

Exercise 1

1. Simple Calculator

Aim:

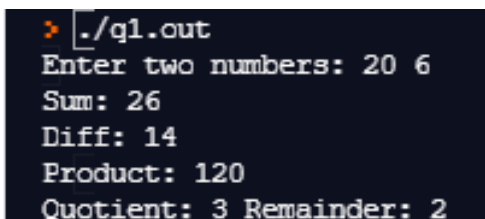
To add, subtract, multiply and divide two numbers by getting inputs from the user.

Code:

```
//to add, subtract, multiply and divide two numbers by getting input from the user
#include<stdio.h>

int main(void){
    int a,b, sum, diff, prod, quo, rem;
    //input
    printf("Enter two numbers: ");
    scanf("%d %d", &a, &b);
    //calculating
    sum=a+b;
    diff=a-b;
    prod=a*b;
    quo=a/b;
    rem=a%b;
    //result
    printf("Sum: %d", sum);
    printf("\nDiff: %d", diff);
    printf("\nProduct: %d", prod);
    printf("\nQuotient: %d Remainder: %d \n", quo, rem);

    return 0;
}
```

Output:

```
> ./q1.out
Enter two numbers: 20 6
Sum: 26
Diff: 14
Product: 120
Quotient: 3 Remainder: 2
```

Result:

A program for performing basic arithmetic operations is written and executed.

Exercise 1

2. Swapping two numbers

Aim:

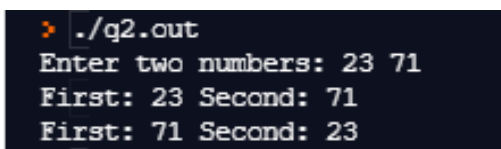
To swap the values of two variables using a temporary variable.

Code:

```
//to swap the values of two variables using a temp variable
#include<stdio.h>

int main(void){
    int a,b, temp;
    //input
    printf("Enter two numbers: ");
    scanf("%d %d", &a, &b);
    printf("First: %d Second: %d", a, b);
    //swapping
    temp=a;
    a=b;
    b=temp;
    //result
    printf("\nFirst: %d Second: %d \n", a, b);

    return 0;
}
```

Output:

```
> ./q2.out
Enter two numbers: 23 71
First: 23 Second: 71
First: 71 Second: 23
```

Result:

A program for swapping two numbers is written and executed.

Exercise 1**3. Last digit of an Integer****Aim:**

To print the last digit of an integer.

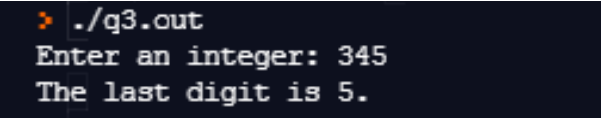
Code:

```
//to print the last digit of an integer
#include<stdio.h>

int main(void){
    int num;
    //input
    printf("Enter an integer: ");
    scanf("%d", &num);

    //result
    printf("The last digit is %d.\n", num%10);

    return 0;
}
```

Output:

```
> ./q3.out
Enter an integer: 345
The last digit is 5.
```

Result:

A program for finding the last digit of an integer is written and executed.

Exercise 1**4. Total and Average Marks****Aim:**

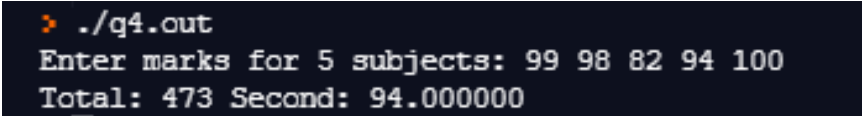
To get the marks for five subjects and to compute the total and average.

Code:

```
//to get the marks for 5 subjects and compute total and average
#include<stdio.h>

int main(void){
    int m1, m2, m3, m4, m5, total;
    float avg;
    //input
    printf("Enter marks for 5 subjects: ");
    scanf("%d %d %d %d %d", &m1, &m2, &m3, &m4, &m5);
    //calculating
    total=m1+m2+m3+m4+m5;
    avg=total/5;
    //result
    printf("Total: %d Second: %f \n", total, avg);

    return 0;
}
```

Output:

```
> ./q4.out
Enter marks for 5 subjects: 99 98 82 94 100
Total: 473 Second: 94.000000
```

Result:

A program to compute the total and average of the marks for five subjects is written and executed.

Exercise 1**5. Area of Rectangle, Triangle and Circle****Aim:**

To find the area of a rectangle, a triangle and a circle by getting inputs from the user.

Code:

```
//to find the areas of rectangle, triangle and circle by getting inputs from the user
#include <stdio.h>
#include <math.h>

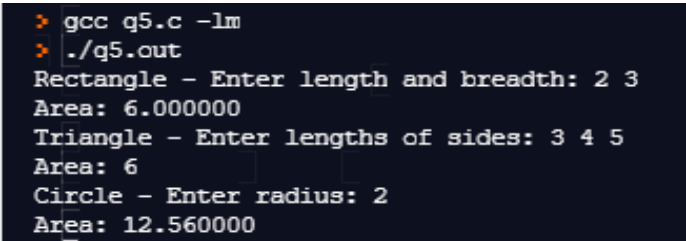
int main(void){
    float l, b, x, y, z, s, h, r;

    //rectangle
    printf("Rectangle - Enter length and breadth: ");
    scanf("%f %f", &l, &b);
    printf("Area: %f\n", l*b);

    //triangle
    printf("Triangle - Enter lengths of sides: ");
    scanf("%f %f %f", &x, &y, &z);
    s=(x+y+z)/2;
    h=s*(s-x)*(s-y)*(s-z);
    printf("Area: %g\n", sqrt(h));

    //circle
    printf("Circle - Enter radius: ");
    scanf("%f", &r);
    printf("Area: %f\n", 3.14*r*r);

    return 0;
}
```

Output:

```
> gcc q5.c -lm
> ./q5.out
Rectangle - Enter length and breadth: 2 3
Area: 6.000000
Triangle - Enter lengths of sides: 3 4 5
Area: 6
Circle - Enter radius: 2
Area: 12.560000
```

Result:

A program for computing the areas of a rectangle, a triangle and a circle is written and executed.

Exercise 1

6. Evaluating an Expression

Aim:

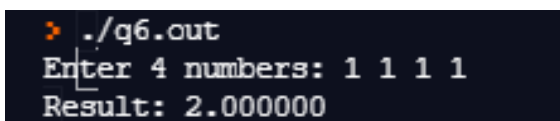
To get values for a, b, c and d from the user and evaluate the expression $a*b+c^d$.

Code:

```
//to calculate the value of the expression by getting input from the user
#include <stdio.h>
#include <math.h>

int main(void){
    int a,b, c, d;
    float res;
    //input
    printf("Enter 4 numbers: ");
    scanf("%d %d %d %d", &a, &b, &c, &d);
    //calculating
    res=a*b+pow(c,d);
    //result
    printf("Result: %f\n", res);

    return 0;
}
```

Output:

```
./q6.out
Enter 4 numbers: 1 1 1 1
Result: 2.000000
```

Result:

A program to evaluate the given expression is written and executed.

Exercise 1

7. Simple Interest

Aim:

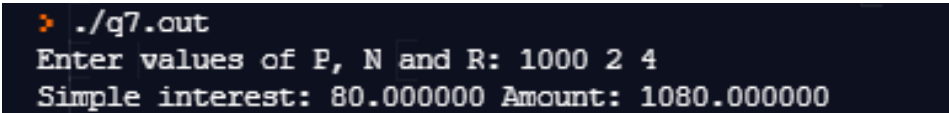
To calculate the simple interest by getting appropriate inputs from the user.

Code:

```
//to calculate simple interest
#include <stdio.h>

int main(){
    float p,n,r,SI,amt;
    //input
    printf("Enter values of P, N and R: ");
    scanf("%f %f %f", &p, &n, &r);
    //calculation
    SI=(p*n*r)/100;
    amt=p+SI;
    //result
    printf("Simple interest: %f Amount: %f\n", SI, amt);

    return 0;
}
```

Output:

```
> ./q7.out
Enter values of P, N and R: 1000 2 4
Simple interest: 80.000000 Amount: 1080.000000
```

Result:

A program to calculate the simple interest is written and executed.

Exercise 1**8. Net pay****Aim:**

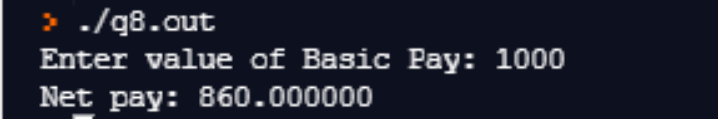
To find the net salary of an employee by getting the basic pay as input.

Code:

```
//to find the net pay of an employee given the basic pay as input
#include <stdio.h>

int main(){
    float bp, da, hra, cca, ins, pf, gp, ded, np;
    //input
    printf("Enter value of Basic Pay: ");
    scanf("%f", &bp);
    //calculation
    da=0.88*bp;
    hra=0.08*bp;
    cca=1000;
    ins=2000;
    pf=0.1*bp;
    gp=bp+da+hra+cca;
    ded=ins+pf;
    np=gp-ded;
    //result
    printf("Net pay: %f\n", np);

    return 0;
}
```

Output:

```
> ./q8.out
Enter value of Basic Pay: 1000
Net pay: 860.000000
```

Result:

A program to calculate the net salary of an employee is written and executed.