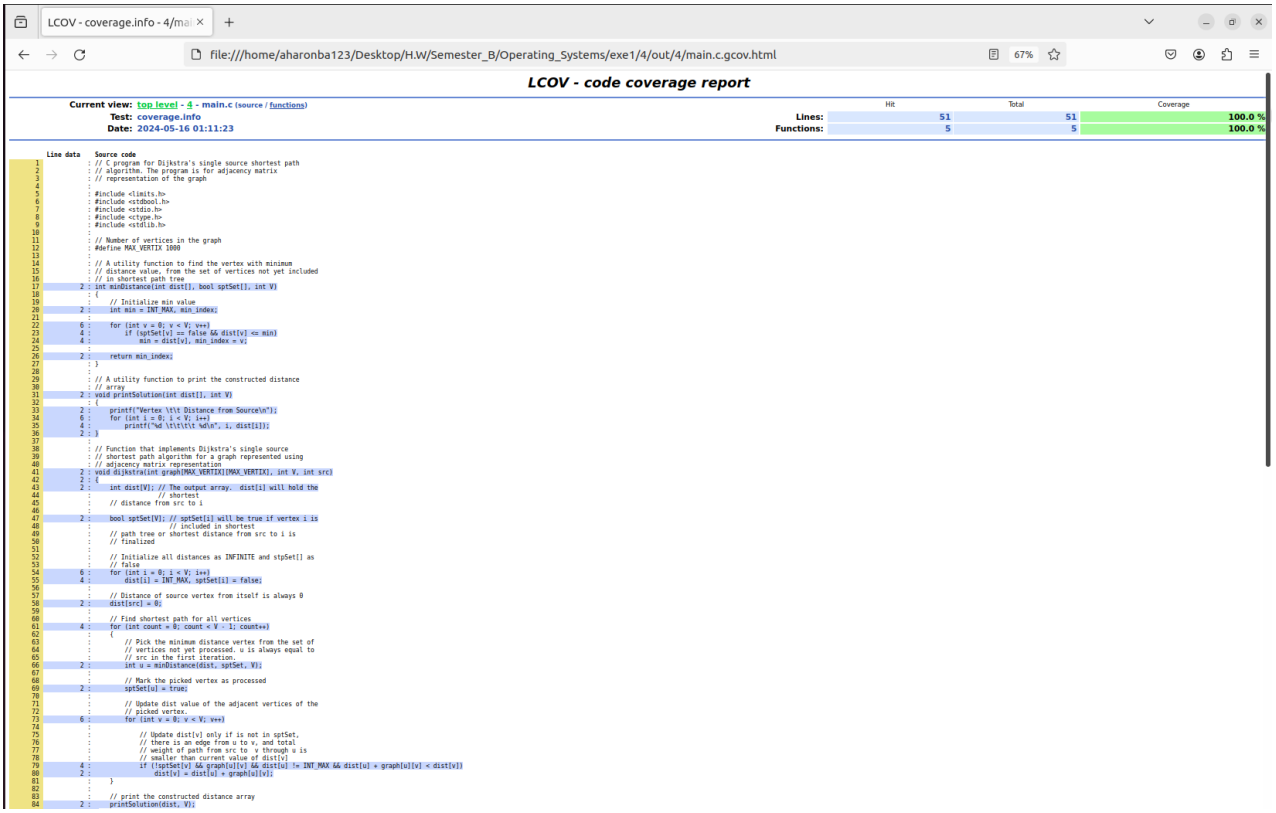
הדגמת הרצת מקרי קצה בתוכנית ובדיקה על ידי gcov של כיסוי כלל התוכנית:

```
aharonba123@aharon:~/Desktop/H.W/Semester_B/Operating_Systems/exe1/4$ ./main
Enter the number of the vertix in the graph:2
Enter the weight of the egdes from vertix 0 to the other vertices: 0 1
Enter the weight of the egdes from vertix 1 to the other vertices: 2 0
Vertex           Distance from Source
0                                2
1                                0
Enter the number of the vertix in the graph:1000
Enter the weight of the egdes from vertix 0 to the other vertices: -3 2
invalid valueaharonba123@aharon:~/Desktop/H.W/Semester_B/Operating_Systems/exe1/4$ ./main
Enter the number of the vertix in the graph:1001
The maximum number of vertices is 1000aharonba123@aharon:~/Desktop/H.W/Semester_B/Operating_Systems/exe1/4$ ./main
Enter the number of the vertix in the graph:3
Enter the weight of the egdes from vertix 0 to the other vertices: 1 2 3 4
Error: You entered too many values in a line.
aharonba123@aharon:~/Desktop/H.W/Semester_B/Operating_Systems/exe1/4$ ./main
Enter the number of the vertix in the graph:2
Enter the weight of the egdes from vertix 0 to the other vertices: 0 1
Enter the weight of the egdes from vertix 1 to the other vertices: 2 0
Vertex           Distance from Source
0                                2
1                                0
Enter the number of the vertix in the graph:a
Error:You entered invalid value .
aharonba123@aharon:~/Desktop/H.W/Semester_B/Operating_Systems/exe1/4$ lcov --capture --directory . --output-file coverage.info
Capturing coverage data from .
Subroutine read_intermediate_text redefined at /usr/bin/geninfo line 2623.
Subroutine read_intermediate_json redefined at /usr/bin/geninfo line 2655.
Subroutine intermediate_text_to_info redefined at /usr/bin/geninfo line 2703.
Subroutine intermediate_json_to_info redefined at /usr/bin/geninfo line 2792.
Subroutine get_output_fd redefined at /usr/bin/geninfo line 2872.
Subroutine print_gcov_warnings redefined at /usr/bin/geninfo line 2900.
Subroutine process_intermediate redefined at /usr/bin/geninfo line 2930.
Found gcov version: 11.4.0
Using intermediate gcov format
Scanning . for .gcda files ...
Found 1 data files in .
Processing main.gcda
Finished .info-file creation
aharonba123@aharon:~/Desktop/H.W/Semester_B/Operating_Systems/exe1/4$ genhtml coverage.info --output-directory out
Reading data file coverage.info
Found 1 entries.
Found common filename prefix "/home/aharonba123/Desktop/H.W/Semester_B/Operating_Systems/exe1"
Writing .css and .png files.
Generating output.
Processing file 4/main.c
Writing directory view page.
Overall coverage rate:
  lines......: 100.0% (51 of 51 lines)
  functions..: 100.0% (5 of 5 functions)
aharonba123@aharon:~/Desktop/H.W/Semester_B/Operating_Systems/exe1/4$ gcov main.c
File 'main.c'
Lines executed:100.00% of 51
Creating 'main.c.gcov'

Lines executed:100.00% of 51
```



```
                // Shorter than current value of dist[v]
        4 :             if (!sptSet[v] && graph[u][v] && dist[u] != INT_MAX && dist[u] + graph[u][v] < dist[v])
        2 :                 dist[v] = dist[u] + graph[u][v];
          :     }
          :
          :     // print the constructed distance array
        2 :     printSolution(dist, V);
        2 : }
          :
        4 : void scanMtraix(int adjMatrix[MAX_VERTIX][MAX_VERTIX], int numOfVertix)
          : {
          :     int ch;
        8 :     for (int i = 0; i < numOfVertix; i++)
          :     {
        6 :         printf("Enter the weight of the egdes from vertix %d to the other vertices: ", i);
       17 :         for (int j = 0; j < numOfVertix; j++)
          :         {
          :             int value;
          :
          :             // Checking that the user enters valid values into the metric
          :
       12 :             if (scanf("%d", &value) != 1 || value < 0)
          :             {
        1 :                 printf("invalid value");
        1 :                 exit(1);
          :             }
          :
       11 :             adjMatrix[i][j] = value;
          :         }
          :
          :         // Checking that the user enters an exact number of values per line
          :
       13 :         while ((ch = getchar()) != '\n' && ch != EOF)
          :         {
        9 :             if (!isspace(ch))
          :             {
        1 :                 printf("Error: You entered too many values in a line.\n");
        1 :                 exit(1);
          :             }
          :         }
          :     }
        2 : }
          : // driver's code
        6 : int main()
          : {
          :
          :     for (;;)
        2 :     {
          :         int ch;
          :         int numOfVertix;
          :         int adjMatrix[MAX_VERTIX][MAX_VERTIX];
          :
        6 :         printf("Enter the number of the vertix in the graph:");
        6 :         scanf("%d", &numOfVertix);
          :
          :         // Checking that the user entered a valid value of number of vertices
          :
        6 :         if ((ch = getchar()) != '\n' && ch != EOF)
          :         {
        1 :             printf("Error:You entered invalid value .\n");
        2 :             return 1;
          :         }
          :
        5 :         else if (numOfVertix > MAX_VERTIX)
          :         {
        1 :             printf("The maximum number of vertices is 1000");
        1 :             return 1;
          :         }
          :
          :         // After entering a correct value, the scanMatrix function is called in order to receive the graph values from the user
          :
        4 :         scanMtraix(adjMatrix, numOfVertix);
          :
          :         // Running the Dijkstra algorithm
          :
        2 :         dijkstra(adjMatrix, numOfVertix, 1);
          :     }
          :
          :     return 0;
          : }
```