Programming Fundamentals Lab – 8

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BS. Software Eng. - 01B

Q1 – Sequence of Prime Number.

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

Apples-MacBook-Pro:Lab-08 apple$ gcc -o output 3103-Q1.c && ./output
Enter the start of the range: 1
Enter the end of the range: 15
Prime numbers between 1 and 15 are:
2 3 5 7 11 13
Apples-MacBook-Pro:Lab-08 apple$
```

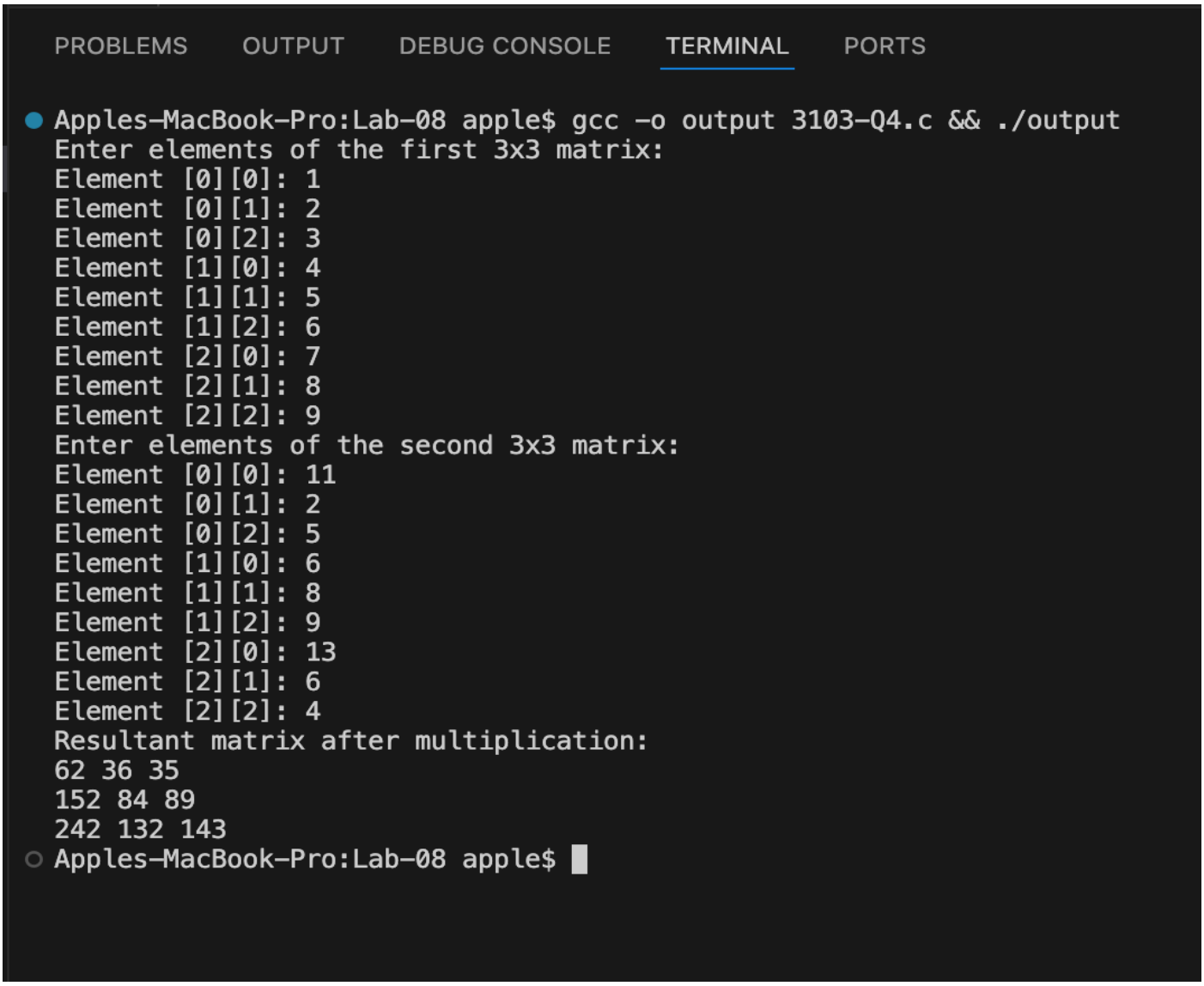
Q2 – Pattern of Odd Numbers

```
Apples-MacBook-Pro:Lab-08 apple$ gcc -o output 3103-Q2.c && ./output
Enter an odd number to start the pattern: 13
13 11 9 7 5 3 1
11 9 7 5 3 1
9 7 5 3 1
7 5 3 1
5 3 1
3 1
1
Apples-MacBook-Pro:Lab-08 apple$
```

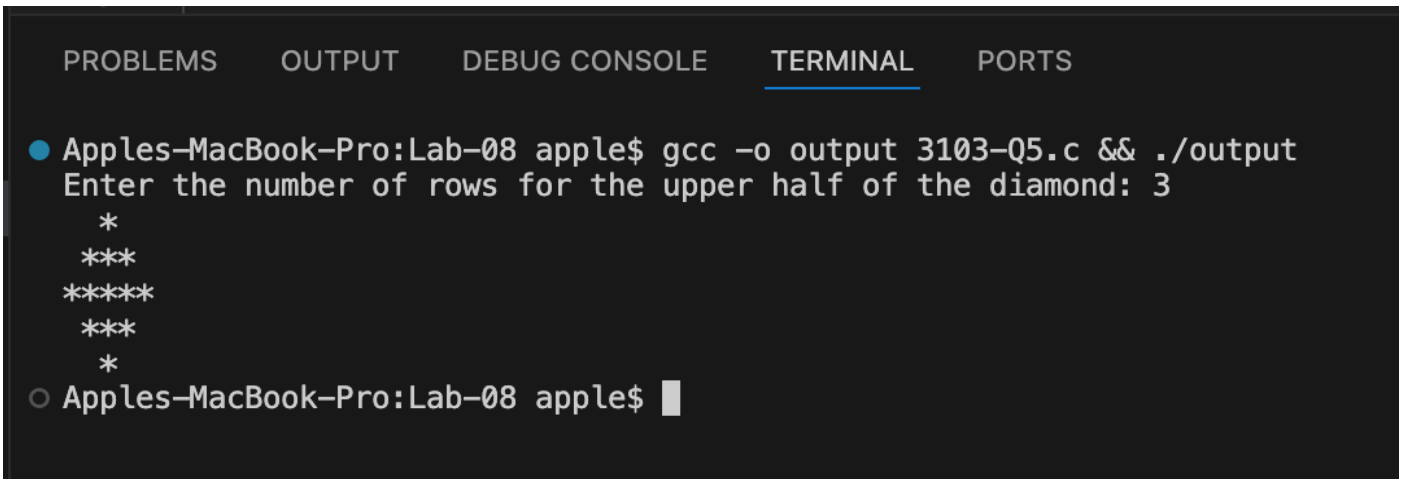
Q3 – Find Saddle Point.

```
Apples-MacBook-Pro:Lab-08 apple$ gcc -o output 3103-Q3.c && ./output
Enter elements of the 3x3 matrix:
Element [0][0]: 1
Element [0][1]: 2
Element [0][2]: 3
Element [1][0]: 4
Element [1][1]: 5
Element [1][2]: 6
Element [2][0]: 7
Element [2][1]: 8
Element [2][2]: 9
Saddle point found at [2][0]: 7
Apples-MacBook-Pro:Lab-08 apple$
```

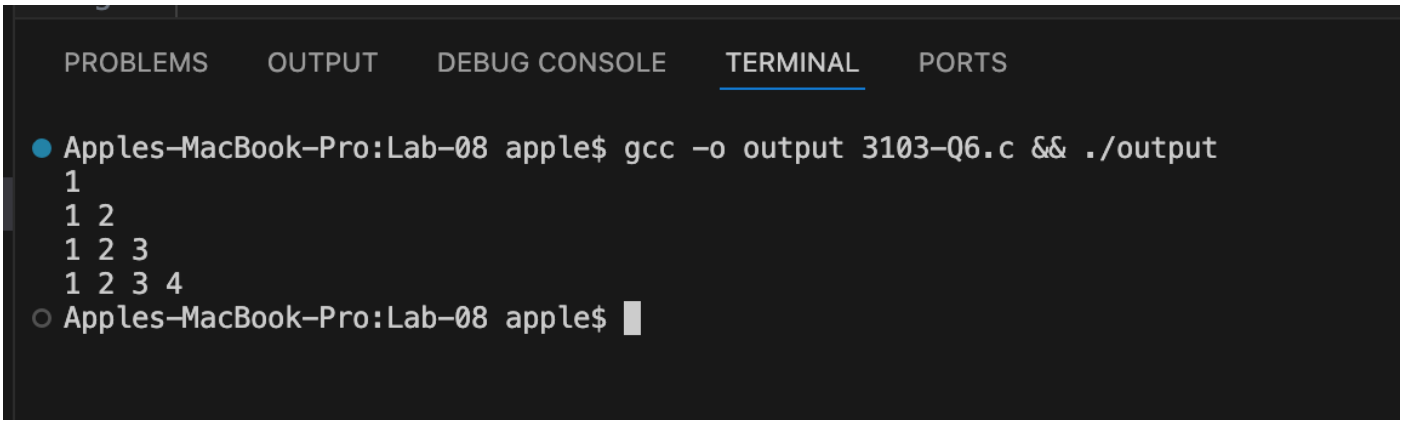
Q4 – Matrix Multiplication.



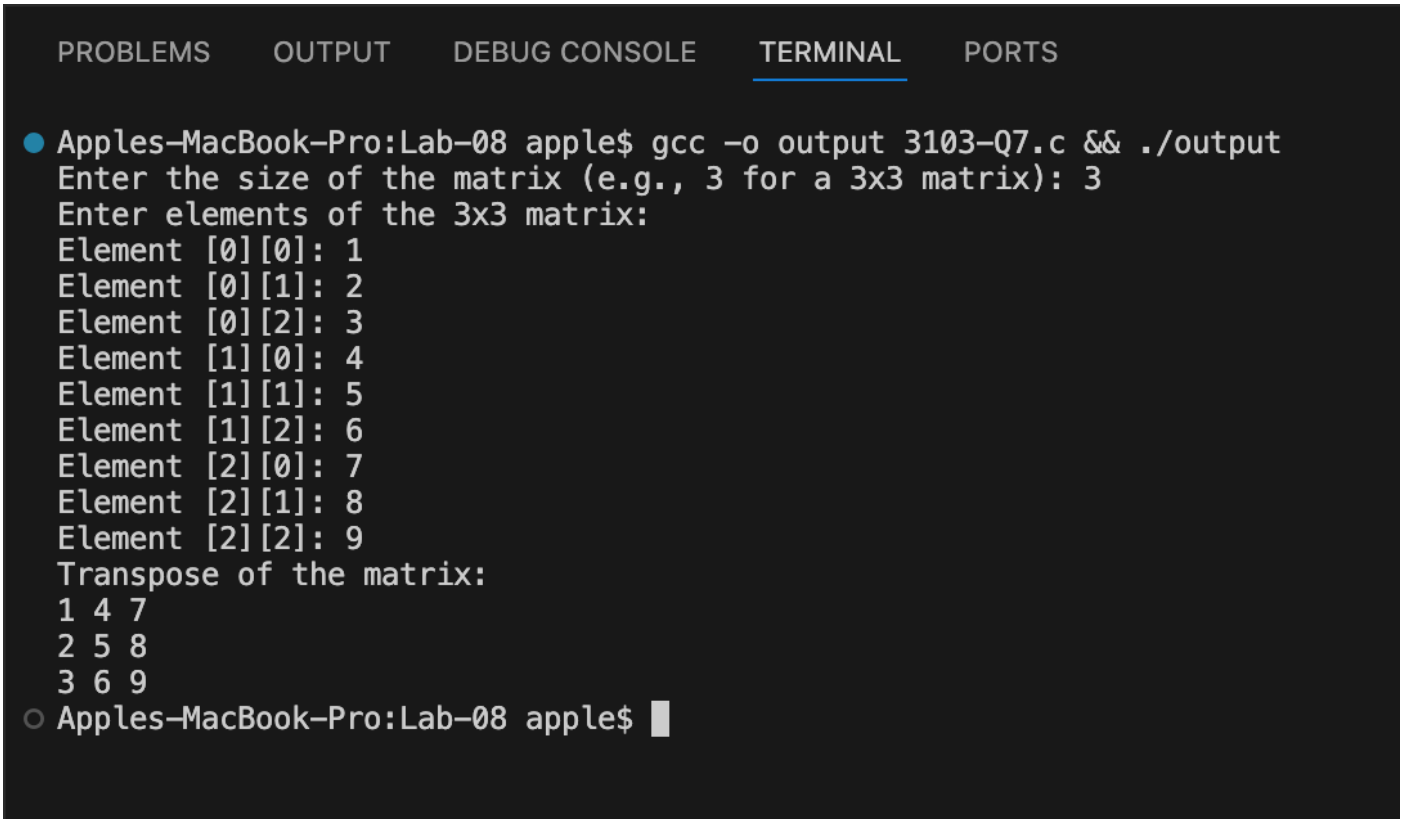
Q5 – Diamond Pattern.



Q6 – Number Pattern.



Q7 – 2D Array Transpose.



Q8 – Sum of 3D Array.

```c
    // Defining a 3D array as 2 pages of 3x3 matrix
    int array[2][3][3] = {
        { {1, 2, 3}, {4, 5, 6}, {7, 11, 9} },  // Page 0
        { {9, 8, 7}, {6, 5, 4}, {3, 2, 1} }   // Page 1
    };
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

Apples-MacBook-Pro:Lab-08 apple$ gcc -o output 3103-Q8.c && ./output
Sum of elements on Page 0: 48
Sum of elements on Page 1: 45
Apples-MacBook-Pro:Lab-08 apple$
```

Q9 – Check Occurences of Numbers.

```c
int main() {
    int arr[5] = {2, 3, 1, 2, 3}; // Input array
    int size = 5;
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

Apples-MacBook-Pro:Lab-08 apple$ gcc -o output 3103-Q9.c && ./output
Elements occurring more than once: 2 3
Apples-MacBook-Pro:Lab-08 apple$
```

Q10 – Pascal's Triangle.