

a. Develop a program about fundamental Data types C Programming. (i.e., int, float, and string types)

The screenshot shows a C code editor interface with a code area and an output area. The code area contains a main.c file with the following content:

```
1 #include <stdio.h>
2
3 int main() {
4     int age;
5     float height;
6     char gender;
7     char name[50]; // Name still needs array because it's a string
8     // Input age
9     printf("Enter your age: ");
10    scanf("%d", &age);
11    // Input height
12    printf("Enter your height in centimeters: ");
13    scanf("%f", &height);
14    // Input gender
15    printf("Enter your gender (M/F): ");
16    scanf(" %c", &gender); // Note the space before %c to ignore any leftover newline
17    // Input name
18    printf("Enter your name: ");
19    scanf("%s", name);
20    // Display all values
21    printf("\n--- Displaying your data ---\n");
22    printf("Name: %s\n", name);
23    printf("Age: %d\n", age);
24    printf("Height: %.2f cm\n", height);
25    printf("Gender: %c\n", gender);
26    return 0;
27 }
```

The output area shows the results of running the program:

```
Enter your age: 23
Enter your height in centimeters: 160
Enter your gender (M/F): F
Enter your name: Piyali Sen
```

b. Write a C program that calculates the Simple Interest and Compound Interest. The Principal, Amount, Rate of Interest and Time are entered through the keyboard.

The screenshot shows a C code editor interface with a code area and an output area. The code area contains a main.c file with the following content:

```
1 #include <stdio.h>
2 #include <math.h> // For pow() function used in compound interest
3
4 int main() {
5     float principal, rate, time;
6     float simpleInterest, compoundInterest;
7
8     // Input values from user
9     printf("Enter Principal amount: ");
10    scanf("%f", &principal);
11
12    printf("Enter Rate of Interest (in %%): ");
13    scanf("%f", &rate);
14
15    printf("Enter Time (in years): ");
16    scanf("%f", &time);
17
18    // Calculate Simple Interest
19    simpleInterest = (principal * rate * time) / 100;
20
21    // Calculate Compound Interest (compounded annually)
22    compoundInterest = principal * pow((1 + rate / 100), time) - principal;
23
24    // Display results
25    printf("\nSimple Interest = %.2f\n", simpleInterest);
26    printf("Compound Interest = %.2f\n", compoundInterest);
27
28    return 0;
29 }
```

The output area shows the results of running the program:

```
Enter Principal amount: 40000
Enter Rate of Interest (in %%): 10
Enter Time (in years): 2
Simple Interest = 8000.00
Compound Interest = 8400.00
== Code Execution Successful ==
```

a. Write a C program to find the greatest of three numbers.

The screenshot shows a code editor interface with a tab labeled "main.c". The code is a C program demonstrating various type conversions:

```
1 #include <stdio.h>
2
3 int main() {
4     // Implicit type conversion (automatic)
5     int a = 10;
6     float b = 3.5;
7     float sum;
8
9     sum = a + b; // int is automatically converted to float
10    printf("Sum (int + float) = %.2f\n", sum);
11
12    // Explicit type conversion (casting)
13    float c = 7.8;
14    int d;
15
16    d = (int)c; // float is explicitly converted to int
17    printf("Explicit conversion of float %.2f to int = %d\n", c, d);
18
19    // Integer division vs float division
20    int x = 5, y = 2;
21    printf("Integer division 5/2 = %d\n", x / y);
22    printf("Float division using casting 5/2 = %.2f\n", (float)x / y);
23
24    // Char to int conversion
25    char ch = 'A';
26    int asciiValue = ch; // char automatically converted to int
27    printf("ASCII value of '%c' = %d\n", ch, asciiValue);
28    return 0;
29 }
```

The "Run" button is highlighted in blue. The "Output" panel displays the execution results:

```
Sum (int + float) = 13.50
Explicit conversion of float 7.80 to int = 7
Integer division 5/2 = 2
Float division using casting 5/2 = 2.50
ASCII value of 'A' = 65

== Code Execution Successful ==
```