/* 1. Write a C program to prove that Euclid's algorithm computes the greatest common divisor of two positive give n integers. */

```
#include <stdio.h>

 int main(){
   int n1,n2,r;
   printf("---Euclid's Algorithm---\n\n");

   printf("Please Enter First Positive Value : ");
   scanf("%d",&n1);

   printf("Please Enter Second Positive Value : ");
   scanf("%d",&n2);

  if (n1 == 0 || n2 == 0){
   printf("!! Error : One of the values equals 0. !!");
  }
  else if(n1<0 || n2<0 ){
   printf("!! Error : Please Enter Positive Values. !!");
  }
  else if (n1 > n2) {

   while (n2 != 0) {
      r = n1 % n2;
     n1 = n2;
     n2 = r;
   }

   printf("GCD is : %d",n1);
}
  else if(n2 > n1 ){

   while (n1 != 0) {
      r = n2 % n1;
     n2 = n1;
     n1 = r;
   }

   printf("GCD is : %d",n2);

  }
  else{

   printf("GCD is : %d",n1);
  }


return 0 ;
}
```

/* 2. Write a C program that will accept an integer and convert it into a binary representation.*/

```
#include <stdio.h>

int main() {
   int number ,binary = 0,remainder , i = 1 ;

 printf("---INTEGER TO BINARY CONVERSION PROGRAM---\n\n");

   printf("Enter a Integer Number: ");
   scanf("%d", &number);

  while (number != 0) {
   remainder = number % 2;
   number /= 2;
   binary += remainder * i;
   i *= 10;
  }

   printf("\nBinary Representation : %d\n",binary);

   return 0;
}
```

/* 3. Write a C program to divide the two given integers using subtraction operator.*/

```
#include <stdio.h>

int main(){
int n1,n2,division,remainder;
 printf("---DIVIDE USING SUBTRACTION OPERATOR---\n\n");

 printf("Please Enter First Value : ");
 scanf("%d",&n1);

 printf("Please Enter Second Value : ");
 scanf("%d",&n2);

 remainder=n1;

  for(division=0 ;n2<=remainder ; division++){
    remainder=remainder-n2;
  }

 printf("\nDivision : %d\n",division );
 printf("Remainder :%d",remainder );
 return 0 ;
}
```

/*4. Write a C program to multiply two given integers without using the multiply operator */

```
#include <stdio.h>

int main(){

int fnumber,snumber,result,counter=0;

printf("---MULTIPLY WITHOUT USING THE MULTIPLY OPERATOR---\n\n");

printf("Please Enter First Number : ");
scanf("%d",&fnumber);

printf("Please Enter Second Number : ");
scanf("%d",&snumber);

 while (counter<snumber) {
  result = result + fnumber ;
  counter ++ ;
 }
printf("\nResult : %d ",result);

return 0 ;

}
```

/* 5. Write a C program to accept a positive number and repeatedly add all its digits until the result has only one digi
t.*/

```
#include <stdio.h>

int main(){

int number,digits1=0,digits=0;

printf("---SINGLE DIGIT SUM OF NUMBERS---\n\n");

printf("Please Enter A Positive Number : ");
scanf("%d",&number);

while (number != 0) {
 digits = digits + (number % 10) ;
 number = number / 10 ;
}

if (digits>=10) {

 while(digits!=0){
  digits1=digits1 + (digits % 10);
  digits = digits / 10 ;
 }
```

```
 printf("\nSum of Digits up to a Single Digit : %d\n",digits1 );
}

else{
 printf("\nSum of Digits up to a Single Digit : %d\n",digits);
}

return 0 ;

}
```