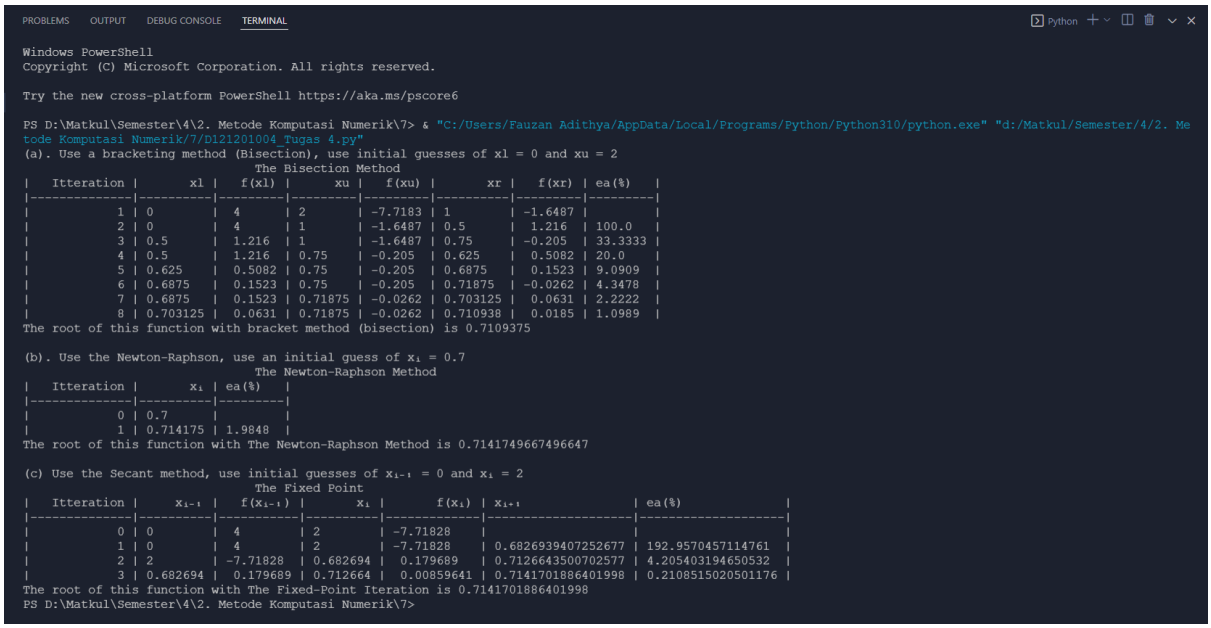
Nama; Fauzan Adithya Zuchairul Mursalin

NIM: D121201004



```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL                                                                    Python

Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS D:\Matkul\Semester\4\2. Metode Komputasi Numerik\7> & "C:/Users/Fauzan Adithya/AppData/Local/Programs/Python/Python310/python.exe" "d:/Matkul/Semester/4/2. Me
tode Komputasi Numerik/7/D121201004_Tugas 4.py"
(a). Use a bracketing method (Bisection), use initial guesses of xl = 0 and xu = 2
                                The Bisection Method
|   Itteration |       xl |   f(xl) |      xu |   f(xu) |       xr |   f(xr) | ea(%)    |
|--------------|----------|---------|---------|---------|----------|---------|----------|
|            1 | 0        |  4      | 2       | -7.7183 | 1        | -1.6487 |          |
|            2 | 0        |  4      | 1       | -1.6487 | 0.5      |  1.216  | 100.0    |
|            3 | 0.5      |  1.216  | 1       | -1.6487 | 0.75     | -0.205  | 33.3333  |
|            4 | 0.5      |  1.216  | 0.75    | -0.205  | 0.625    |  0.5082 | 20.0     |
|            5 | 0.625    |  0.5082 | 0.75    | -0.205  | 0.6875   |  0.1523 | 9.0909   |
|            6 | 0.6875   |  0.1523 | 0.75    | -0.205  | 0.71875  | -0.0262 | 4.3478   |
|            7 | 0.6875   |  0.1523 | 0.71875 | -0.0262 | 0.703125 |  0.0631 | 2.2222   |
|            8 | 0.703125 |  0.0631 | 0.71875 | -0.0262 | 0.710938 |  0.0185 | 1.0989   |
The root of this function with bracket method (bisection) is 0.7109375

(b). Use the Newton-Raphson, use an initial guess of xᵢ = 0.7
                            The Newton-Raphson Method
|   Itteration |       xᵢ | ea(%)    |
|--------------|----------|----------|
|            0 | 0.7      |          |
|            1 | 0.714175 | 1.9848   |
The root of this function with The Newton-Raphson Method is 0.7141749667496647

(c) Use the Secant method, use initial guesses of xᵢ₋₁ = 0 and xᵢ = 2
                                The Fixed Point
|   Itteration |     xᵢ₋₁ |   f(xᵢ₋₁) |       xᵢ |       f(xᵢ) | xᵢ₊₁                | ea(%)               |
|--------------|----------|-----------|----------|-------------|--------------------|---------------------|
|            0 | 0        |  4        | 2        | -7.71828    |                    |                     |
|            1 | 0        |  4        | 2        | -7.71828    | 0.6826939407252677 | 192.9570457114761   |
|            2 | 2        | -7.71828  | 0.682694 |  0.179689   | 0.7126643500702577 | 4.205403194650532   |
|            3 | 0.682694 |  0.179689 | 0.712664 |  0.00859641 | 0.7141701886401998 | 0.2108515020501176  |
The root of this function with The Fixed-Point Iteration is 0.7141701886401998
PS D:\Matkul\Semester\4\2. Metode Komputasi Numerik\7>
```