

Nurunnisa Fathanah Dz. S. B.

D121211002

Metode Komputasi Numerik Kelas A

Tugas 3

(a)

1. Menu 1, memilih metode yang akan digunakan.
2. Input : 1
3. Menghitung menggunakan metode Bisection
4. Input : $x_l = 0$, $x_u = 2$, $ea = 2$
5. Pada iterasi ke 8 dan memenuhi syarat dengan error approximate di bawah 2%, didapatkan akarnya yaitu **0.710938**

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D121211002_Tugas3_MKN_Nurunnisa Fathanah Dz. S. B. — Python D121211002_MKN_Tugas3.py — 114x33

isriany-MacBook-Air:D121211002_Tugas3_MKN_Nurunnisa Fathanah Dz. S. B. isriany$ python3 D121211002_MKN_Tugas3.py
(Choose the method you want to use:
1. Bisection Method
2. Newton Raphson Method
3. Secant Method
4. Exit

Your choice: 1
Enter the value of xl (lower bound): 0
Enter the value of xu (upper bound): 2
Enter the approximate error (ea): 2

=====
| Iteration |   xl   |   fxl   |   xu   |   fxu   |   xr   |   fxr   |   ea (%) |
=====
| 1         | 0.00000 | 4.00000 | 2.00000 | -7.71828 | 1.00000 | -1.64872 | 100.0    |
| 2         | 0.00000 | 4.00000 | 1.00000 | -1.64872 | 0.50000 | 1.21597  | 33.333333|
| 3         | 0.50000 | 1.21597 | 1.00000 | -1.64872 | 0.75000 | -0.20499 | 20.0     |
| 4         | 0.50000 | 1.21597 | 0.75000 | -0.20499 | 0.62500 | 0.50816  | 9.090909 |
| 5         | 0.62500 | 0.50816 | 0.75000 | -0.20499 | 0.68750 | 0.15227  | 4.347826 |
| 6         | 0.68750 | 0.15227 | 0.75000 | -0.20499 | 0.71875 | -0.02618 | 2.222222 |
| 7         | 0.68750 | 0.15227 | 0.71875 | -0.02618 | 0.70312 | 0.06309  | 1.098901 |
| 8         | 0.70312 | 0.06309 | 0.71875 | -0.02618 | 0.71094 | 0.01846  | 0.549451 |
=====

The root is 0.710938

Choose the method you want to use:
1. Bisection Method
2. Newton Raphson Method
3. Secant Method
4. Exit

Your choice: █
```

(b)

1. Program menampilkan menu 1 kembali, Input : 2
2. Menghitung menggunakan Newton Raphson Method
3. Input : $x_i = 0.7$, $ea = 2$
4. Untuk $i = 1$ dengan error approximate di bawah 2%, ditemukan akarnya yaitu **0.714169**

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D121211002_Tugas3_MKN_Nurunnisa Fathanah Dz. S. B. — Python D121211002_MKN_Tugas3.py — 114x25

Choose the method you want to use:
1. Bisection Method
2. Newton Raphson Method
3. Secant Method
4. Exit

Your choice: 2
Enter the value of xi: 0.7
Enter the approximate error (ea): 2
=====
| i | xi | ea(%) |
=====
| 0 | 0.7000000 |
| 1 | 0.7141750 | 1.984803 |
=====
The root is 0.714169

Choose the method you want to use:
1. Bisection Method
2. Newton Raphson Method
3. Secant Method
4. Exit

Your choice: █
```

(c)

1. Program menampilkan menu 1 kembali, Input : 3
2. Menghitung menggunakan Secant Method
3. Input : $x_{-1} = 0$, $x_0 = 2$, $ea = 2$
4. Untuk $i = 2$ dengan error approximate di bawah 2%, ditemukan akarnya yaitu **0.714170**.

```
D121211002_Tugas3_MKN_Nurunnisa Fathanah Dz. S. B. — Python D121211002_MKN_Tugas3.py — 114x27

Choose the method you want to use:
1. Bisection Method
2. Newton Raphson Method
3. Secant Method
4. Exit

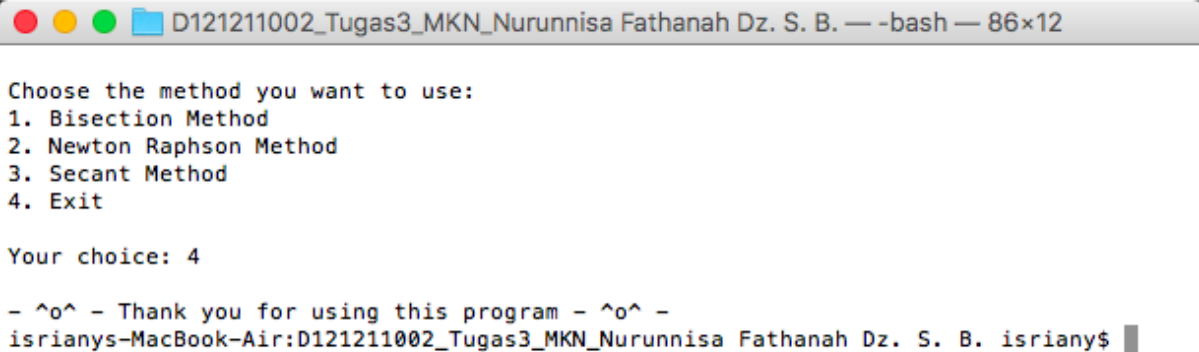
Your choice: 3
Enter the value of x(i-1): 0
Enter the value of xi: 2
Enter the approximate error (ea): 2
=====
| i | xi | ea(%) |
=====
| 0 | 0.6826939 | |
| 1 | 0.7126644 | 4.2054032 |
| 2 | 0.7141702 | 0.2108515 |
=====
The root is 0.714170

Choose the method you want to use:
1. Bisection Method
2. Newton Raphson Method
3. Secant Method
4. Exit

Your choice: █
```

(d)

1. Program menampilkan menu 1 kembali, Input : 4
2. Anda memilih keluar dari program.
3. Program Selesai.



```
D121211002_Tugas3_MKN_Nurunnisa Fathanah Dz. S. B. — -bash — 86x12

Choose the method you want to use:
1. Bisection Method
2. Newton Raphson Method
3. Secant Method
4. Exit

Your choice: 4

- ^o^ - Thank you for using this program - ^o^ -
isriany-MacBook-Air:D121211002_Tugas3_MKN_Nurunnisa Fathanah Dz. S. B. isriany$
```