



Iqra National University Peshawar Pakistan

Department of Computer Science

Spring Semester, Final Term Exam, July 2020

Paper :	Programming Fundamentals (Lab)	Date and Starting Time:	09/July/2020, 09:00 am
Program:	BS (CS & SE)	Uploading Date and End Time:	09/July/2020, 3:00 pm
Teacher Name:	Dr. Fazal-e-Malik	Marks	100

Note: Attempt all Questions.

Name	Abdul wahab	Submit DATE 9/July/2020
I'D	16907	PROGRAMMING FUNDAMENTALS (LAB)
BS	Se	SUBMIT TO SIR Dr.FAZAL-E-MALIK

Q.1 Read A, B and C representing the three sides of a triangle. Write a program to find out its area the formula is given below:

Where $S =$

Program

```
1#include <bits/stdc++.h>
using namespace std;
float findArea(float a, float b, float c)
{
    // Length of sides must be positive
    // and sum of any two sides
    // must be smaller than third side.
    if (a < 0 || b < 0 || c < 0 ||
        (a + b <= c) || a + c <= b ||
        b + c <= a)
    {
        cout << "Not a valid triangeln";
        exit(0);
    }
    float s = (a + b + c) / 2;
    return sqrt(s * (s - a) *
```

```

        (s - b) * (s - c));
    }
    // Driver Code
int main()
{
    float a = 3.0;
    float b = 4.0;
    float c = 5.0;
    cout << "Area is " << findArea(a, b, c);
    return 0;
}

```

Q.2 Write a C++ program to get marks obtained by a student in percentage **P** and then find the division according to the below rules:

- If Percentage P is above or equal to 60 then display.....1st Division.
- If Percentage P is between 50 & 59 then display.....2nd Division.
- If Percentage P is between 40 & 49 then display.....3rd Division.
- If Percentage P is less than 40 then display.....Fail.

Program

```
#include <stdio.h>

int main()
{
    int phy, chem, bio, math, comp;
    float per;

    /* Input marks of five subjects from user */
    printf("Enter five subjects marks: ");
    scanf("%d%d%d%d%d", &phy, &chem, &bio, &math, &comp);
    /* Calculate percentage */
    per = (phy + chem + bio + math + comp) / 5.0;
    printf("Percentage = %.2f\n", per);
    /* Find division according to the percentage */
    if(per >= 70)
    {
        printf("1st Division");
    }
    else if(per >= 60)
    {
        printf("2nd Division");
    }
    else if(per >= 50)
    {
        printf("3rd Division");
    }
}
```

```
else if(per >= 40)
{
    printf("Fail");
    return 0;
}
```

Q.3 Write a C++ program to convert 5 feet to the equivalent number of (a) Inches (b) Yards. Where 1foot =12 Inches and 1 yard=3 feet)

Program

```
#include <iostream>
using namespace std;

int
main ()
{
    int inches;
    int feet;
    int yards;

    cout << "Number of Inches\n";
```

```
cin >> inches;
cout << "Number of Yards is\n";
yards = inches % 36;
cout << yards;

cout << "number of feet\n";
feet = inches % 12;
cout << feet;

cout << "number of inches\n";
cout << inches;
yards = inches / 36;
cout << yards;
return 0;
}
```

Q.4 Write a C++ program to find the sum of the following series:

2+4+6+8+10

Program

```
#include <iostream>
using namespace std;

int main()
{
    int i, n, sum = 0;
```

```

cout << "\n\n Find the sum of the series 2+4+6+8+10 (n+n):\n";
cout << "-----\n";
cout << " Input the value for nth term: ";
cin >> n;

for (i = 1; i <= n; i++)
    {
        sum += i + i;
        cout << i << "+" << i << " = " << i + i << endl;
    }
cout << " The sum of the above series is: " << sum << endl;
}

```

Q.5 Write a C++ program to input Hours Worked and Hour Rate of an Employee. Calculate and display the Gross-Pay, Tax and Net-Pay; where

Gross-Pay=Hour-Worked*Hour-Rate

Tax=10% of Gross-Pay

Net-Pay=Gross-Pay - Tax

Program

```
#include <iostream>
#include <stdio.h>
#include <stdlib.h>
using namespace std;

int
main ()
{
    double hourly_rate;
    double hours;
    double gross_pay;
    printf ("Please input the hourly rate of the employee: ");
    cin >> hourly_rate;
    printf ("Please input the number of hours worked by the employee: ");
    cin >> hours;

    if (hours <= 40)
    {
        gross_pay = hours * hourly_rate;
    }
    else
    {
        gross_pay = (40 * hourly_rate) + (hours - 40) * (hourly_rate * 1.5);
    }

    cout << "The gross pay of this employee is $" << gross_pay << "." << endl;

    system ("pause");
}
```



```
return 0;}
```

THE END

