter width (m): 6
Enter height (m): 6

Volume of Rectangular Tank = 216.00 cubic meters

Press Enter to return to Main Menu...

==== MAIN MENU ====
1. Road Curve Design – Stopping Sight Distance (SSD)
2. Soil Bearing Capacity Checker
3. Water Tank Volume Calculator
4. Exit
Enter your choice: 3

=== Water Tank Volume Calculator ===
1. Rectangular Tank
2. Cylindrical Tank
Enter type: 2
Enter radius (m): 6
Enter height (m): 6

Volume of Cylindrical Tank = 678.59 cubic meters

Press Enter to return to Main Menu...

==== MAIN MENU ====
```

1. Road Curve Design – Stopping Sight Distance (SSD)
2. Soil Bearing Capacity Checker
3. Water Tank Volume Calculator
4. Exit
Enter your choice: 4

Exiting program…