

## LAB 03 TASKS

**Question # 1: Write a program to take two float numbers then find remainder of them by using type casting in integer form.**

### Source Code:

```
1 #include <iostream>
2 using namespace std;
3
4 int main() {
5     float num1, num2;
6
7     // Input two float numbers
8     cout << "Enter the first float number: ";
9     cin >> num1;
10    cout << "Enter the second float number: ";
11    cin >> num2;
12
13    // Type casting to integer
14    int intNum1 = static_cast<int>(num1);
15    int intNum2 = static_cast<int>(num2);
16
17    // Display the result
18    cout << "Remainder of " << intNum1 << " % " << intNum2 << " is: " << intNum1%intNum2 << endl;
19
20    return 0;
21 }
```

### Output:

```
Enter the first float number: 9.8
Enter the second float number: 2.45
Remainder of 9 % 2 is: 1

-----
Process exited after 9.721 seconds with return value 0
Press any key to continue . . .
```

**Question # 2: Write a program to take input name, address and age from user, then display data on screen.**

### Source Code:

```
1 #include <iostream>
2 #include <string>
3 using namespace std;
4
5 int main() {
6     string name, address;
7     int age;
8
9     // Input name
10    cout << "Enter your name: ";
11    getline(cin, name);
12
13    // Input address
14    cout << "Enter your address: ";
15    getline(cin, address);
16    // Input age
17    cout << "Enter your age: ";
18    cin >> age;
19    // Display the data
20    cout << "\n--- User Information ---" << endl;
21    cout << "Name: " << name << endl;
22    cout << "Address: " << address << endl;
23    cout << "Age: " << age << endl;
24    return 0;
25 }
```

```
Enter your name: Abdul Hayy Khan
Enter your address: SFC Karachi
Enter your age: 17

--- User Information ---
Name: Abdul Hayy Khan
Address: SFC Karachi
Age: 17

-----
Process exited after 15.6 seconds with return value 0
Press any key to continue . . .
```

**Question # 3: Write a program to take input a character and display its ASCII code.**

### Source Code:

```
1 #include <iostream>
2 using namespace std;
3
4 int main() {
5     char character;
6
7     // Input character
8     cout << "Enter a character: ";
9     cin >> character;
10
11    // Display ASCII code
12    cout << "The ASCII code for '" << character << "' is: " << int(character) << endl;
13
14    return 0;
15 }
16
```

### Output:

```
Enter a character: A
The ASCII code for 'A' is: 65

-----
Process exited after 2.454 seconds with return value 0
Press any key to continue . . .
```

**Question # 4: Take an amount from user, interest rate and number of years from user let suppose 1000, 5% and 3. Find Interest amount for those years. (e.g. output for above values is 150)**

**Source Code:**

**Output:**

```
1 #include <iostream>
2 using namespace std;
3
4 int main() {
5     float principal, rate, years, interest;
6
7     // Input principal amount, interest rate, and number of years
8     cout << "Enter the principal amount: ";
9     cin >> principal;
10
11     cout << "Enter the interest rate (in %): ";
12     cin >> rate;
13
14     cout << "Enter the number of years: ";
15     cin >> years;
16
17     // Calculate interest
18     interest = (principal*rate*years)/100;
19
20     // Display the interest amount
21     cout << "The interest amount for " << years << " years is: " << interest << endl;
22
23     return 0;
24 }
25
```

```
Enter the principal amount: 1000
Enter the interest rate (in %): 5
Enter the number of years: 3
The interest amount for 3 years is: 150

Process exited after 34.84 seconds with return value 0
Press any key to continue . . .
```

**Question # 5: Write a program to take dividend and divisor. Then display the quotient and remainder.(e.g. 20 3. Quotient=6, Remainder=2)**

**Source Code:**

**Output:**

```
1 #include <iostream>
2 using namespace std;
3
4 int main() {
5     int dividend, divisor, quotient, remainder;
6
7     // Input dividend and divisor
8     cout << "Enter the dividend: ";
9     cin >> dividend;
10
11     cout << "Enter the divisor: ";
12     cin >> divisor;
13
14     // Calculate quotient and remainder
15     quotient = dividend / divisor;
16     remainder = dividend % divisor;
17
18     // Display the results
19     cout << "Quotient = " << quotient << endl;
20     cout << "Remainder = " << remainder << endl;
21
22     return 0;
23 }
24
```

```
Enter the base of the triangle: 9
Enter the height of the triangle: 5
The area of the triangle is: 22.5

Process exited after 12.5 seconds with return value 0
Press any key to continue . . .
```

**Question # 6: Write a program to take input base and height of triangle. Now calculate area by using formula  $\text{Area} = 1/2 \times \text{base} \times \text{height}$ .**

### Source Code:

### Output:

```
1 #include <iostream>
2 using namespace std;
3
4 int main() {
5     float base, height, area;
6
7     // Input base and height of the triangle
8     cout << "Enter the base of the triangle: ";
9     cin >> base;
10
11     cout << "Enter the height of the triangle: ";
12     cin >> height;
13
14     // Calculate area
15     area = 0.5*base*height;
16
17     // Display the area
18     cout << "The area of the triangle is: " << area << endl;
19
20     return 0;
21 }
22
```

```
Enter the base of the triangle: 9
Enter the height of the triangle: 5
The area of the triangle is: 22.5

-----
Process exited after 12.5 seconds with return value 0
Press any key to continue . . .
```

**Question # 7: Write a program to take temperature in Celsius and convert it into Fahrenheit by using  $F = 9/5 * C + 32$ .**

### Source Code:

### Output:

```
1 #include <iostream>
2 using namespace std;
3
4 int main() {
5     float celsius, fahrenheit;
6
7     // Input temperature in Celsius
8     cout << "Enter temperature in Celsius: ";
9     cin >> celsius;
10
11     // Convert Celsius to Fahrenheit
12     fahrenheit = (9.0/5.0)*celsius+32;
13
14     // Display the temperature in Fahrenheit
15     cout << "Temperature in Fahrenheit: " << fahrenheit << endl;
16
17     return 0;
18 }
19
```

```
Enter temperature in Celsius: 35
Temperature in Fahrenheit: 95

-----
Process exited after 4.488 seconds with return value 0
Press any key to continue . . .
```

**Question # 8: Write a program to take three digit numbers from user then display its reverse order.**

### Source Code:

### Output:

```
1 #include <iostream>
2 using namespace std;
3
4 int main() {
5     int number, reverseNumber;
6
7     // Input a three-digit number
8     cout << "Enter a three-digit number: ";
9     cin >> number;
10
11     // Reverse the digits
12     reverseNumber = (number % 10) * 100; // Last digit to hundreds place
13     number /= 10;
14
15     reverseNumber += (number % 10) * 10; // Middle digit to tens place
16     number /= 10;
17
18     reverseNumber += number; // First digit to units place
19
20     // Display the reversed number
21     cout << "The number in reverse order is: " << reverseNumber << endl;
22
23     return 0;
24 }
```

```
Enter a three-digit number: 687
The number in reverse order is: 786

-----
Process exited after 11.31 seconds with return value 0
Press any key to continue . . .
```