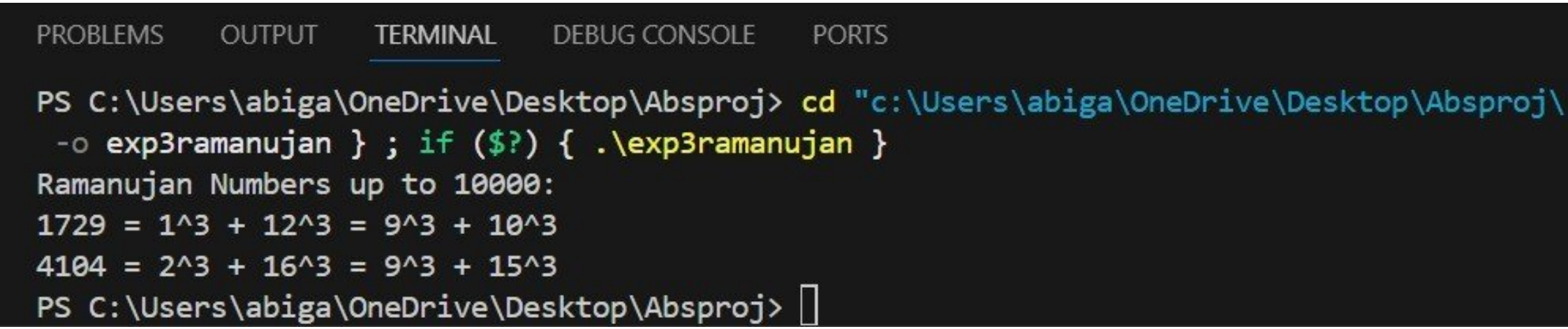
5. Ramanujan Number is the smallest number that can be expressed as the sum of two cubes in two different ways.
WAP to print all such numbers up to a reasonable limit.

```
#include <stdio.h>
int main () {
int limit = 10000;
printf ("Ramanujan Numbers up to %d : \n", limit);
for (int a = 1; a*a*a < limit; a++) {
    for (int b = a; a*a*a + b*b*b < limit; b++) {
    int sum1 = a*a*a + b*b*b;
        for (int c = a+1; c*c*c < limit; c++) {
        for (int d=c; c*c*c + d*d*d < limit; d++) {
        int sum2 = c*c*c + d*d*d;
        if (sum1 == sum2 && (a!=c || b!=d)) {
        printf ("%d = %d^3 + %d^3 = %d^3 + %d^3 \n", sum1, a, b, c, d);
         }
        }
       }
      }
     }
return 0;
}
```

exp3loopspyramid1.c | exp3ramanujan.c

exp3ramanujan.c > main()

```c

#include <stdio.h>

int main() {
    int limit = 10000;

    printf("Ramanujan Numbers up to %d:\n", limit);

    for (int a = 1; a * a * a < limit; a++) {
        for (int b = a; a * a * a + b * b * b < limit; b++) {
            int sum1 = a * a * a + b * b * b;

            for (int c = a + 1; c * c * c < limit; c++) {
                for (int d = c; c * c * c + d * d * d < limit; d++) {
                    int sum2 = c * c * c + d * d * d;

                    if (sum1 == sum2 && (a != c || b != d)) {
                        printf("%d = %d^3 + %d^3 = %d^3 + %d^3\n", sum1, a, b, c, d);
                    }
                }
            }
        }
    }

    return 0;
}

```


PROBLEMS
OUTPUT
TERMINAL
DEBUG CONSOLE
PORTS
PS C:\Users\abiga\OneDrive\Desktop\Absproj> cd "c:\Users\abiga\OneDrive\Desktop\Absproj\
-o exp3ramanujan } ; if ($?) { .\exp3ramanujan }
Ramanujan Numbers up to 10000:
1729 = 1^3 + 12^3 = 9^3 + 10^3
4104 = 2^3 + 16^3 = 9^3 + 15^3
PS C:\Users\abiga\OneDrive\Desktop\Absproj>