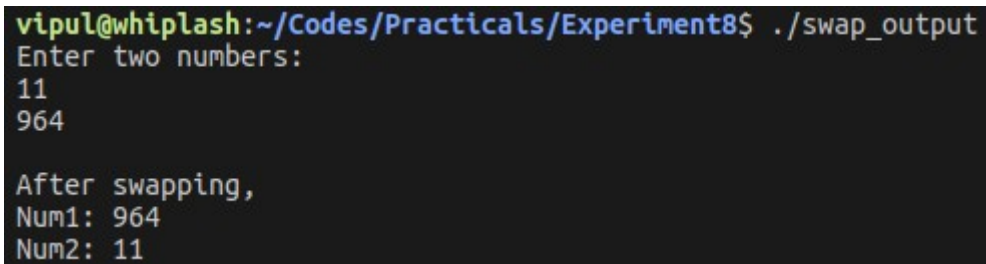


Program 1

// Program to swap two numbers using pointers

```
#include <stdio.h>
void swap(int *num1, int *num2)
{
    int temp = *num1;
    *num1 = *num2;
    *num2 = temp;
}

int main()
{
    int num1, num2;
    printf("Enter two numbers:\n");
    scanf("%d %d", &num1, &num2);
    swap(&num1, &num2);
    printf("\nAfter swapping,\nNum1: %d\nNum2: %d\n\n", num1, num2);
}
```

A terminal window with a dark background. The prompt is 'vipul@whiplash:~/Codes/Practicals/Experiment8\$'. The user has run './swap_output'. The program prompts 'Enter two numbers:' and the user has entered '11' and '964' on separate lines. The program then outputs 'After swapping,' followed by 'Num1: 964' and 'Num2: 11' on separate lines.

```
vipul@whiplash:~/Codes/Practicals/Experiment8$ ./swap_output
Enter two numbers:
11
964

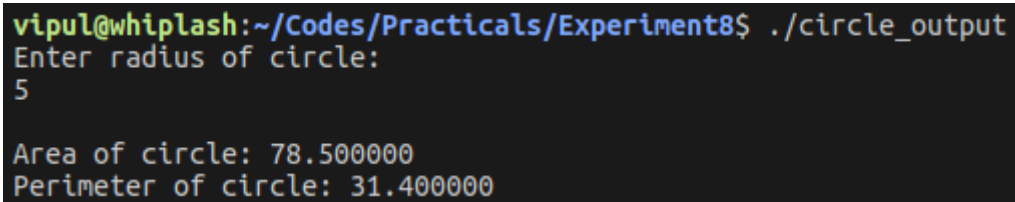
After swapping,
Num1: 964
Num2: 11
```

Program 2

// Program to calculate area and perimeter of a circle via call by reference

```
#include <stdio.h>
void cal(float *r, float *area, float *peri)
{
    *area = 3.14 * (*r) * (*r);
    *peri = 2 * 3.14 * (*r);
}

int main()
{
    float r, area, peri;
    printf("Enter radius of circle:\n");
    scanf("%f", &r);
    cal(&r, &area, &peri);
    printf("\nArea of circle: %f\nPerimeter of circle: %f\n\n", area, peri);
}
```

A terminal window with a dark background. The prompt is 'vipul@whiplash:~/Codes/Practicals/Experiment8\$'. The user has run './circle_output'. The program prompts 'Enter radius of circle:' and the user has entered '5'. The program then outputs 'Area of circle: 78.500000' and 'Perimeter of circle: 31.400000' on separate lines.

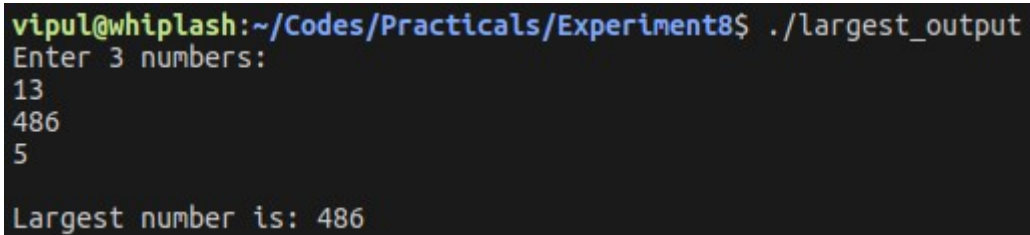
```
vipul@whiplash:~/Codes/Practicals/Experiment8$ ./circle_output
Enter radius of circle:
5
Area of circle: 78.500000
Perimeter of circle: 31.400000
```

Program 3

// Program to find largest among 3 numbers via call by reference

```
#include <stdio.h>
void largest(int *a, int *b, int *c, int *max)
{
    if (*a > *b && *a > *c)
        *max = *a;
    else if (*b > *a && *b > *c)
        *max = *b;
    else
        *max = *c;
}

int main()
{
    int a, b, c, max;
    printf("Enter 3 numbers:\n");
    scanf("%d %d %d", &a, &b, &c);
    largest(&a, &b, &c, &max);
    printf("\nLargest number is: %d\n\n", max);
}
```

A terminal window with a dark background. The prompt is 'vipul@whiplash:~/Codes/Practicals/Experiment8\$'. The command './largest_output' has been executed. The output shows 'Enter 3 numbers:' followed by three lines of input: '13', '486', and '5'. The final output line is 'Largest number is: 486'.

```
vipul@whiplash:~/Codes/Practicals/Experiment8$ ./largest_output
Enter 3 numbers:
13
486
5

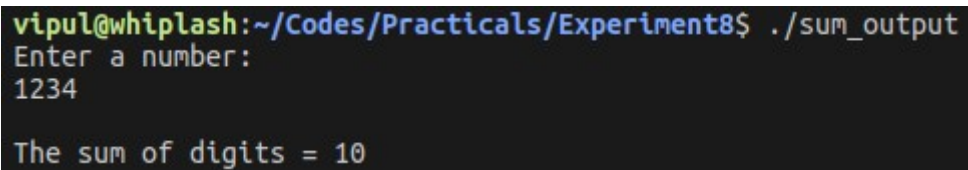
Largest number is: 486
```

Program 4

// Program to calculate sum of digits of a number via call by reference

```
#include <stdio.h>
void cal(int *num, int *sum)
{
    while (*num > 0)
    {
        *sum += *num % 10;
        *num /= 10;
    }
}

int main()
{
    int num, sum = 0;
    printf("Enter a number:\n");
    scanf("%d", &num);
    cal(&num, &sum);
    printf("\nThe sum of digits = %d\n\n", sum);
}
```

A terminal window with a dark background. The prompt is 'vipul@whiplash:~/Codes/Practicals/Experiment8\$'. The user has entered './sum_output'. The program has prompted 'Enter a number:' and the user has entered '1234'. The program has then printed 'The sum of digits = 10'.

```
vipul@whiplash:~/Codes/Practicals/Experiment8$ ./sum_output
Enter a number:
1234

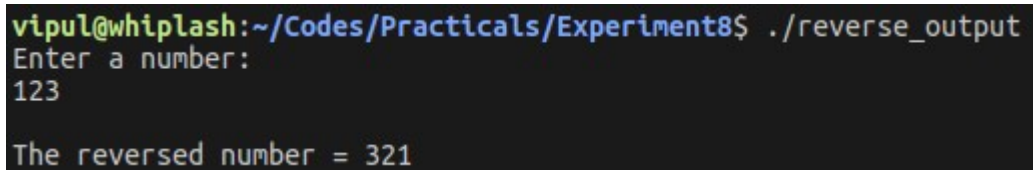
The sum of digits = 10
```

Program 5

// Program to reverse a number via call by reference

```
#include <stdio.h>
void cal(int *num, int *rev)
{
    while (*num > 0)
    {
        *rev = (*rev) * 10 + *num % 10;
        *num /= 10;
    }
}

int main()
{
    int num, rev = 0;
    printf("Enter a number:\n");
    scanf("%d", &num);
    cal(&num, &rev);
    printf("\nThe reversed number = %d\n\n", rev);
}
```



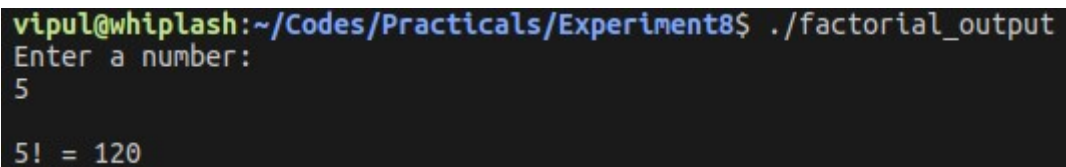
```
vipul@whiplash:~/Codes/Practicals/Experiment8$ ./reverse_output
Enter a number:
123
The reversed number = 321
```

Program 6

// Program to find factorial of a number via call by reference

```
#include <stdio.h>
void cal(int *num, int *fact)
{
    for (int i = 1; i <= *num; i++)
        *fact *= i;
}

int main()
{
    int num, fact = 1;
    printf("Enter a number:\n");
    scanf("%d", &num);
    int temp=num;
    cal(&num, &fact);
    printf("\n%d! = %d\n\n",temp, fact);
}
```

A terminal window with a dark background. The prompt is 'vipul@whiplash:~/Codes/Practicals/Experiment8\$'. The user has entered './factorial_output'. The program prompts 'Enter a number:' and the user has entered '5'. The program outputs '5! = 120' followed by a blank line.

```
vipul@whiplash:~/Codes/Practicals/Experiment8$ ./factorial_output
Enter a number:
5

5! = 120
```