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STD: BTech Cse 1st year DIV: B78 ROLL NO.:

SUBJECT: Computer Science - Programming in C

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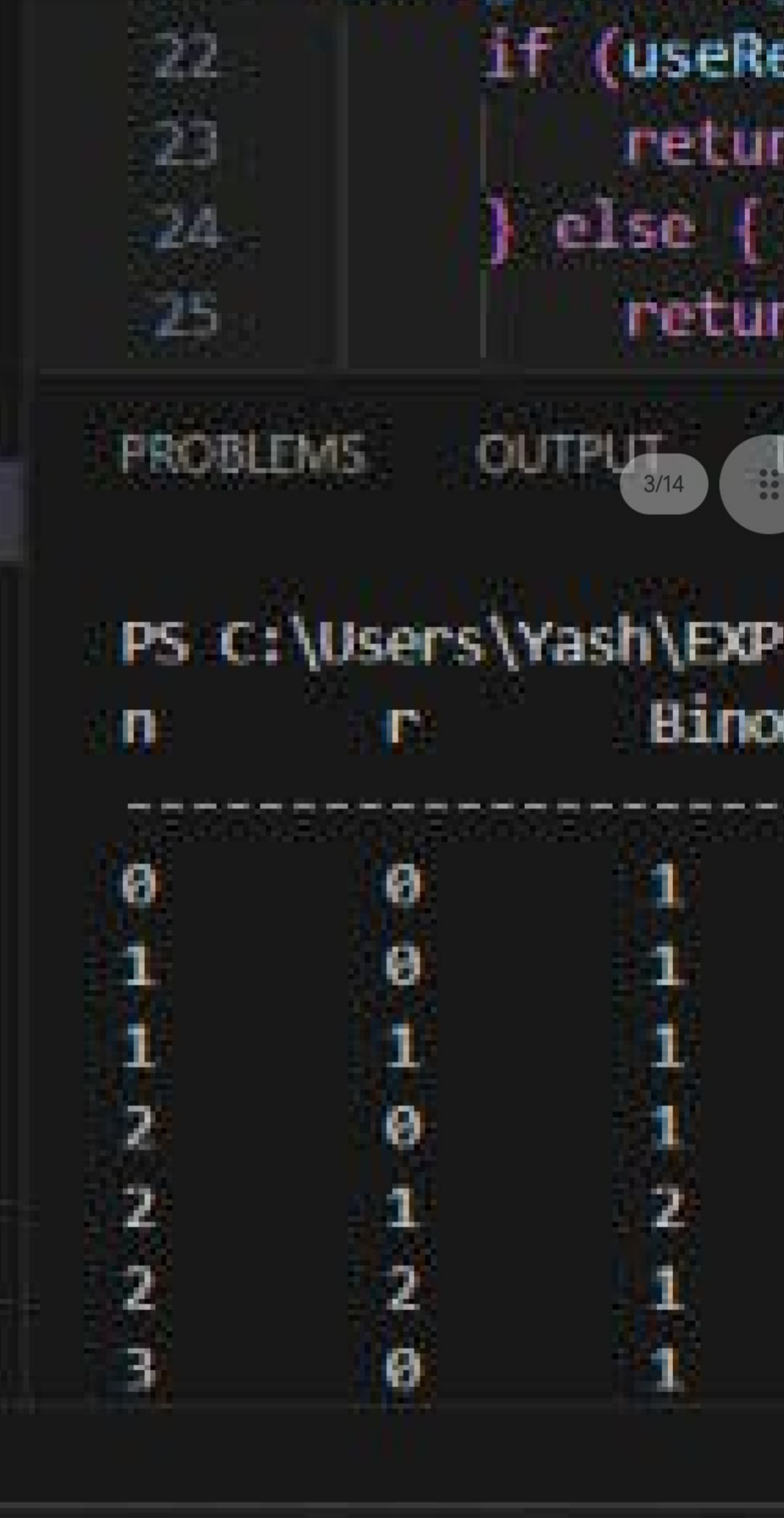
Experiment 6-1 →

```
Q→ # include <stdio.h>
int fact (int n) {
        if (n==0){
        return 1;
   } else {
        return n* fact (n-1);
        }
   }
  int fact-non (int n){
      int result = 1;
       for (int i=1; i<= n; i++ ){
         result * =i ;
        }
       return result;
     }
 int bin (int n, int r) {
      if (r<0|| r>n) {
         return 0;
      }
     return fact_non (n) /(fact non_(r) * fact_non(n-r));
     }
int main () {
      printf (" computting factorials & binomial coefficients");
  prinf ("- - - -\n");
```



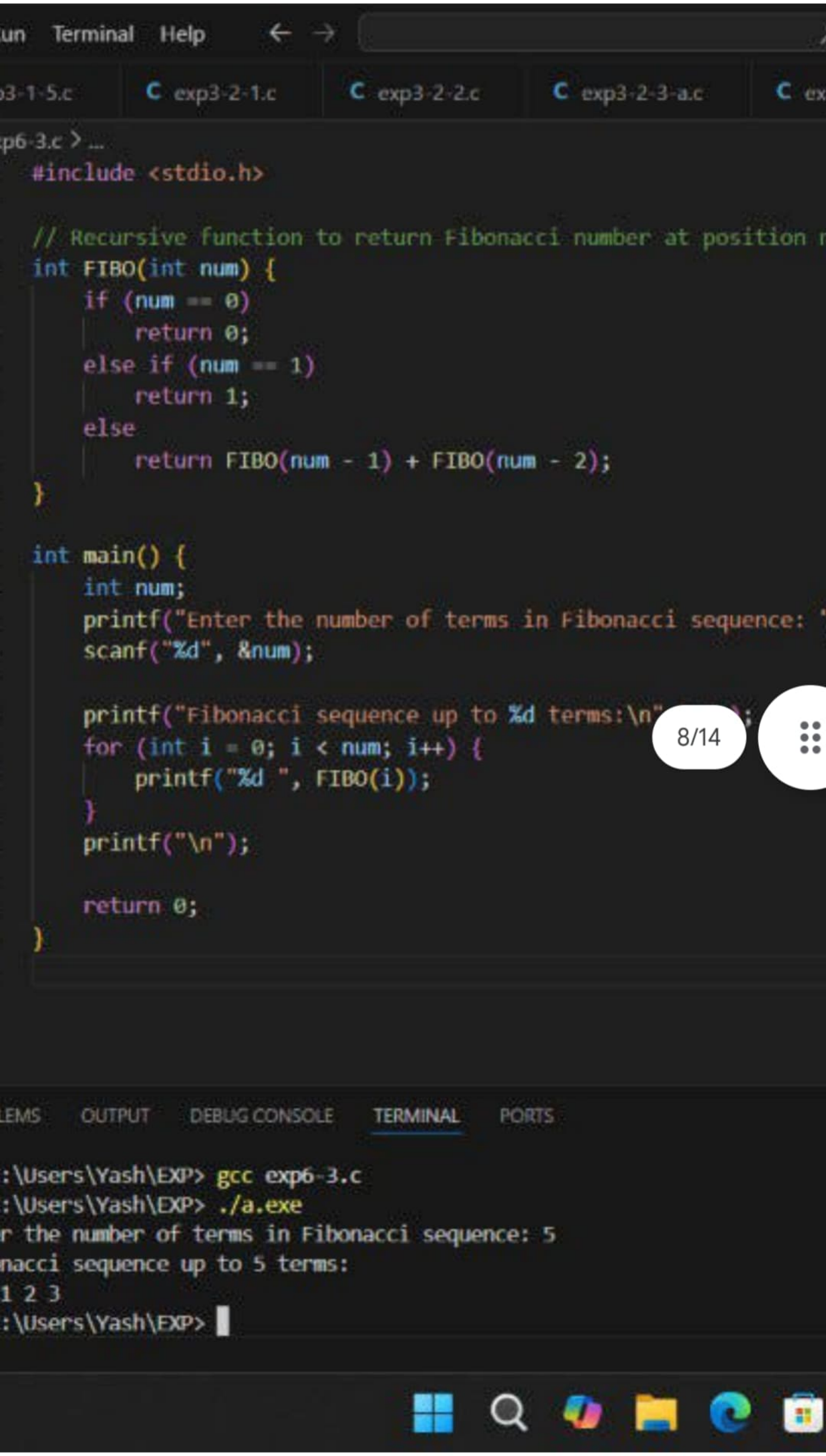
```
if (useRe
    retur
} else {
    retur
```

```
PS C:\Users\Yash\EXP
n          r          Bino
-----------------------
0          0          1
1          0          1
1          1          1
2          0          1
2          1          2
2          2          1
3          0          1
```

```
for(int n=0 ; n<=5 ;n++ ){
    printf ("%d\", n );
     for (int r=0;.r<=5;r++){
        if r<=n {
            printf ("%d", bin (n,r)i
        } else{
            printf ("    |\n ");
         }
      }
     printf("\n");
      }
     return 0;
    }
```

2→ ~~int~~ # include <stdio.h>

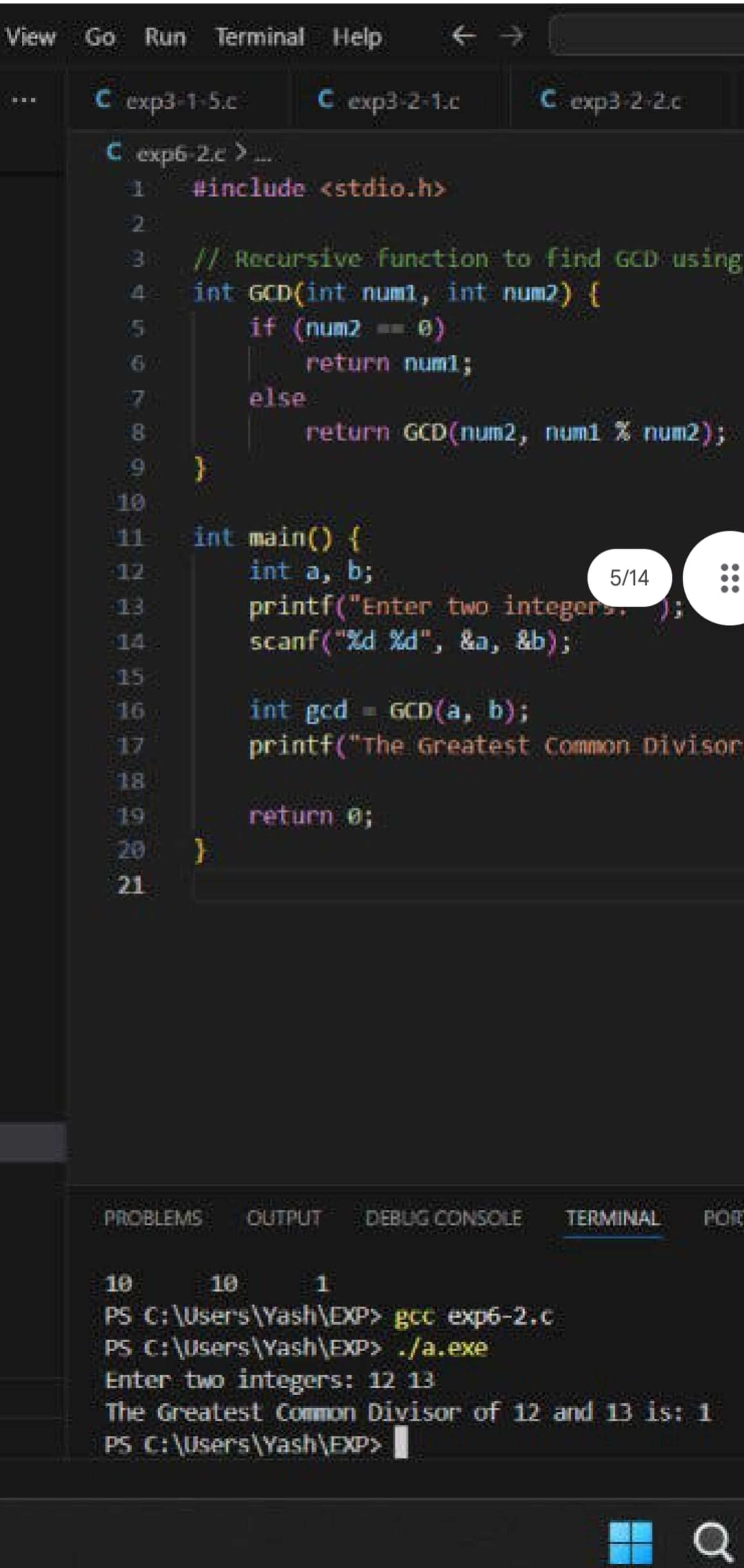
```
    int gcd (int num1, int num2 ){
    if(num2 ==0 ){
          return ~~nd~~ num1 ;
      }
     else {
          return gcd(num2, num1 % num2);
       }
     }
  int main () {
     int a, b ,result;
     printf ("Enter two positive integers : ");
     Scanf (" %d %d", &a, &b);
   result = gcd ( a ,b);
   Printf ("%d", result )i
        return 0 ;
    }
```



```c
#include <stdio.h>

// Recursive function to return Fibonacci number at position r
int FIBO(int num) {
    if (num == 0)
        return 0;
    else if (num == 1)
        return 1;
    else
        return FIBO(num - 1) + FIBO(num - 2);
}

int main() {
    int num;
    printf("Enter the number of terms in Fibonacci sequence: "
    scanf("%d", &num);

    printf("Fibonacci sequence up to %d terms:\n"    ;
    for (int i = 0; i < num; i++) {
        printf("%d ", FIBO(i));
    }
    printf("\n");

    return 0;
}
```

```
:\Users\Yash\EXP> gcc exp6-3.c
:\Users\Yash\EXP> ./a.exe
r the number of terms in Fibonacci sequence: 5
nacci sequence up to 5 terms:
1 2 3
:\Users\Yash\EXP>
```

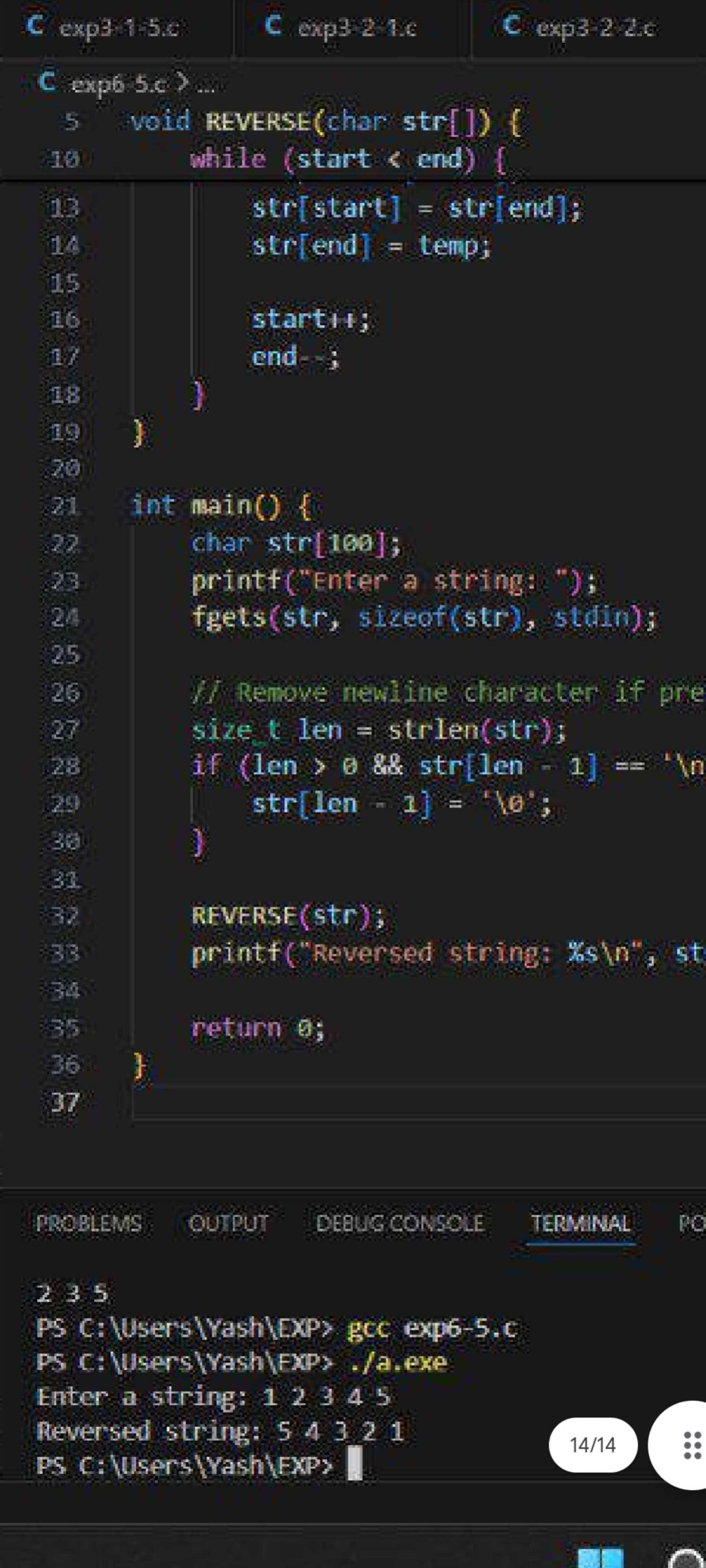
6.3→
```
#include <stdio.h>
     int FIBO (int num) {
          int num == 0 {
               return 0;
          } else if (num == 1) {
               return 1;
               }
          else {
               return FIBO (num-1) + FiBo (num-2) ;
               }
          }
     int main () {
          int count i;
     printf (" The number of fibonacci terms you want:") ;
          scanf ("%d", & count ) ;

     if (count <0 ) {
          printf ("please enter a positive no. "] ;
          return 1;
          }
     printf (" fibonacci Seq upto %. terms : \n", count) ;

     for (i = 0; i < n ; i++) {
          printf ("%d ", FIBO (i) ) ;
     }
     printf ("\n",) ;
     }
     return 0;
   }
```



```c
#include <stdio.h>

// Recursive function to find GCD using
int GCD(int num1, int num2) {
    if (num2 == 0)
        return num1;
    else
        return GCD(num2, num1 % num2);
}

int main() {
    int a, b;
    printf("Enter two integers: ");
    scanf("%d %d", &a, &b);

    int gcd = GCD(a, b);
    printf("The Greatest Common Divisor

    return 0;
}

```

```
10      10      1
PS C:\Users\Yash\EXP> gcc exp6-2.c
PS C:\Users\Yash\EXP> ./a.exe
Enter two integers: 12 13
The Greatest Common Divisor of 12 and 13 is: 1
PS C:\Users\Yash\EXP> 
```

```
6.5→  # include <stdio.h>
      # include <string.h>

   void Reverse ( char str[ ]){
         int i, j ;
          char temp;
       for (i=0 , j = strlen (str)-1; i<j ;i++, j--){
           temp = str[i];
           str[i] = str[j]
             str[j] = temp;
         }
       }
     int main {
          char string [100]
          Printf ("Enter a string : ");
          scanf ("%s", & string );

    Revers (string);
   printf (" The string reversed is : %s ", Reverse (string));
     return 0;
     }
```



```c
void REVERSE(char str[]) {
    while (start < end) {
        str[start] = str[end];
        str[end] = temp;

        start++;
        end--;
    }
}

int main() {
    char str[100];
    printf("Enter a string: ");
    fgets(str, sizeof(str), stdin);

    // Remove newline character if pre
    size_t len = strlen(str);
    if (len > 0 && str[len - 1] == '\n
        str[len - 1] = '\0';
    }

    REVERSE(str);
    printf("Reversed string: %s\n", st

    return 0;
}
```

```
2 3 5
PS C:\Users\Yash\EXP> gcc exp6-5.c
PS C:\Users\Yash\EXP> ./a.exe
Enter a string: 1 2 3 4 5
Reversed string: 5 4 3 2 1
PS C:\Users\Yash\EXP>
```