Name: *Krithika Swaminathan*
Roll No.: *205001057*

Date: 24/05/2021   <u>**Practice questions**</u>

1. Calculator

Aim:

To find the sum, product and sum of squares of two numbers by getting inputs from the user.

Code:

```c
//to find the sum, product and sum of squares of two numbers input by the user
#include<stdio.h>
#include<math.h>

int main(void){
  int a,b;
  //input
  printf("Enter the first number: ");
  scanf("%d", &a);
  printf("Enter the second number: ");
  scanf("%d", &b);
  printf("a:%d b:%d\n", a,b);

  //result
  printf("Sum of numbers: %d\n", a+b);
  printf("Product of numbers: %d\n", a*b);
  printf("Sum of squares of numbers: %d \n", (int)(pow(a,2)+pow(b,2)));

  return 0;
}
```

Output:

```
gcc q1.c -lm
./q1.out
Enter the first number: 10
Enter the second number: 20
a:10 b:20
Sum of numbers: 30
Product of numbers: 200
Sum of squares of numbers: 500
```

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2. Details of a person

Aim:

To get the required output.
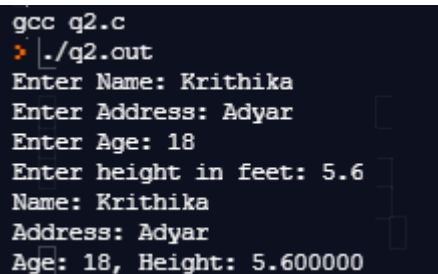
Code:

```c
//to get the desired output by storing details of a person
#include<stdio.h>

int main(void){
  char Name[30], Address[10];
  int Age;
  float Height;
  //input
  printf("Enter Name: ");
  scanf("%s", Name);
  printf("Enter Address: ");
  scanf("%s", Address);
  printf("Enter Age: ");
  scanf("%d", &Age);
  printf("Enter height in feet: ");
  scanf("%f", &Height);

  //result
  printf("Name: %s\nAddress: %s\nAge: %d, Height: %f\n", Name,Address,Age,Height);

  return 0;
}
```

Output:

```
gcc q2.c
> ./q2.out
Enter Name: Krithika
Enter Address: Adyar
Enter Age: 18
Enter height in feet: 5.6
Name: Krithika
Address: Adyar
Age: 18, Height: 5.600000
```

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3. Print name 10 times

Aim:

To print the given name 10 times
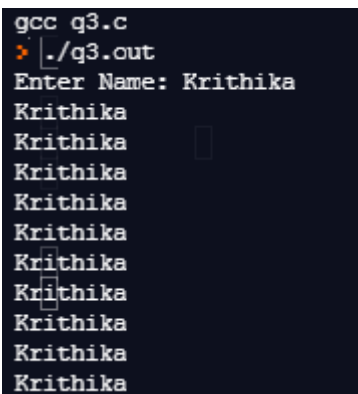
Code:

```c
//to get the name from the user and print 10 times
#include<stdio.h>

int main(void){
  char Name[20];
  //input
  printf("Enter Name: ");
  scanf("%s",Name);

  //result
  for (int i=1;i<=10;i++){
    printf("%s\n",Name);
  }

  return 0;
}
```

Output:

```
gcc q3.c
> ./q3.out
Enter Name: Krithika
Krithika
Krithika
Krithika
Krithika
Krithika
Krithika
Krithika
Krithika
Krithika
Krithika
```

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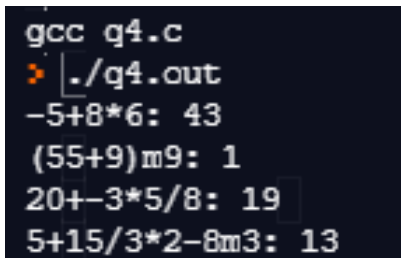
4. Evaluate

Aim:

To evaluate each of the given expressions and print the output.

Code:

```c
//to evaluate the given expressions and print the output
#include<stdio.h>
#include<math.h>

int main(void){
  printf("-5+8*6: %d\n",-5+8*6);
  printf("(55+9)m9: %d\n",(55+9)%9);
  printf("20+-3*5/8: %d\n",20+-3*5/8);
  printf("5+15/3*2-8m3: %d\n",5+15/3*2-8%3);

  return 0;
}
```

Output:

```
gcc q4.c
> ./q4.out
-5+8*6: 43
(55+9)m9: 1
20+-3*5/8: 19
5+15/3*2-8m3: 13
```

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5. Hello <name>

Aim:

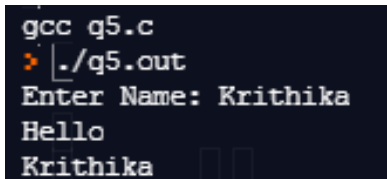To print "Hello" on the screen and then print your name on a separate line.

Code:

```c
//to print "hello" and your name on the next line
#include<stdio.h>

int main(void){
  char Name[20];
  //input
  printf("Enter Name: ");
  scanf("%s",Name);

  //result
  printf("Hello\n%s\n",Name);

  return 0;
}
```

Output:

```
gcc q5.c
> ./q5.out
Enter Name: Krithika
Hello
Krithika
```

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6. Sum of two numbers

Aim:

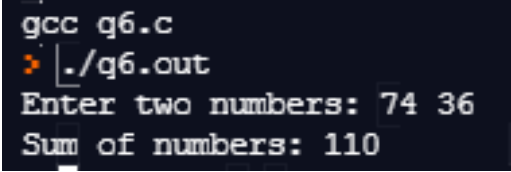To print the sum of two numbers.

Code:

```c
//to find the sum of two numbers input by the user
#include<stdio.h>

int main(void){
  int a,b;
  //input
  printf("Enter two numbers: ");
  scanf("%d %d", &a,&b);

  //result
  printf("Sum of numbers: %d\n", a+b);

  return 0;
}
```

Output:

```
gcc q6.c
> ./q6.out
Enter two numbers: 74 36
Sum of numbers: 110
```

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7. Multiplication table

Aim:

To print the multiplication table upto 10 of a number given as input by the user.
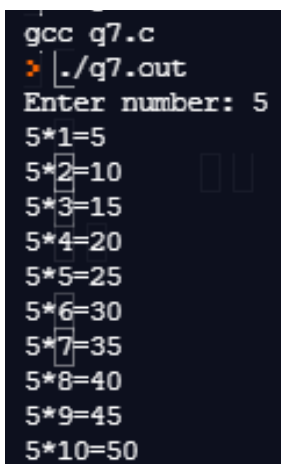
Code:

```c
//to print the multiplication table upto 10 for a number
#include<stdio.h>

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

  //result
  for (int i=1;i<=10;i++){
    printf("%d*%d=%d\n",num,i,num*i);
  }

  return 0;
}
```

Output:

```
gcc q7.c
> ./q7.out
Enter number: 5
5*1=5
5*2=10
5*3=15
5*4=20
5*5=25
5*6=30
5*7=35
5*8=40
5*9=45
5*10=50
```

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8. Area of hexagon and polygon

Aim:

To find the area of a hexagon given the length of the side.
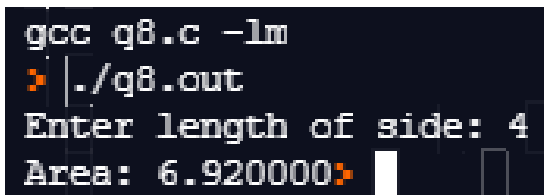
Code:

```c
//to calculate and print the area of a regular hexagon
#include<stdio.h>
#include<math.h>

int main(void){
  int a;
  //input
  printf("Enter length of side: ");
  scanf("%d",&a);
  //calculation
  float area=(1.73/4)*pow(a,2);
  //result
  printf("Area: %f",area);

  return 0;
}
```

Output:

```
gcc q8.c -lm
> ./q8.out
Enter length of side: 4
Area: 6.920000>
```

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9. Distance between 2 points

Aim:

To calculate the distance between two points.

Code:

```c
//to print the distance between two given points
#include<stdio.h>
#include<math.h>

int main(void){
  int x1,x2,y1,y2,dis;
  //input
  printf("Enter x1,y1,x2,y2 in that order: ");
  scanf("%d %d %d %d",&x1,&y1,&x2,&y2);
  //calculation
  dis=sqrt(pow(x2-x1,2)+pow(y2-y1,2));
  //result
  printf("Distance: %d",dis);

  return 0;
}
```

Output:

```
gcc q9.c -lm
> ./q9.out
Enter x1,y1,x2,y2 in that order: 3 4 0 0
Distance: 5>
```

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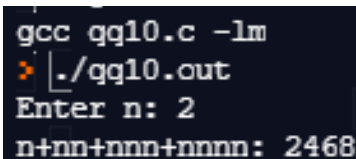# 10. Evaluate the expression

Aim:

To get n as input from the user and evaluate the expression n+nn+nnn+nnnn.

Code:

```c
//to get n as input from the user and compute the value of n+nn+nnn+nnnn
#include<stdio.h>
#include<math.h>

int main(void){
  int n,sum=0,term;
  //input
  printf("Enter n: ");
  scanf("%d",&n);
  //calculation
  for (int i=0;i<4;i++){
    term=0;
    for (int j=0; j<=i; j++){
      term+=n*pow(10,j);
    }
    sum+=term;
  }
  //result
  printf("n+nn+nnn+nnnn: %d",sum);

  return 0;
}
```

Output:

```
gcc qq10.c -lm
> ./qq10.out
Enter n: 2
n+nn+nnn+nnnn: 2468
```