Roll No: 220950320059

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Assignment 3: Function In C

Q1. Write a C Program to find the Greatest Common Divisor using the functions.

Expected Output

1) Enter the numbers : 150,35

The Greatest Common Divisor of 150 and 35 is 5

2) Enter the numbers : 1026,405

The Greatest Common Divisor of 1026 and 405 is 27

3) Enter the numbers : 83,240

The Greatest Common Divisor of 83 and 240 is 1

Code:

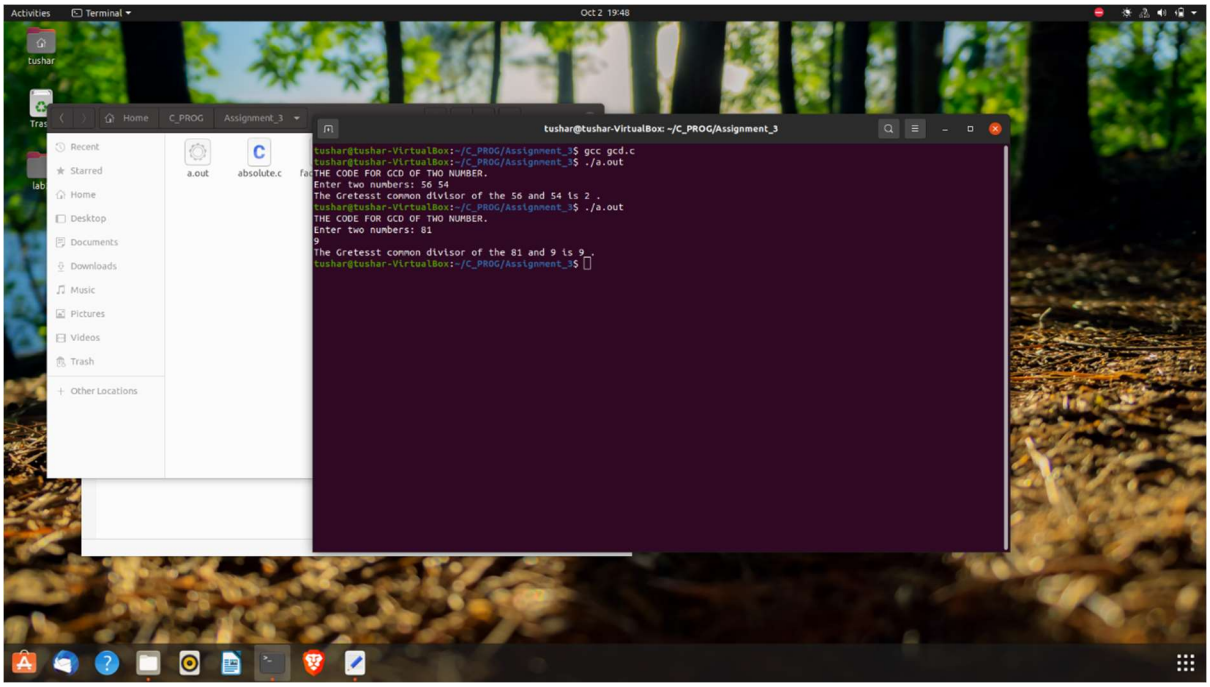
```
#include<stdio.h>
int gcd( int, int );
int main(){
   int x, y;
   printf("Enter two numbers: ");
   scanf("%d%d", &x, &y);
   int Greatest_Common_Divisor = gcd(x, y);
   printf("The Gretesst common divisor of the %d and %d is %d \n", x, y, Greatest_Common_Divisor);
   return 0;
}

int gcd(int a, int b)
{
   int z;
   for (int i = 1; i < a && i < b; i++)
   {
      if (a%i==0 && b%i==0)
      {
```

```
            z = i;
        }


    }
    return z;
}
```

Output:



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Q2. Write a C Program to find the Absolute Value using the functions.

Expected Output

1) **Enter the number : 100**

   The Absolute Value of 100 is 100

2) **Enter the number : -200**

   The Absolute Value of -200 is 200

Code:

```
#include<stdio.h>
int absolute(int);
int main(){
   printf("THE CODE FOR ABSOLUTE NUMBER.\n");
   int a;
   printf("enter the number :");
   scanf("%d",&a);
   int abs = absolute(a);
   printf("The Absolute of %d is %d.\n", a, abs);
   return 0;
}
int absolute(int x){
   int y = x < 0 ? (-x) : x;
}
```

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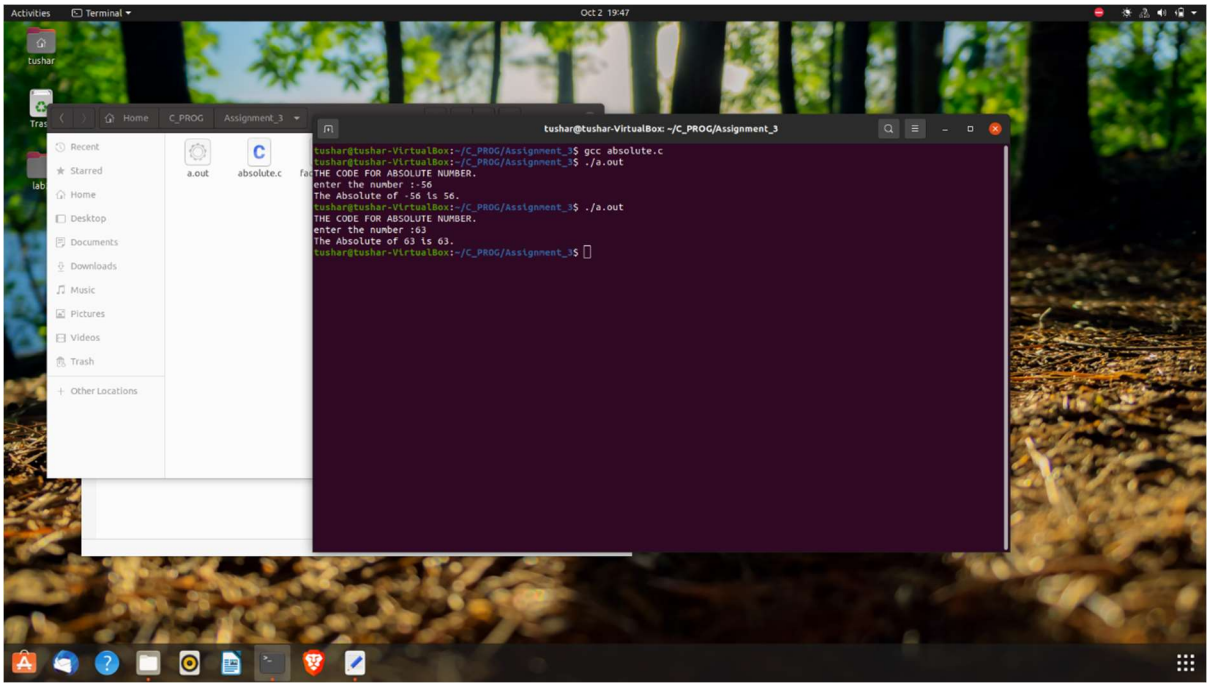
Output:



Q3. Write a C program to check whether the given number is perfect number or not using functions

A number is called as a perfect number if the sum of the factors of that number is equal to the same number.

Expected Output

1) Enter the number : 6

The number entered is Perfect Number

2) Enter the number : 24

The number entered is not a Perfect Number

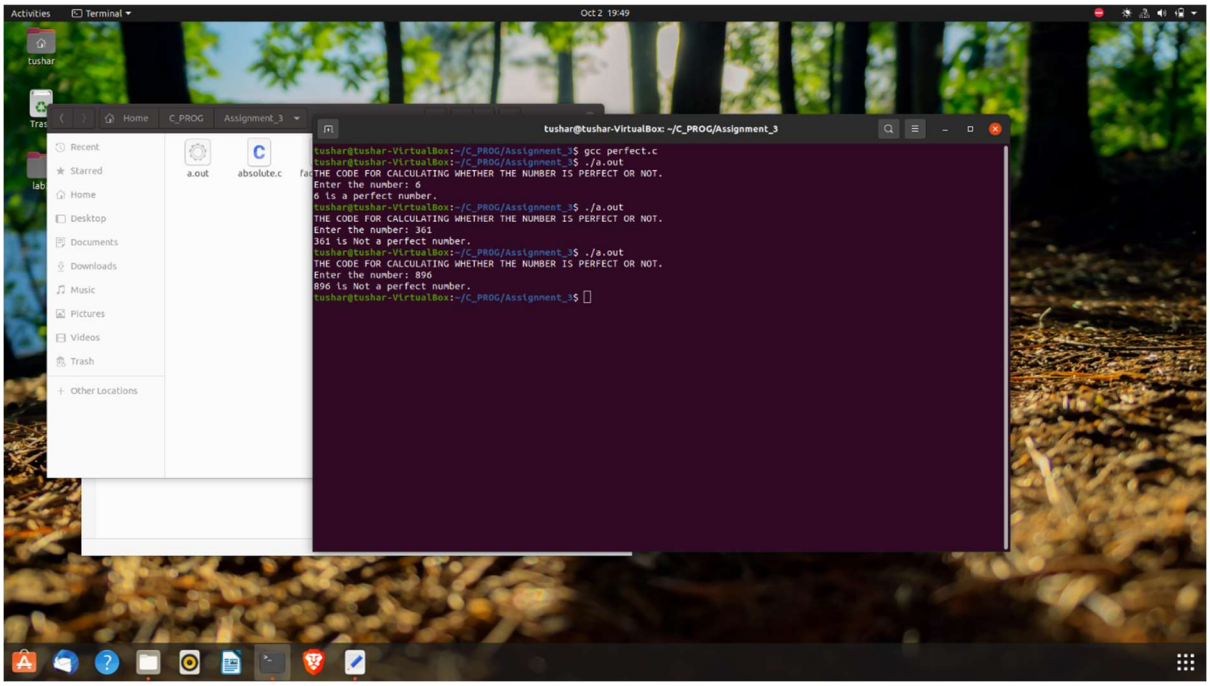
Code:

```
#include<stdio.h>
void perfect(int);
void perfect(int a)
{
   int  b=0, x;
   for (int i = 1; i < a; i++)
   {
      if ( a % i == 0 )
      {
         b = b + i;
      }
   }
   if (a == b)
   {
      printf("%d is a perfect number.\n",a);
   }
   else
   {
      printf("%d is Not a perfect number.\n",a);
```

```
    }


}
int main()
{
    printf("THE CODE FOR CALCULATING WHETHER THE NUMBER IS PERFECT OR NOT.\n");
    int c;
    printf("Enter the number: ");
    scanf("%d", &c);
    perfect(c);
    return 0;
}
```

Output:



Q4. Write a C Program to find the factorial of a given number using functions.

Expected Output

1) Enter the number : 7

The Factorial of 7 is 5040

2) Enter the number : 0

The Factorial of 0 is 1

Code:

```
#include<stdio.h>
int fact(int);
int main()
{
   printf("THE CODE FOR CALCULATING THE FACTORIAL OF THE NUMBER.\n");
   int a;
   printf("Enter the number :");
   scanf("%d",&a);
   int factorial = fact(a);
   printf("The factorial of %d is %d. \n",a , factorial);
   return 0;
}
int fact(int x)
{
   int y = 1;
   for (int i = 1; i <= x; i++)
   {
      y = y * i;
   }
   return y;
}
```

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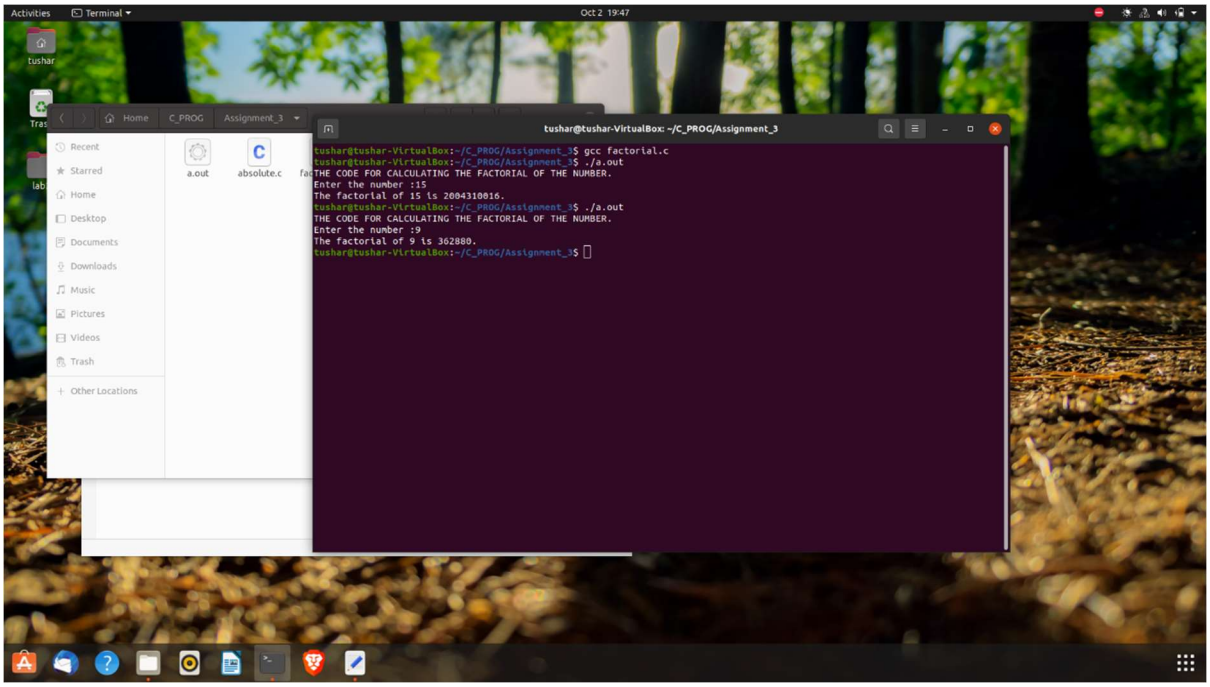
Output:



Q5. Write a C Program to find the power of a given number using functions.

Expected Output

1) Enter the base number : 2

Enter the power number : 3

2^3 = 8

2) Enter the base number : 5

Enter the power number : 0

5^0 = 1

Code:

```
#include<stdio.h>
float powe(float,float);
float powe(float x, float p){
   float power = 1.0;
   if(p<0)
   {
         p = (-1) * p;
         x = 1 / x;
   }
   for (int i = 0; i < p; i++)
   {
      power = power * x;
   }
   return power;
}
int main()
{
   printf("THE CODE FOR CALCULATING POWER OF NUMBER.\n");
   float a, b;
   printf("Enter the base number: ");
   scanf("%f",&a);
   printf("Enter the power number: ");
```

```
    scanf("%f",&b);
    float p = powe(a, b);
    printf("%0.1f^%0.1f is %f. \n", a, b, p);
    return 0;
}
```

Output: