NAME: - Jaydeep Solanki

ROLL NO: - 22ECG060 | 22BEC059

COURSE CODE: - 1CS501

SUBJECT: - COMPUTER PROGRAMMING

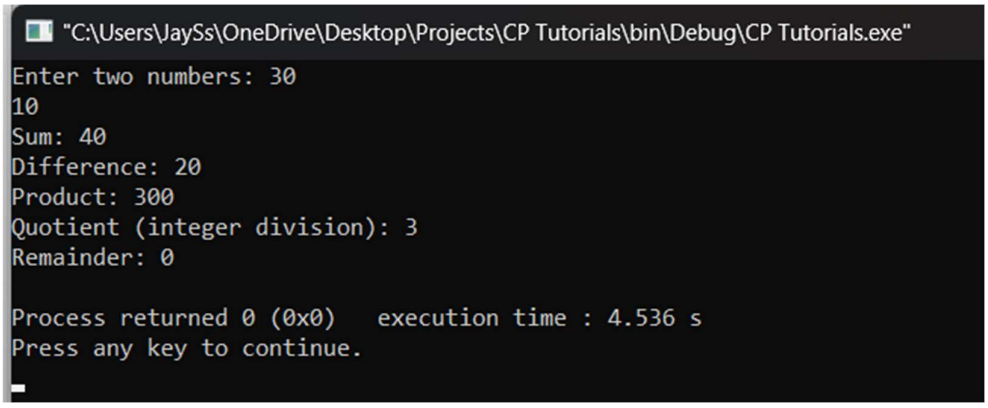
PRACTICAL NO 2: C programs to illustrate working of various operators

a) Scan two numbers and display result of different arithmetic operations (+, -, *, / and %).

Code :

```
#include <stdio.h>
int main()
{
   int num1, num2;
   printf("Enter two numbers: ");
   scanf("%d%d", &num1, &num2);
   printf("Sum: %d\n", num1 + num2);
   printf("Difference: %d\n", num1 - num2);
   printf("Product: %d\n", num1 * num2);
   printf("Quotient (integer division): %d\n", num1 / num2);
   printf("Remainder: %d\n", num1 % num2);
   return 0;
}
```

Output:



b) A company has following scheme for payment to their staff. • Net salary = Gross salary – Deduction

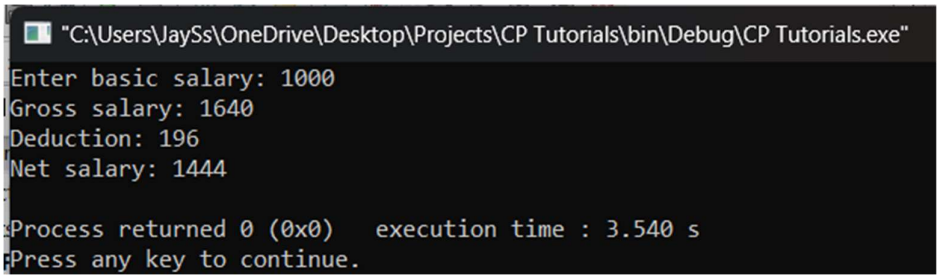
- Gross salary = Basic + DA + HRA + Medical
- Deduction = Insurance + PF
- DA (Dearness allowance) = 50% of Basic
- HRA (House rent allowance) = 10% of Basic
- Medical = 4% of Basic
- PF (Provident Fund) = 5% of Gross
- Insurance = 7% of Gross

Calculate the net payment to any employee.

Code:

```
#include <stdio.h>


int main(void)
{
   int basic, da, hra, medical, gross, pf, insurance, deduction, net;
   printf("Enter basic salary: ");
   scanf("%d", &basic);
   da = basic * 0.5;
   hra = basic * 0.1;
   medical = basic * 0.04;
   gross = basic + da + hra + medical;
   pf = gross * 0.05;
   insurance = gross * 0.07;
   deduction = pf + insurance;
   net = gross - deduction;
   printf("Gross salary: %d\n", gross);
   printf("Deduction: %d\n", deduction);
   printf("Net salary: %d\n", net);


   return 0;
}
```

Output:



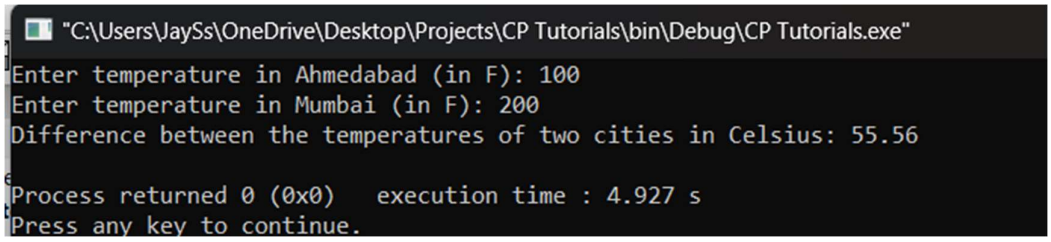
c) The driver is driving a car from city Ahmedabad to city Mumbai, in Ahmedabad temperature displays in Celsius while in Mumbai the temperature displayed in Fahrenheit, a driver wants to find the difference between the temperatures of two cities in Celsius. (Celsius = (F-32) * (5/9)).

Code:

```
#include <stdio.h>
```

```
int main()
{
   float temp_ahmedabad, temp_mumbai, diff;
   printf("Enter temperature in Ahmedabad (in F): ");
   scanf("%f", &temp_ahmedabad);
   printf("Enter temperature in Mumbai (in F): ");
   scanf("%f", &temp_mumbai);
   temp_ahmedabad = (temp_ahmedabad - 32) * (5.0/9.0);
   temp_mumbai = (temp_mumbai - 32) * (5.0/9.0);
   diff = temp_mumbai - temp_ahmedabad;
   printf("Difference between the temperatures of two cities in Celsius: %.2f\n", diff);
   return 0;
}
```

Output:

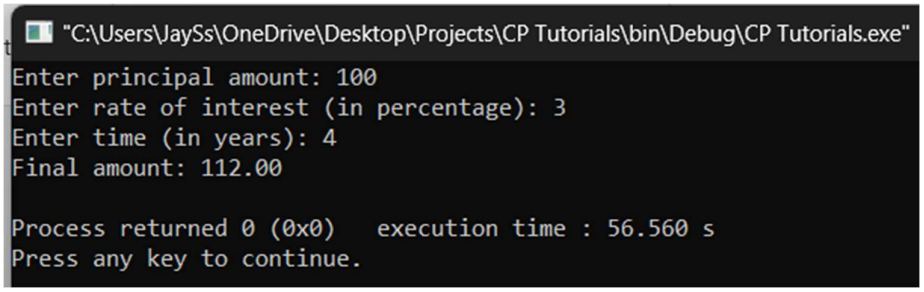


d) To calculate simple interest. (final amount A = P_principal_amount(1+rate_of_interest_annual*time_in_years).

Code:

```
#include <stdio.h>
int main(void) {
  float principal, rate, time, final_amount;
  printf("Enter principal amount: ");
  scanf("%f", &principal);
  printf("Enter rate of interest (in percentage): ");
  scanf("%f", &rate);
  printf("Enter time (in years): ");
  scanf("%f", &time);
  final_amount = principal * (1 + (rate/100) * time);
  printf("Final amount: %.2f\n", final_amount);
  return 0;
}
```

Output:

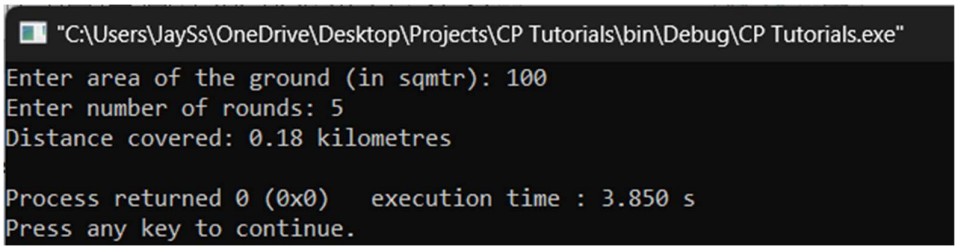


e) A boy was punished and asked to cover 5 rounds of the circular ground. Area of the ground is 32000 sqmtr. Calculate how many kilometres the boy has covered.

Code:

```
#include <stdio.h>

#include <math.h>

int main()

{

   int area, rounds;

   float radius, distance;

   printf("Enter area of the ground (in sqmtr): ");

   scanf("%d", &area);

   printf("Enter number of rounds: ");

   scanf("%d", &rounds);

   radius = sqrt(area / M_PI);

   distance = 2 * M_PI * radius * rounds;

   printf("Distance covered: %.2f kilometres\n", distance / 1000);

   return 0;

}
```

Output:



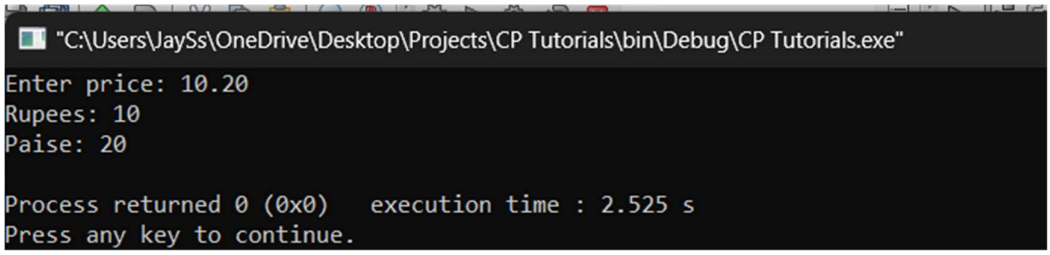
f) Read the price of item in decimal form. For example, 12.52 and separate rupee and paise from the given value. For example, 12 rupees and 52 paise.

Code:

```
#include <stdio.h>

int main()

{
```

```
    float price;
    int paise, rupees;
    printf("Enter price: ");
    scanf("%f", &price);
    paise = (int)(price * 100);
    rupees = paise / 100;
    paise = paise % 100;
    printf("Rupees: %d\n", rupees);
    printf("Paise: %d\n", paise);
    return 0;
}
```

Output:



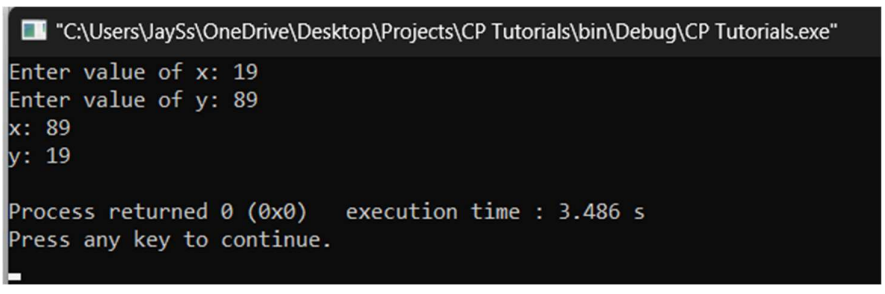
g) To swap the value of two numbers

1. Using a temporary variable

Code:

```
#include <stdio.h>

int main(void) {
  int x, y, temp;
  printf("Enter value of x: ");
  scanf("%d", &x);
  printf("Enter value of y: ");
  scanf("%d", &y);
  temp = x;
  x = y;
  y = temp;
  printf("x: %d\n", x);
  printf("y: %d\n", y);
  return 0;
}
```

Output:

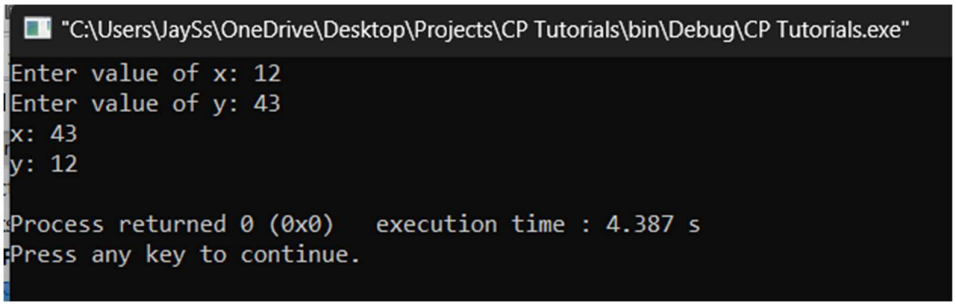


2. Without using temporary number.

Code:

```
#include <stdio.h>
int main(void) {
  int x, y;
  printf("Enter value of x: ");
  scanf("%d", &x);
  printf("Enter value of y: ");
  scanf("%d", &y);
  x = x + y;
  y = x - y;
  x = x - y;
  printf("x: %d\n", x);
  printf("y: %d\n", y);

  return 0;
}
```

Output:

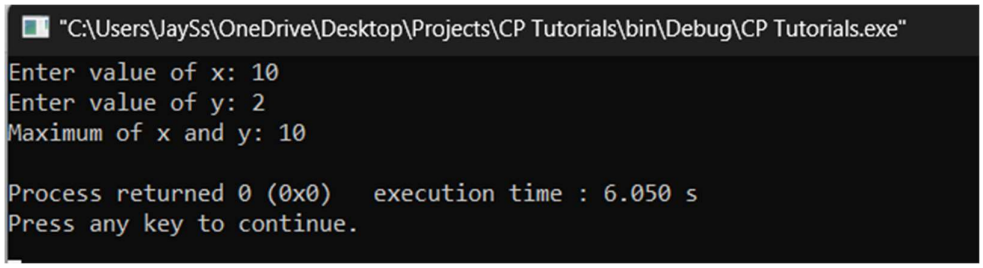


h) To find greatest of two and three numbers using the ternary operator.

Code:

```
#include <stdio.h>

int main(void) {
  int x, y, max;
  printf("Enter value of x: ");
  scanf("%d", &x);
  printf("Enter value of y: ");
  scanf("%d", &y);
  max = (x > y) ? x : y;
  printf("Maximum of x and y: %d\n", max);

  return 0;
}
```

Output:


"C:\Users\JaySs\OneDrive\Desktop\Projects\CP Tutorials\bin\Debug\CP Tutorials.exe"
Enter value of x: 10
Enter value of y: 2
Maximum of x and y: 10
Process returned 0 (0x0)   execution time : 6.050 s
Press any key to continue.