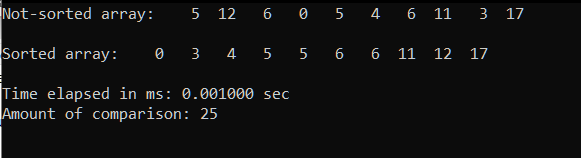
**ЗВІТ ДО ПР №9**

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**Завдання 1.**



Код програми:

#include <stdio.h>

#include <stdlib.h>

#include <time.h>

const int N = 10;

int count;

int main()

{

srand(time(NULL));

int array[N], i, j;

clock\_t start = clock();

printf("Not-sorted array: ");

for(i = 0; i < N; i++)

{

array[i]= rand() % 20;

printf("%4d", array[i]);

}

printf("\n");

Sorting(array, 0, N-1);

printf("\n");

printf("Sorted array: ");

for(i = 0; i < N; i++)

{

printf("%4d", array[i]);

}

clock\_t stop = clock();

double work\_time = (double)(stop - start) / CLOCKS\_PER\_SEC;

printf("\n");

printf("\nTime elapsed in ms: %f sec", work\_time);

printf("\nAmount of comparison: %d", count);

getch();

}

void Sorting(int \*arr, int left, int right )

{

int x, i, j, buf;

if (left >= right) return;

i = left;

j = right;

x = arr[(left + right)/2];

while (i <= j) {

while (arr[i] < x)

{

i++;

count++;

}

while (arr[j] > x)

{

j --;

count++;

}

if (i <= j) {

buf = arr[i];

arr[i] = arr[j];

arr[j] = buf;

i++;

j--;

}

count++;

}

if(left < j) Sorting (arr, left, j );

if(i < right) Sorting (arr, i, right);

}

**Завдання 2.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 41 | 12 | 0 | 44 | 7 | 12 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 12 | 12 | 0 | 44 | 7 | 41 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 7 | 12 | 0 | 44 | 12 | 41 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 7 | 12 | 0 | 44 | 12 | 41 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 7 | 12 | 0 | 44 | 12 | 41 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 7 | 12 | 0 | 44 | 12 | 41 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 7 | 12 | 0 | 44 | 12 | 41 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 7 | 12 | 0 | 44 | 12 | 41 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 0 | 12 | 7 | 44 | 12 | 41 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 0 | 7 | 12 | 44 | 12 | 41 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 0 | 7 | 12 | 41 | 12 | 44 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 0 | 7 | 12 | 12 | 41 | 44 |

**Висновки:**  під час практичної роботи узагальнили знання про алгоритми сортування масивів.