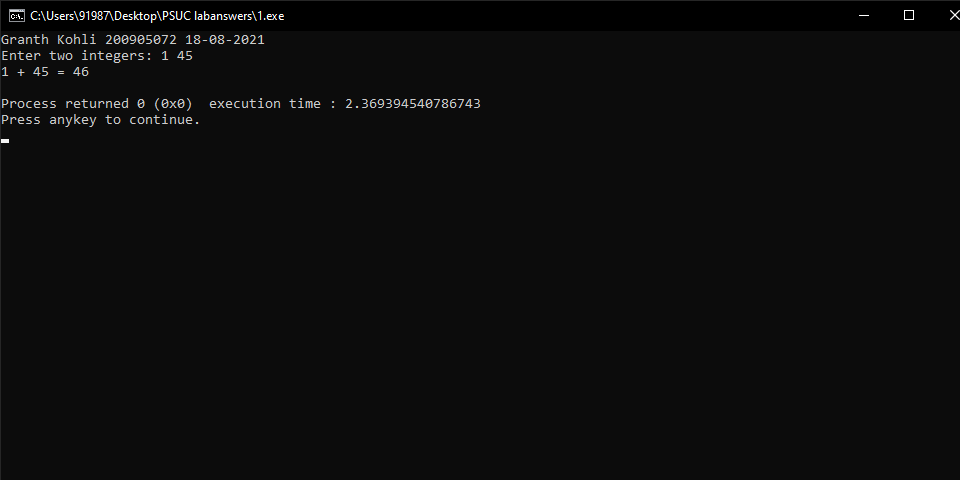
Lab no.1 – Simple C Programs

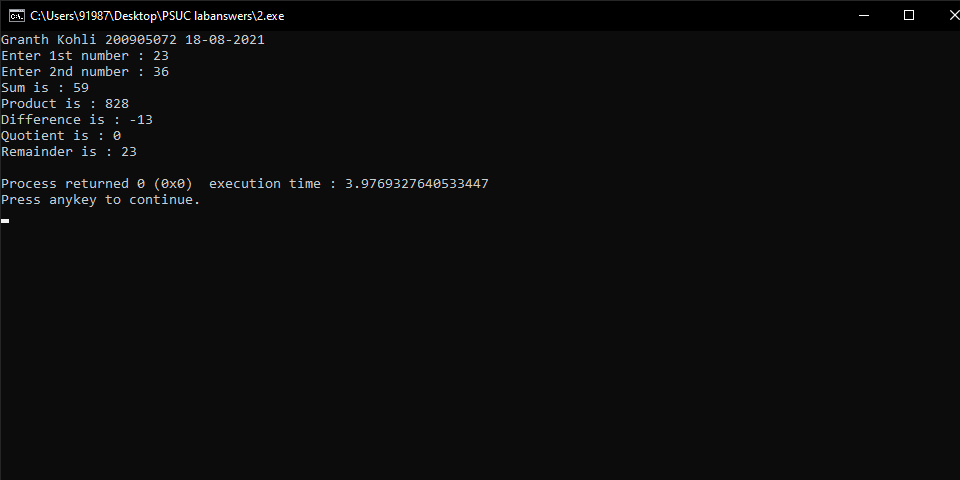
Q1) Write a C program to add two integers a and b read through the keyboard. Display the result using third variable sum.

#include <stdio.h>   
int main() {  
 printf("Granth Kohli 200905072 18-08-2021")   
 int number1, number2, sum;  
 printf("Enter two integers: ");  
 scanf("%d %d", &number1, &number2);  
 sum = number1 + number2;  
 printf("%d + %d = %d\n", number1, number2, sum);   
 return 0;   
}



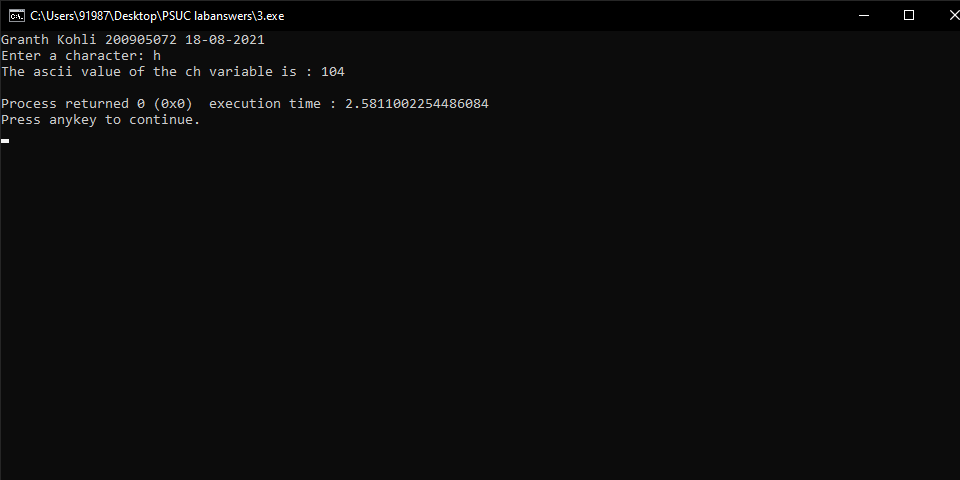
Q2) Write a C program to find the sum, difference, product and quotient of 2 numbers.

#include <stdio.h>  
int main()  
{  
 printf("Granth Kohli 200905072 18-08-2021")  
 int a,b,sum,product,diff,quotient,remainder;   
 printf("Enter 1st number : ");   
 scanf("%d",&a);   
 printf("Enter 2nd number : ");   
 scanf("%d",&b);  
 sum=a+b;  
 product=a\*b;   
 diff=a-b;   
 quotient=a/b;   
 remainder=a%b;   
 printf("Sum is : %d\n",sum);  
 printf("Product is : %d\n",product);  
 printf("Difference is : %d\n",diff);   
 printf("Quotient is : %d\n",quotient);   
 printf("Remainder is : %d\n",remainder);  
 return 0;  
}



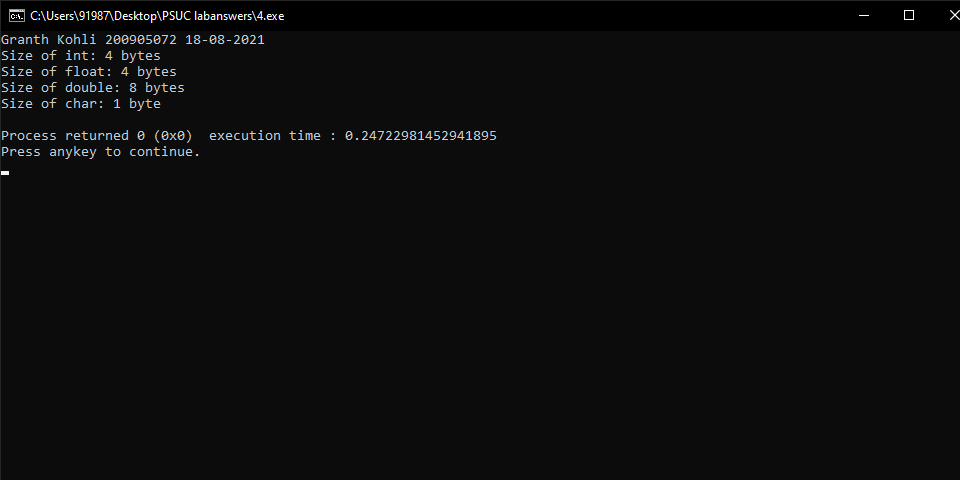
Q3) Write a C program to print the ASCII value of a character.

#include <stdio.h>   
int main()  
{   
 printf("Granth Kohli 200905072 18-08-2021")  
 char ch; // variable declaration  
 printf("Enter a character: ");  
 scanf("%c",&ch); // user input  
 printf("The ascii value of the ch variable is : %d\n", ch);   
 return 0;  
}



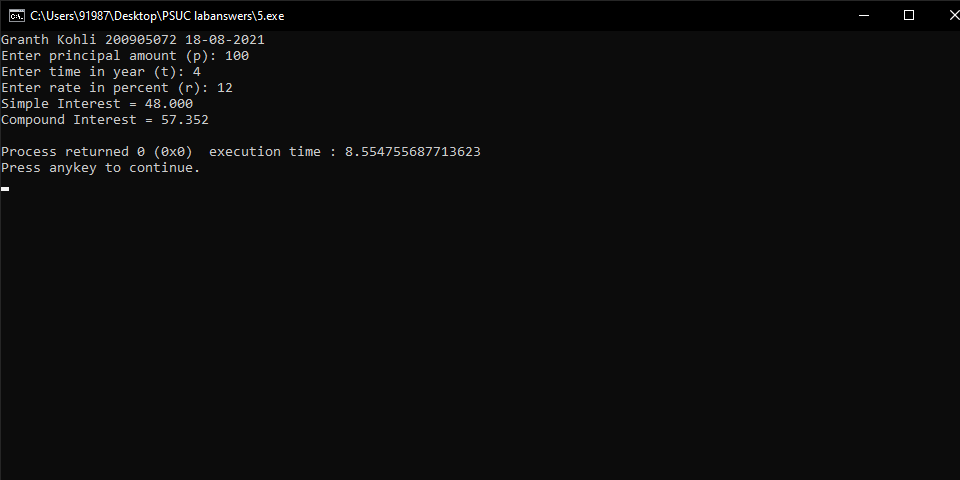
Q4) Write a C program to display the size of the data type int, char, float, double, long int and long double using size of ( ) operator.

#include<stdio.h>   
int main() {   
 printf("Granth Kohli 200905072 18-08-2021")  
 int intType;  
 float floatType;  
 double doubleType;  
 char charType;  
 // sizeof evaluates the size of a variable  
 printf("Size of int: %d bytes\n", sizeof(intType));  
 printf("Size of float: %d bytes\n", sizeof(floatType));   
 printf("Size of double: %d bytes\n", sizeof(doubleType));   
 printf("Size of char: %d byte\n", sizeof(charType));   
 return 0;   
}



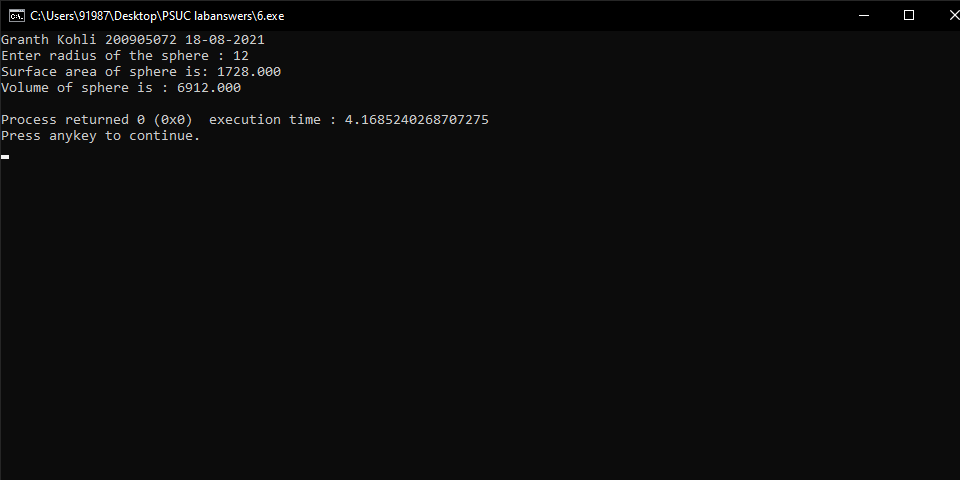
Q5) Input P, N and R to compute simple and compound interest.

#include<stdio.h>   
#include<conio.h>  
#include<math.h>   
int main()   
{  
 printf("Granth Kohli 200905072 18-08-2021")  
 float p, t, r, si, ci;  
 printf("Enter principal amount (p): ");  
 scanf("%f", &p);  
 printf("Enter time in year (t): ");  
 scanf("%f", &t);  
 printf("Enter rate in percent (r): ");   
 scanf("%f", &r);  
  
 si = (p \* t \* r)/100.0;  
 ci = p \* (pow(1+r/100, t) - 1);   
  
 printf("Simple Interest = %0.3f\n", si);  
 printf("Compound Interest = %0.3f\n", ci);   
   
 getch();  
 return(0);  
}



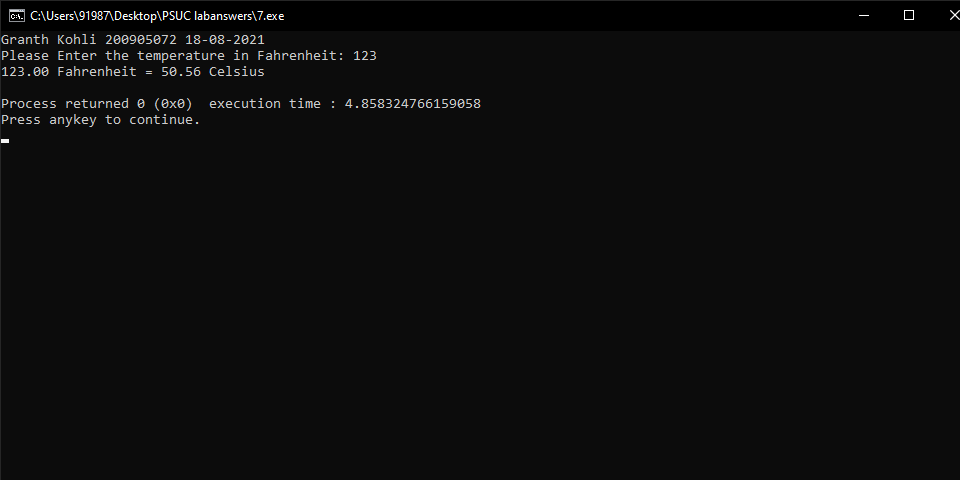
Q6) Input radius to find the volume and surface area of a sphere.

#include <stdio.h>  
#include <math.h>  
int main()  
{  
 printf("Granth Kohli 200905072 18-08-2021")  
 float radius;  
 float surface\_area, volume;  
 printf("Enter radius of the sphere : ");  
 scanf("%f", &radius);  
  
 surface\_area = 4 \* (22/7) \* radius \* radius;  
 volume = (4.0/3) \* (22/7) \* radius \* radius \* radius;  
   
 printf("Surface area of sphere is: %.3f\n", surface\_area);  
 printf("Volume of sphere is : %.3f\n", volume);  
 return 0;  
}



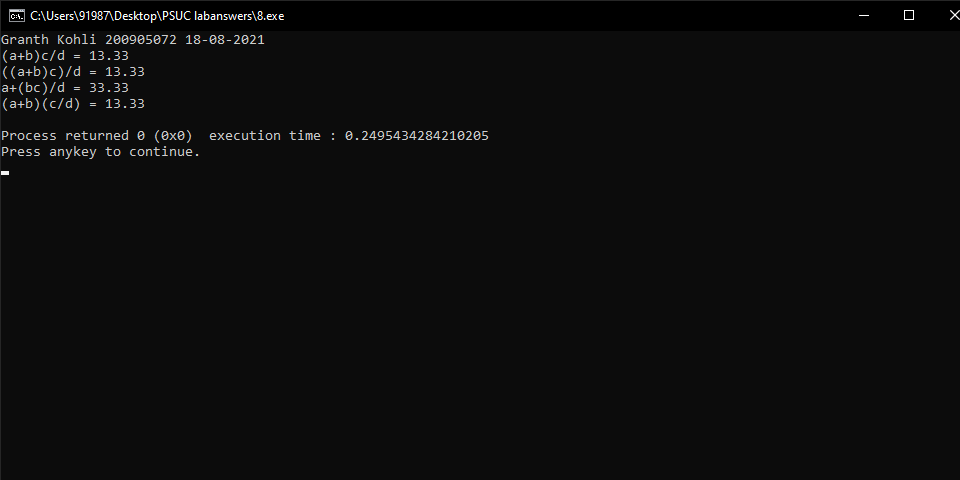
Q7) Convert the given temperature in Fahrenheit to Centigrade. [Hint: C=5/9(F-32)].

#include <stdio.h>  
int main()  
{  
 printf("Granth Kohli 200905072 18-08-2021")  
 float celsius, fahrenheit;  
 printf("Please Enter the temperature in Fahrenheit: ");  
 scanf("%f", &fahrenheit);  
  
 celsius = (fahrenheit - 32) \* 5 / 9;  
  
 printf("%.2f Fahrenheit = %.2f Celsius \n", fahrenheit, celsius);  
 return 0;  
}



Q8) Write a C program to evaluate the following expression for the values a = 30, b=10, c=5, d=15.(i) (a + b) \* c / d (ii) ((a + b) \*c) / d (iii) a + (b \* c) / d (iv) (a + b) \* (c / d)

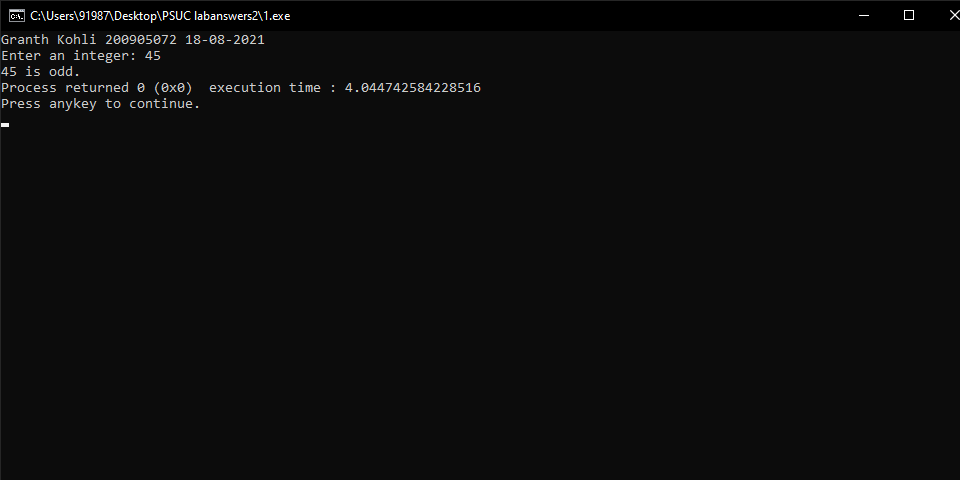
#include <stdio.h>   
int main()  
{  
 printf("Granth Kohli 200905072 18-08-2021")   
 float a, b, c, d, sol1, sol2, sol3, sol4;   
 a=30.0;  
 b=10.0;  
 c=5.0;   
 d=15.0;   
 sol1=(a+b)\*c/d;   
 sol2=((a+b)\*c)/d;   
 sol3=a+(b\*c)/d;   
 sol4=(a+b)\*(c/d);  
 printf("(a+b)c/d = %.2f\n", sol1);   
 printf("((a+b)c)/d = %.2f\n", sol2);   
 printf("a+(bc)/d = %.2f\n", sol3);   
 printf("(a+b)(c/d) = %.2f\n", sol4);   
 return 0;   
}



Lab no.2 – Branching Control Structure

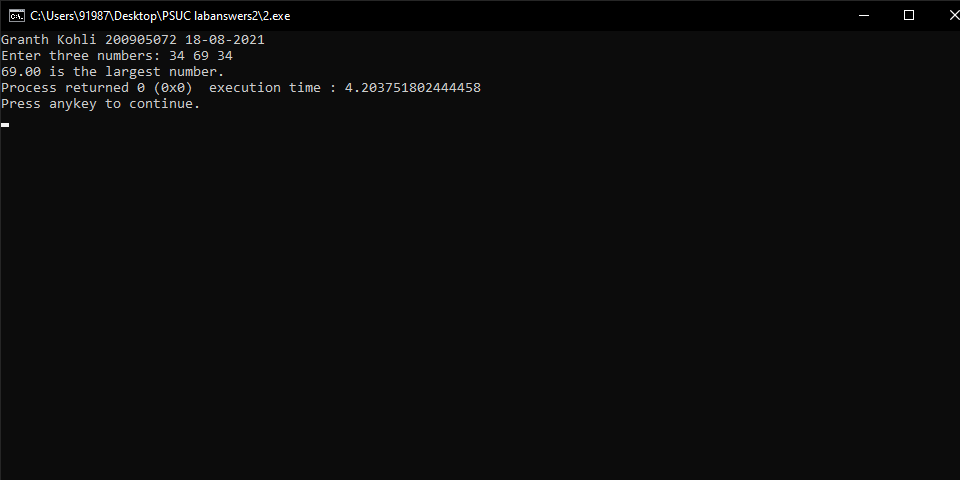
Q1) Check whether the given number is odd or even.

#include <stdio.h>  
int main() {  
 int num;  
 printf("Granth Kohli 200905072 18-08-2021")  
 printf("Enter an integer: ");  
 scanf("%d", &num);  
 if(num % 2 == 0)  
 printf("%d is even.", num);  
 else  
 printf("%d is odd.", num);  
 return 0;  
}



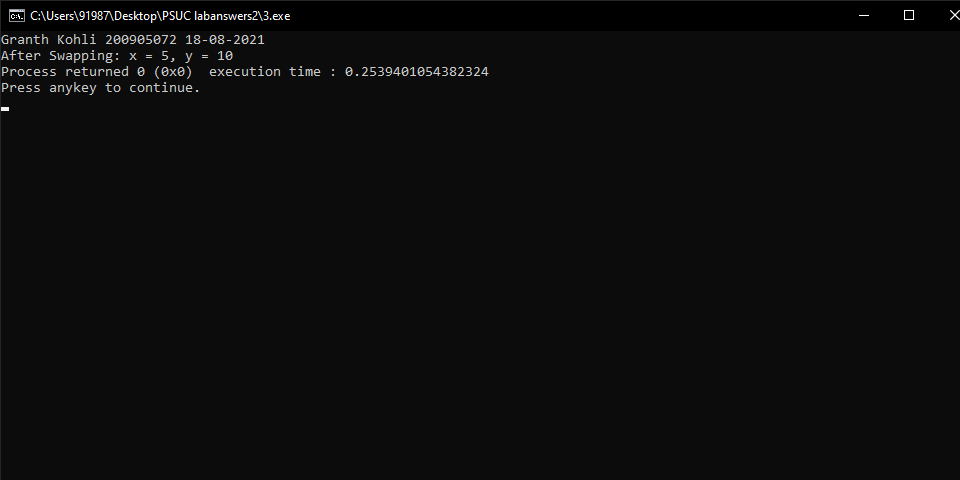
Q2) Find the largest among 3 numbers.

#include <stdio.h>  
int main() {  
 printf("Granth Kohli 200905072 18-08-2021")  
 double n1, n2, n3;  
 printf("Enter three numbers: ");  
 scanf("%lf %lf %lf", &n1, &n2, &n3);  
  
 if (n1 >= n2) {  
 if (n1 >= n3)  
 printf("%.2lf is the largest number.", n1);  
 else  
 printf("%.2lf is the largest number.", n3);  
 } else {  
 if (n2 >= n3)  
 printf("%.2lf is the largest number.", n2);  
 else  
 printf("%.2lf is the largest number.", n3);  
 }  
  
 return 0;  
}



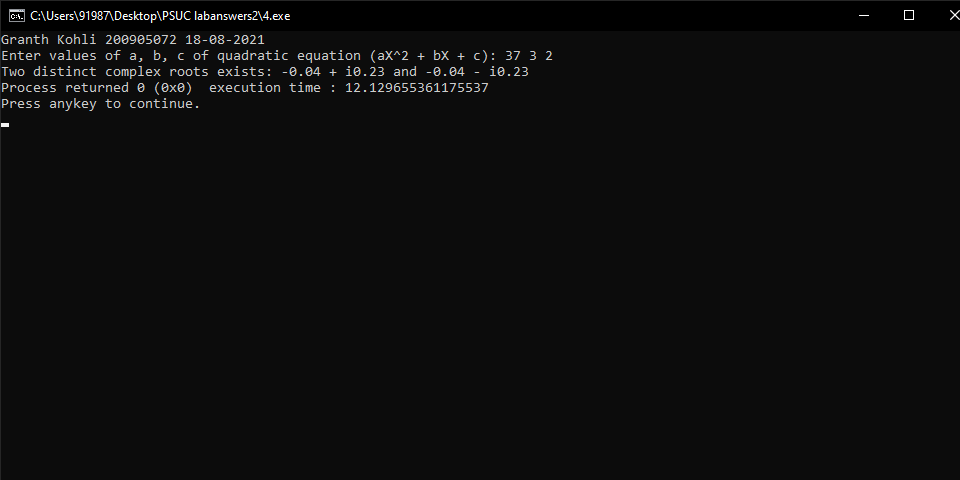
Q3) Swap two numbers without using third variable.

#include <stdio.h>  
int main()  
{  
 printf("Granth Kohli 200905072 18-08-2021")  
 int x = 10, y = 5;  
 x = x + y;  
 y = x - y;   
 x = x - y;   
 printf("After Swapping: x = %d, y = %d", x, y);  
 return 0;  
}



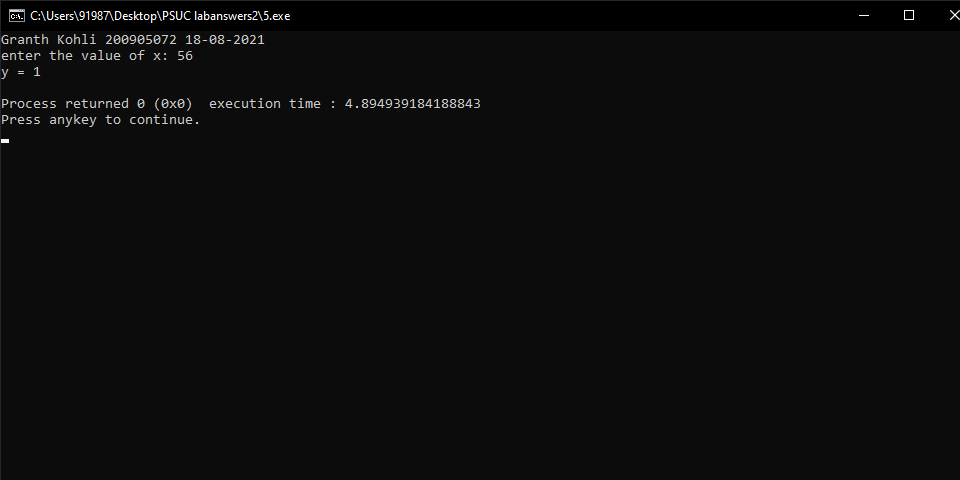
Q4) Compute all the roots of a quadratic equation using switch case statement.

#include <stdio.h>  
#include <math.h>  
  
int main()  
{  
 printf("Granth Kohli 200905072 18-08-2021")  
 float a, b, c;  
 float root1, root2, imaginary;  
 float discriminant;  
  
 printf("Enter values of a, b, c of quadratic equation (aX^2 + bX + c): ");  
 scanf("%f%f%f", &a, &b, &c);  
  
 discriminant = (b \* b) - (4 \* a \* c);  
 switch(discriminant > 0)  
 {  
 case 1:  
 root1 = (-b + sqrt(discriminant)) / (2 \* a);  
 root2 = (-b - sqrt(discriminant)) / (2 \* a);  
  
 printf("Two distinct and real roots exists: %.2f and %.2f",   
 root1, root2);  
 break;  
  
 case 0:  
 switch(discriminant < 0)  
 {  
 case 1:  
 root1 = root2 = -b / (2 \* a);  
 imaginary = sqrt(-discriminant) / (2 \* a);  
  
 printf("Two distinct complex roots exists: %.2f + i%.2f and %.2f - i%.2f", root1, imaginary, root2, imaginary);  
 break;  
  
 case 0:  
 root1 = root2 = -b / (2 \* a);  
 printf("Two equal and real roots exists: %.2f and %.2f", root1, root2);  
 break;  
 }  
 }  
 return 0;  
}



Q5) Write a program that will read the value of x and evaluate thefollowing function.Y= 1, x>0 Y=0, x=0 Y=-1, x<0.Use else if statements & Print the result (â€˜Yâ€™ value).

#include <stdio.h>  
  
int main(){  
 printf("Granth Kohli 200905072 18-08-2021")  
 int x, y;  
 printf("enter the value of x: ");  
 scanf("%d", x);  
 if (x > 0)  
 y = 1;  
 else if (x < 0)  
 y = -1;  
 else  
 y = 0;  
 printf("y = %d\n", y);  
}



Q6) Find the smallest among three numbers using conditional operator.

#include <stdio.h>  
  
int main(void)  
{  
 printf("Granth Kohli 200905072 18-08-2021")  
 int a, b, c, temp, min;  
 printf ("Enter three nos. separated by spaces: ");  
 scanf ("%d%d%d", &a, &b, &c);  
 temp = (a < b) ? a : b;  
 min = (c < temp) ? c : temp;  
 printf ("The Minimum of the three is: %d", min);  
 return 0;  
}

