

C++ Assignment

Home Task 1:

main.cpp	Output
<pre>1 #include <iostream> 2 #include <cmath> 3 4 using namespace std; 5 6 double distanceBetweenTwoPoints(double x1, double y1, double x2 , double y2) { 7 return sqrt(pow(x2 - x1, 2) + pow(y2 - y1, 2)); 8 } 9 10 int main() { 11 double x1 = 25; 12 double x2 = 20; 13 double y1 = 15; 14 double y2 = 10; 15 16 double distance = distanceBetweenTwoPoints(x1, y1, x2, y2); 17 18 cout << "The distance between the two points is approximately " << distance << " units." << endl;</pre>	<pre>/tmp/t6D9nUTD7L.o The distance between the two points is approximately 7.07107 units.</pre>

Home Task 2:

main.cpp	Output
<pre>1 #include <iostream> 2 3 using namespace std; 4 5 int main() { 6 float centimeter = 1000; 7 float meter = centimeter / 100.0; 8 float kilometer = centimeter / 100000.0; 9 10 cout << "Length in meters: " << meter << endl; 11 cout << "Length in kilometers: " << kilometer << endl; 12 13 return 0; 14 }</pre>	<pre>/tmp/t6D9nUTD7L.o Length in meters: 10 Length in kilometers: 0.01</pre>

Home Task 3:

```
main.cpp  Run  Output  Clear
1  #include <iostream>
2  #include <cmath>
3
4  using namespace std;
5
6  int main() {
7      double a, b;
8
9      cout << "3 ";
10     cin >> a;
11
12     cout << "4 ";
13     cin >> b;
14
15     double result = pow(a, 2) + 2 * a * b + pow(b, 2);
16
17     cout << "The result of the polynomial is " << result << endl;
18
19     return 0;
}
```

/tmp/t6D9nUTD7L.o
3

Home Task 4:

```
main.cpp  Run  Output
1  #include <iostream>
2
3  using namespace std;
4
5  int main() {
6      double celsius = 40;
7      double fahrenheit = (celsius * 9.0) / 5.0 + 32;
8
9      cout << "The temperature in Fahrenheit is " << fahrenheit <<
10         "&F." << endl;
11
12     return 0;
}
```

/tmp/t6D9nUTD7L.o
The temperature in Fahrenheit is 104°F.

Lab Task 1 (From Lab Manual 2):

main.cpp	Output
<pre>1 #include <iostream> 2 using namespace std; 3 4 int main() { 5 int age = 19; 6 bool is_eligible = age >= 18; 7 if (is_eligible) { 8 cout << "You are eligible to vote." << endl; 9 } else { 10 cout << "You are not eligible to vote." << endl; 11 } 12 return 0; 13 }</pre>	<pre>/tmp/t6D9nUTD7L.o You are eligible to vote.</pre>

Lab task 2:

main.cpp	Output
<pre>1 #include <iostream> 2 using namespace std; 3 4 int main() { 5 int num = 55; 6 bool is_in_range = num >= 10 && num <= 50; 7 if (is_in_range) { 8 cout << "The number " << num << " falls within the range 9 [10, 50]." << endl; 10 } else { 11 cout << "The number " << num << " does not fall within 12 the range [10, 50]." << endl; 13 } 14 return 0; 15 }</pre>	<pre>/tmp/t6D9nUTD7L.o The number 55 does not fall within the range [10, 50].</pre>


Lab Task 3:

main.cpp	Output
<pre>1 #include <iostream> 2 using namespace std; 3 4 int main() { 5 int num1 = 18; 6 int num2 = 21; 7 int max_num = num1 > num2 ? num1 : num2; 8 cout << "The maximum of " << num1 << " and " << num2 << " is 9 " << max_num << "." << endl; 10 return 0; 11 }</pre>	<pre>/tmp/t6D9nUTD7L.o The maximum of 18 and 21 is 21.</pre>


Lab Task 4:

main.cpp	Output
<pre>1 #include <iostream> 2 using namespace std; 3 4 int main() { 5 int score1 = 75; 6 int score2 = 67; 7 int score3 = 51; 8 double average = (score1 + score2 + score3) / 3.0; 9 bool is_passing = average >= 60.0; 10 if (is_passing) { 11 cout << "Congratulations! Your average score of " << 12 average << " is above the passing grade." << endl; 13 } else { 14 cout << "Sorry, your average score of " << average << " 15 is below the passing grade." << endl; 16 } 17 return 0; 18 }</pre>	<pre>/tmp/t6D9nUTD7L.o Congratulations! Your average score of 64.3333 is above the passing grade.</pre>

Home Task 1 (from Lab Manual 2):

main.cpp	Run	Output
<pre>1 #include <iostream> 2 using namespace std; 3 4 int main() { 5 int score = 81; 6 char grade; 7 if (score >= 90) { 8 grade = 'A'; 9 } else if (score >= 75) { 10 grade = 'B'; 11 } else if (score >= 60) { 12 grade = 'C'; 13 } else if (score >= 45) { 14 grade = 'D'; 15 } else { 16 grade = 'F'; 17 } 18 cout << "The student's score is " << score << ", which 19 corresponds to a grade of " << grade << "." << endl; 20 return 0; }</pre>		<pre>/tmp/t6D9nUTD7L.o The student's score is 81, which corresponds to a grade of B.</pre>

Home Task 2:

main.cpp	Run	Output
<pre>1 #include <iostream> 2 using namespace std; 3 4 int main() { 5 int num = 45; 6 bool is_even_and_divisible_by_5 = num % 2 == 0 && num % 5 == 7 0; 8 if (is_even_and_divisible_by_5) { 9 cout << "The number " << num << " is both even and 10 divisible by 5." << endl; 11 } else { 12 cout << "The number " << num << " is not both even and 13 divisible by 5." << endl; 14 } 15 return 0; }</pre>		<pre>/tmp/t6D9nUTD7L.o The number 45 is not both even and divisible by 5.</pre>

Home Task 3:

main.cpp	Output
<pre>1 #include <iostream> 2 using namespace std; 3 4 int main() { 5 int year = 2019; 6 bool is_leap_year = (year % 4 == 0 && year % 100 != 0) 7 (year % 400 == 0); 8 if (is_leap_year) { 9 cout << year << " is a leap year." << endl; 10 } else { 11 cout << year << " is not a leap year." << endl; 12 } 13 return 0; 14 }</pre>	<pre>/tmp/t6D9nUTD7L.o 2019 is not a leap year.</pre>

Home Task 4:

main.cpp	Output
<pre>1 #include <iostream> 2 using namespace std; 3 4 int main() { 5 double gpa = 3.6; 6 double attendance = 64.0; 7 bool is_eligible = gpa >= 3.5 && attendance >= 80.0; 8 if (is_eligible) { 9 cout << "Congratulations! You are eligible for a 10 scholarship." << endl; 11 } else { 12 cout << "Sorry, you are not eligible for a scholarship." 13 << endl; 14 } 15 return 0; 16 }</pre>	<pre>/tmp/t6D9nUTD7L.o Sorry, you are not eligible for a scholarship.</pre>

Home Task 5:

main.cpp	Output
<pre>1 #include <iostream> 2 using namespace std; 3 4 int main() { 5 char c = 's'; 6 bool is_vowel = c == 'a' c == 'e' c == 'i' c == 'o' 7 c == 'u' c == 'A' c == 'E' c == 'I' c == 8 'O' c == 'U'; 9 if (is_vowel) { 10 cout << "The character " << c << " is a vowel." << endl; 11 } else { 12 cout << "The character " << c << " is a consonant." << 13 endl; 14 } 15 return 0; 16 }</pre>	<pre>/tmp/t6D9nUTD7L.o The character s is a consonant.</pre>