

The screenshot shows a code editor interface with two tabs open. The left tab is titled 'C C PROGRAMMING PROJECT .c' and contains the following C code:

```
1 #include <stdio.h>
2
3 int main() {
4     int a[10][10], r, c, i, j;
5
6     printf("Enter rows and columns: ");
7     scanf("%d %d", &r, &c);
8
9     printf("Enter elements:\n");
10    for (i = 0; i < r; i++) {
11        for (j = 0; j < c; j++)
12            scanf("%d", &a[i][j]);
13
14    printf("Matrix:\n");
15    for (i = 0; i < r; i++) {
16        for (j = 0; j < c; j++)
17            printf("%d ", a[i][j]);
18        printf("\n");
19    }
20
21    return 0;
22 }
```

The right tab is titled 'C #include <stdio.h> Untitled-1' and contains a blank document.

Below the tabs, there is a terminal window showing the execution of the program. The terminal tabs are labeled 'PROBLEMS', 'OUTPUT', 'DEBUG CONSOLE', 'TERMINAL', and 'PORTS'. The 'TERMINAL' tab is active, displaying the following command-line session:

```
cd "/Users/rajatsingh/" && gcc tempCodeRunnerFile.c -o tempCodeRunnerFile && "/Users/rajatsingh/"tempCodeRunnerFile
● rajatsingh@Rajats-MacBook-Air ~ % cd "/Users/rajatsingh/" && gcc tempCodeRunnerFile.c -o tempCodeRunnerFile && "/Users/rajatsingh/"tempCodeRunnerFile
Enter rows and columns: 2 3
Enter elements:
1 2 3 4 5 6
Matrix:
1 2 3
4 5 6
○ rajatsingh@Rajats-MacBook-Air ~ %
```

```
1 #include <stdio.h>
2
3 int main() {
4     int a[10][10], r, c, i, j, sum = 0;
5
6     printf("Enter rows and columns: ");
7     scanf("%d %d", &r, &c);
8
9     printf("Enter elements:\n");
10    for (i = 0; i < r; i++)
11        for (j = 0; j < c; j++)
12            scanf("%d", &a[i][j]);
13
14    for (i = 0; i < r; i++)
15        for (j = 0; j < c; j++)
16            sum += a[i][j];
17
18    printf("Sum of elements: %d\n", sum);
19    return 0;
20 }
21
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

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```
cd "/Users/rajatsingh/" && gcc tempCodeRunnerFile.c -o tempCodeRunnerFile && "/Users/rajatsingh/"tempCodeRunnerFile
● rajatsingh@Rajats-MacBook-Air ~ % cd "/Users/rajatsingh/" && gcc tempCodeRunnerFile.c -o tempCodeRunnerFile && "/Users/rajatsingh/"tempCodeRunnerFile
Enter rows and columns: 2 3
Enter elements:
1 2 3 4 5 6
Sum of elements: 21
○ rajatsingh@Rajats-MacBook-Air ~ %
```

The screenshot shows a code editor interface with three tabs: "Welcome", "C PROGRAMMING PROJECT .c", and "C #include <stdio.h> Untitled-1". The "C PROGRAMMING PROJECT .c" tab contains the following C code:

```
1 #include <stdio.h>
2
3 int main() {
4     int r, c, i, j;
5     printf("Enter rows and columns: ");
6     scanf("%d %d", &r, &c);
7
8     int a[r][c], rowSum[r];
9
10    printf("Enter matrix:\n");
11    for(i = 0; i < r; i++) {
12        rowSum[i] = 0;
13        for(j = 0; j < c; j++) {
14            scanf("%d", &a[i][j]);
15            rowSum[i] += a[i][j];
16        }
17    }
18
19    printf("Row Sum Array:\n");
20    for(i = 0; i < r; i++)
21        printf("%d ", rowSum[i]);
22
23    return 0;
24 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

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```
cd "/Users/rajatsingh/" && gcc tempCodeRunnerFile.c -o tempCodeRunnerFile && "/Users/rajatsingh/"tempCodeRunnerFile
● rajatsingh@Rajats-MacBook-Air ~ % cd "/Users/rajatsingh/" && gcc tempCodeRunnerFile.c -o tempCodeRunnerFile && "/Users/rajatsingh/"tempCodeRunnerFile
Enter rows and columns: 3 3
Enter matrix:
1 2 3 4 5 6 7 8 9
Row Sum Array:
6 15 24
○ rajatsingh@Rajats-MacBook-Air ~ %
```

The screenshot shows a code editor interface with two tabs open. The left tab is titled 'C PROGRAMMING PROJECT.c' and contains the following C code:

```
1 #include <stdio.h>
2
3 int main() {
4     int r, c, i, j;
5     printf("Enter rows and columns: ");
6     scanf("%d %d", &r, &c);
7
8     int a[r][c], t[c][r];
9
10    printf("Enter matrix:\n");
11    for(i = 0; i < r; i++) {
12        for(j = 0; j < c; j++) {
13            scanf("%d", &a[i][j]);
14        }
15    }
16    for(i = 0; i < r; i++) {
17        for(j = 0; j < c; j++) {
18            t[j][i] = a[i][j];
19        }
20    }
21    printf("Transpose:\n");
22    for(i = 0; i < c; i++) {
23        for(j = 0; j < r; j++) {
24            printf("%d ", t[i][j]);
25        }
26        printf("\n");
27    }
28    return 0;
29 }
```

The screenshot shows a terminal window at the bottom of the interface. It displays the command to compile the code, the user input for matrix dimensions, the matrix entries, and the resulting transpose output.

```
cd "/Users/rajatsingh/" && gcc tempCodeRunnerFile.c -o tempCodeRunnerFile && "/Users/rajatsingh/"tempCodeRunnerFile
● rajatsingh@Rajats-MacBook-Air ~ % cd "/Users/rajatsingh/" && gcc tempCodeRunnerFile.c -o tempCodeRunnerFile && "/Users/rajatsingh/"tempCodeRunnerFile
Enter rows and columns: 2 3
Enter matrix:
1 2 3 4 5 6
Transpose:
1 4
2 5
3 6
○ rajatsingh@Rajats-MacBook-Air ~ %
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

Code 15.15 | 53

```
cd "/Users/rajatsingh/" && gcc tempCodeRunnerFile.c -o tempCodeRunnerFile && "/Users/rajatsingh/"tempCodeRunnerFile
● rajatsingh@Rajats-MacBook-Air ~ % cd "/Users/rajatsingh/" && gcc tempCodeRunnerFile.c -o tempCodeRunnerFile && "/Users/rajatsingh/"tempCodeRunnerFile
Enter rows and columns: 2 2
Enter Matrix A:
1 2 3 4
Enter Matrix B:
5 6 7 8
Sum Matrix:
6 8
10 12
● rajatsingh@Rajats-MacBook-Air ~ %
```

Welcome C C PROGRAMMING PROJECT .c C #include <stdio.h> Untitled-1

```
1 #include <stdio.h>
2
3 int main() {
4     int n, i, j, flag = 1;
5     printf("Enter size of square matrix: ");
6     scanf("%d", &n);
7
8     int a[n][n];
9
10    printf("Enter matrix:\n");
11    for(i = 0; i < n; i++)
12        for(j = 0; j < n; j++)
13            scanf("%d", &a[i][j]);
14
15    for(i = 0; i < n; i++)
16        for(j = 0; j < n; j++)
17            if(a[i][j] != a[j][i])
18                flag = 0;
19
20    if(flag)
21        printf("Matrix is Symmetric");
22    else
23        printf("Matrix is NOT Symmetric");
24
25    return 0;
26 }
27
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

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```
cd "/Users/rajatsingh/" && gcc tempCodeRunnerFile.c -o tempCodeRunnerFile && "/Users/rajatsingh/"tempCodeRunnerFile
rajatsingh@Rajats-MacBook-Air ~ % cd "/Users/rajatsingh/" && gcc tempCodeRunnerFile.c -o tempCodeRunnerFile && "/Users/rajatsingh/"tempCodeRunnerFile
Enter size of square matrix: 3
Enter matrix:
1 2 3 2 5 6 3 6 9
Matrix is Symmetric
rajatsingh@Rajats-MacBook-Air ~ %
```

The screenshot shows a code editor interface with two tabs open. The left tab is titled 'C C PROGRAMMING PROJECT .c' and contains the following C code:

```
1 #include <stdio.h>
2
3 int main() {
4     int n, i, j, flag = 1;
5     printf("Enter size of square matrix: ");
6     scanf("%d", &n);
7
8     int a[n][n];
9
10    printf("Enter matrix:\n");
11    for(i = 0; i < n; i++)
12        for(j = 0; j < n; j++)
13            scanf("%d", &a[i][j]);
14
15    for(i = 0; i < n-1; i++)
16        if(a[i][i] == a[i+1][i+1])
17            flag = 0;
18
19    if(flag)
20        printf("Diagonal elements are distinct");
21    else
22        printf("Diagonal elements are NOT distinct");
23
24    return 0;
25 }
26
```

The right tab is titled 'C #include <stdio.h> Untitled-1' and contains a single line of code: '#include <stdio.h>'. The status bar at the bottom shows the terminal output:

```
cd "/Users/rajatsingh/" && gcc tempCodeRunnerFile.c -o tempCodeRunnerFile && "/Users/rajatsingh/"tempCodeRunnerFile
● rajatsingh@Rajats-MacBook-Air ~ % cd "/Users/rajatsingh/" && gcc tempCodeRunnerFile.c -o tempCodeRunnerFile && "/Users/rajatsingh/"tempCodeRunnerFile
Enter size of square matrix: 3
Enter matrix:
5 1 2 3 6 7 8 9 8
Diagonal elements are distinct
○ rajatsingh@Rajats-MacBook-Air ~ %
```

The screenshot shows a code editor interface with two tabs open. The left tab is titled 'C PROGRAMMING PROJECT .c' and contains the following C code:

```
1 #include <stdio.h>
2
3 int main() {
4     int n, i, j, sum = 0;
5     printf("Enter size of square matrix: ");
6     scanf("%d", &n);
7
8     int a[n][n];
9
10    printf("Enter matrix:\n");
11    for(i = 0; i < n; i++)
12        for(j = 0; j < n; j++)
13            scanf("%d", &a[i][j]);
14
15    for(i = 0; i < n; i++)
16        sum += a[i][i];
17
18    printf("Sum of diagonal = %d", sum);
19    return 0;
20}
21
```

The right tab is titled '#include <stdio.h> Untitled-1' and is currently active. It displays the terminal output of the code execution:

```
cd "/Users/rajatsingh/" && gcc tempCodeRunnerFile.c -o tempCodeRunnerFile && "/Users/rajatsingh/"tempCodeRunnerFile
● rajatsingh@Rajats-MacBook-Air ~ % cd "/Users/rajatsingh/" && gcc tempCodeRunnerFile.c -o tempCodeRunnerFile && "/Users/rajatsingh/"tempCodeRunnerFile
Enter size of square matrix: 3
Enter matrix:
1 2 3 4 5 6 7 8 9
Sum of diagonal = 15
● rajatsingh@Rajats-MacBook-Air ~ %
```

A screenshot of a code editor window. The title bar shows tabs for "Welcome", "C PROGRAMMING PROJECT .c", and "C #include <stdio.h> Untitled-1". The main area contains the following C code:

```
1 #include <stdio.h>
2
3 int main() {
4     int r, c, i, j;
5     printf("Enter rows and columns: ");
6     scanf("%d %d", &r, &c);
7
8     int a[r][c];
9
10    printf("Enter matrix:\n");
11    for(i = 0; i < r; i++)
12        for(j = 0; j < c; j++)
13            scanf("%d", &a[i][j]);
14
15    printf("Diagonal Traversal:\n");
16    for(i = 0; i < r; i++)
17        printf("%d ", a[i][i]);
18
19    return 0;
20 }
21
```

A screenshot of a terminal window. The title bar shows tabs for "PROBLEMS", "OUTPUT", "DEBUG CONSOLE", "TERMINAL", and "PORTS". The "TERMINAL" tab is selected. The terminal output is as follows:

```
cd "/Users/rajatsingh/" && gcc tempCodeRunnerFile.c -o tempCodeRunnerFile && "/Users/rajatsingh/"tempCodeRunnerFile
● rajatsingh@Rajats-MacBook-Air ~ % cd "/Users/rajatsingh/" && gcc tempCodeRunnerFile.c -o tempCodeRunnerFile && "/Users/rajatsingh/"tempCodeRunnerFile
Enter rows and columns: 3 3
Enter matrix:
1 2 3 4 5 6 7 8 9
Diagonal Traversal:
1 5 9
● rajatsingh@Rajats-MacBook-Air ~ %
```

The screenshot shows a code editor interface with two tabs open. The left tab is titled 'C PROGRAMMING PROJECT .c' and contains the following C code:

```
1 #include <stdio.h>
2
3 int main() {
4     int r1, c1, r2, c2, i, j, k;
5
6     printf("Enter rows and columns of Matrix A: ");
7     scanf("%d %d", &r1, &c1);
8     printf("Enter rows and columns of Matrix B: ");
9     scanf("%d %d", &r2, &c2);
10
11    if(c1 != r2) {
12        printf("Matrix multiplication NOT possible.");
13        return 0;
14    }
15
16    int a[r1][c1], b[r2][c2], m[r1][c2];
17
18    printf("Enter Matrix A:\n");
19    for(i = 0; i < r1; i++)
20        for(j = 0; j < c1; j++)
21            scanf("%d", &a[i][j]);
22
23    printf("Enter Matrix B:\n");
24    for(i = 0; i < r2; i++)
25        for(j = 0; j < c2; j++)
26            scanf("%d", &b[i][j]);
27
28    for(i = 0; i < r1; i++)
29        for(j = 0; j < c2; j++) {
30            m[i][j] = 0;
31            for(k = 0; k < c1; k++)
32                m[i][j] += a[i][k] * b[k][j];
33        }
34
35    printf("Product Matrix:\n");
```

The right tab is titled '#include <stdio.h> Untitled-1'. Below the tabs, there are several status indicators and icons.

At the bottom of the editor, there are tabs for PROBLEMS, OUTPUT, DEBUG CONSOLE, TERMINAL, and PORTS. The TERMINAL tab is currently selected, showing the following terminal session:

```
● rajatsingh@Rajats-MacBook-Air ~ % cd "/Users/rajatsingh/" && gcc tempCodeRunnerFile.c -o tempCodeRunnerFile && "/Users/rajatsingh/"tempCodeRunnerFile
Enter rows and columns of Matrix A: 2 3
Enter rows and columns of Matrix B: 3 2
Enter Matrix A:
1 2 3 4 5 6
Enter Matrix B:
7 8 9 10 11 12
Product Matrix:
58 64
139 154
○ rajatsingh@Rajats-MacBook-Air ~ %
```