

UTS

FISIKA

Untuk Memenuhi UTS Fisika



Oleh:

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Sourcecode:

```
#include <stdio.h>
```

```
#include <math.h>
```

```
int main(){
```

```
    float T71, A71, v71, k71, omega71, x71, y71, t71;
```

```
    printf("UTS FISIKA GERAK GELOMBANG\n");
```

```
    printf("=====\n");
```

```
    printf("NAMA : MUHAMMAD RACHEL FATHAN IDZHANY\n");
```

```
    printf("NPM : 4522210071\n");
```

```
    printf("KELAS : A\n");
```

```
    printf("=====\n");
```

```
    // Input data
```

```
    printf("\n===== > GERAK GELOMBANG <===== \n");
```

```
    printf("Masukkan Nilai periode gelombang : ");
```

```
    scanf("%f", &T71);
```

```
    printf("Masukkan Nilai simpangan maksimum meter : ");
```

```
    scanf("%f", &A71);
```

```
    printf("Masukkan laju rambat gelombang (v) dalam m/s : ");
```

```
    scanf("%f", &v71);
```

```
    printf("Masukkan posisi X dalam meter : ");
```

```
    scanf("%f", &x71);
```

```
    printf("Masukkan waktu dalam detik : ");
```

```
    scanf("%f", &t71);
```

```
    // Menghitung bilangan gelombang, frekuensi sudut, dan simpangan gelombang
```

```
    k71 = 2 * M_PI / (v71 * T71);
```

```
omega71 = 2 * M_PI / T71;
```

```
y71 = A71 * sin((omega71*t71) - (k71*x71));
```

```
// Menampilkan hasil perhitungan
```

```
printf("\n=====> HASIL <=====\\n");
```

```
printf("Bilangan gelombang (k): %.2f m^-1\\n", k71);
```

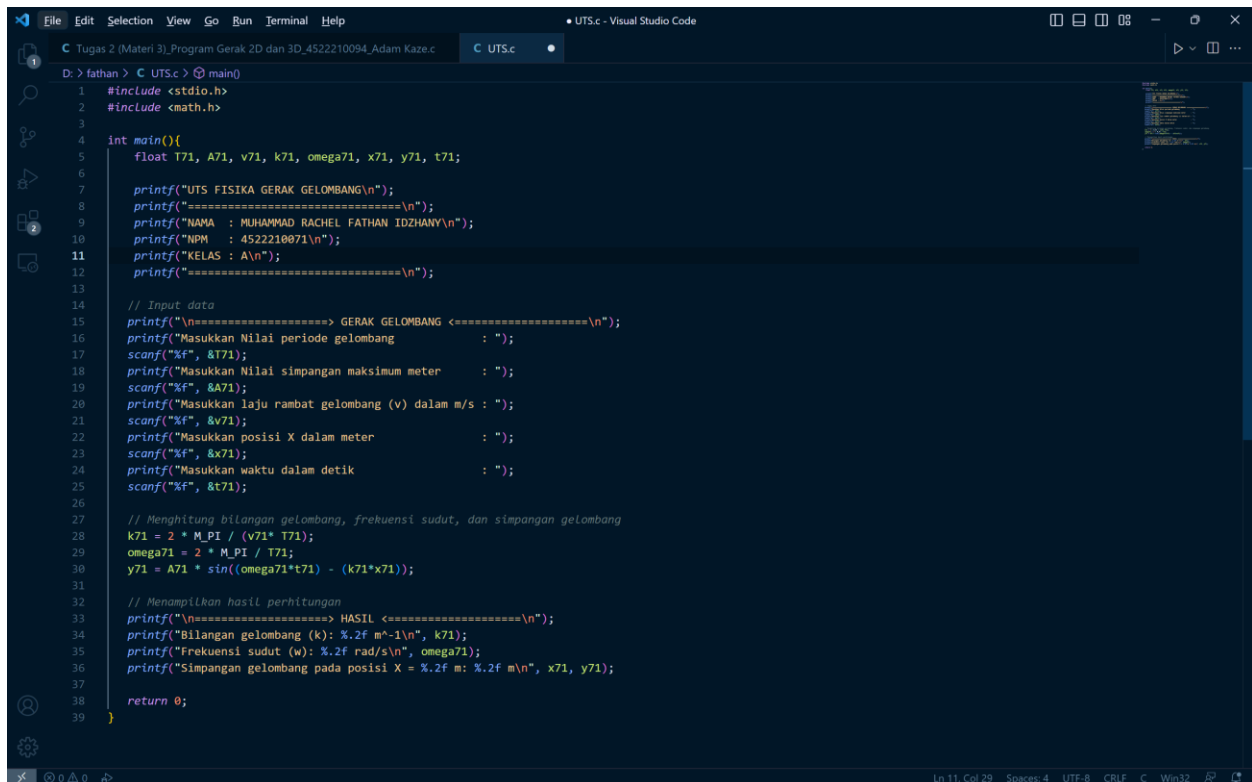
```
printf("Frekuensi sudut (w): %.2f rad/s\\n", omega71);
```

```
printf("Simpangan gelombang pada posisi X = %.2f m: %.2f m\\n", x71, y71);
```

```
return 0;
```

```
}
```

Capture coding:

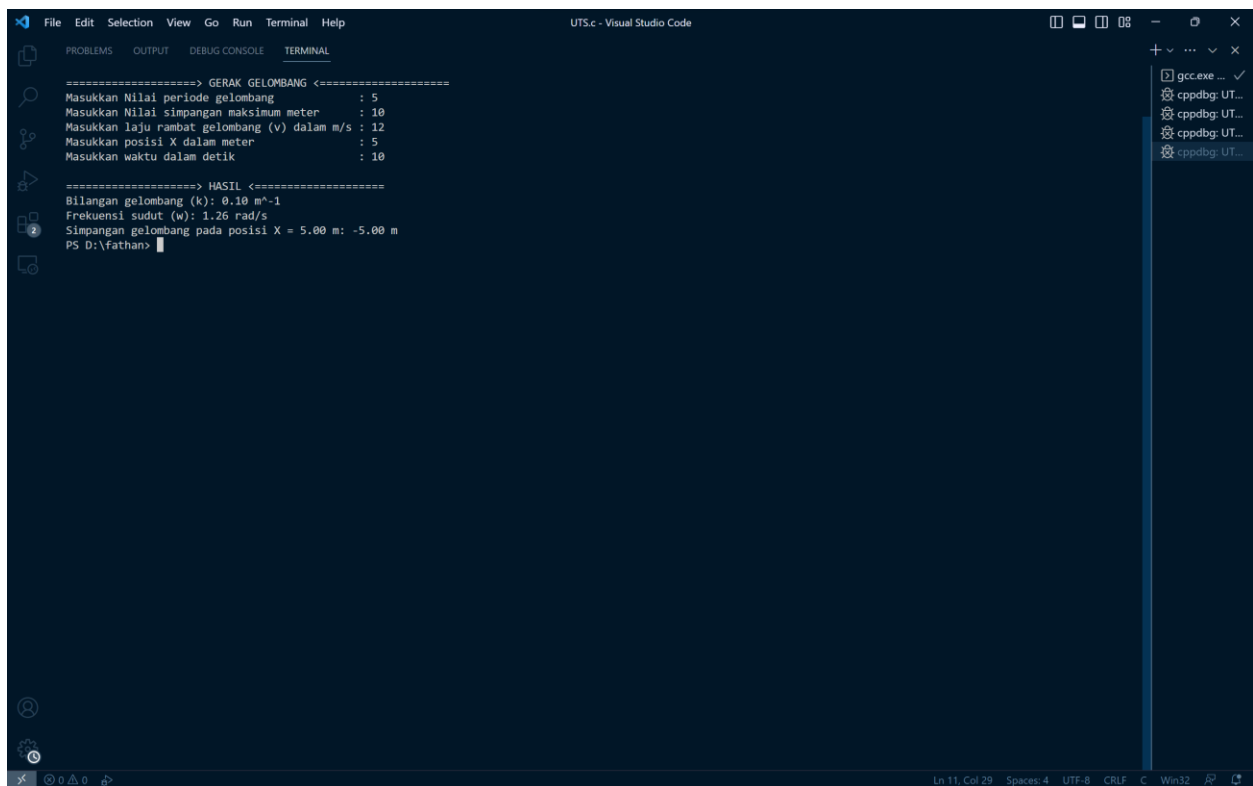


```
File Edit Selection View Go Run Terminal Help
• UTS.c - Visual Studio Code

C Tugas 2 (Materi 3)_Program Gerak 2D dan 3D_4522210094_Adam Kaze.c C UTS.c
D:\> fathan > C UTS.c > main()

1 #include <stdio.h>
2 #include <math.h>
3
4 int main()
5 {
6     float T71, A71, v71, k71, omega71, x71, y71, t71;
7     printf("UTS FISIKA GERAK GELOMBANG\\n");
8     printf("=====\\n");
9     printf("NAMA : MUHAMMAD RACHEL FATHAN IDZHANY\\n");
10    printf("NPM : 4522210071\\n");
11    printf("KELAS : A\\n");
12    printf("=====\\n");
13
14    // Input data
15    printf("\\n===== GERAK GELOMBANG <=====\\n");
16    printf("Masukkan Nilai periode gelombang : ");
17    scanf("%f", &T71);
18    printf("Masukkan Nilai simpangan maksimum meter : ");
19    scanf("%f", &A71);
20    printf("Masukkan laju rambat gelombang (v) dalam m/s : ");
21    scanf("%f", &v71);
22    printf("Masukkan posisi X dalam meter : ");
23    scanf("%f", &x71);
24    printf("Masukkan waktu dalam detik : ");
25    scanf("%f", &t71);
26
27    // Menghitung bilangan gelombang, frekuensi sudut, dan simpangan gelombang
28    k71 = 2 * M_PI / (v71 * T71);
29    omega71 = 2 * M_PI / T71;
30    y71 = A71 * sin((omega71*t71) - (k71*x71));
31
32    // Menampilkan hasil perhitungan
33    printf("\\n=====> HASIL <=====\\n");
34    printf("Bilangan gelombang (k): %.2f m^-1\\n", k71);
35    printf("Frekuensi sudut (w): %.2f rad/s\\n", omega71);
36    printf("Simpangan gelombang pada posisi X = %.2f m: %.2f m\\n", x71, y71);
37
38    return 0;
39 }
```

Capture hasil run:



The screenshot shows the Visual Studio Code interface with a terminal window open. The terminal displays the output of a C++ program titled "GERAK GELOMBANG". The program prompts the user to input the period, maximum displacement, wave velocity, position X, and time. The user has entered the following values: period = 5, maximum displacement = 10, wave velocity = 12, position X = 5, and time = 10. The program then calculates and displays the wave number (k), angular frequency (w), and the displacement at position X = 5.00 m at time t = 10.00 s.

```
===== GERAK GELOMBANG <=====
Masukkan Nilai periode gelombang      : 5
Masukkan Nilai simpangan maksimum meter : 10
Masukkan laju rambat gelombang (v) dalam m/s : 12
Masukkan posisi X dalam meter          : 5
Masukkan waktu dalam detik             : 10

===== HASIL <=====
Bilangan gelombang (k): 0.10 m^-1
Frekuensi sudut (w): 1.26 rad/s
Simpangan gelombang pada posisi X = 5.00 m: -5.00 m
PS D:\fathan>
```