

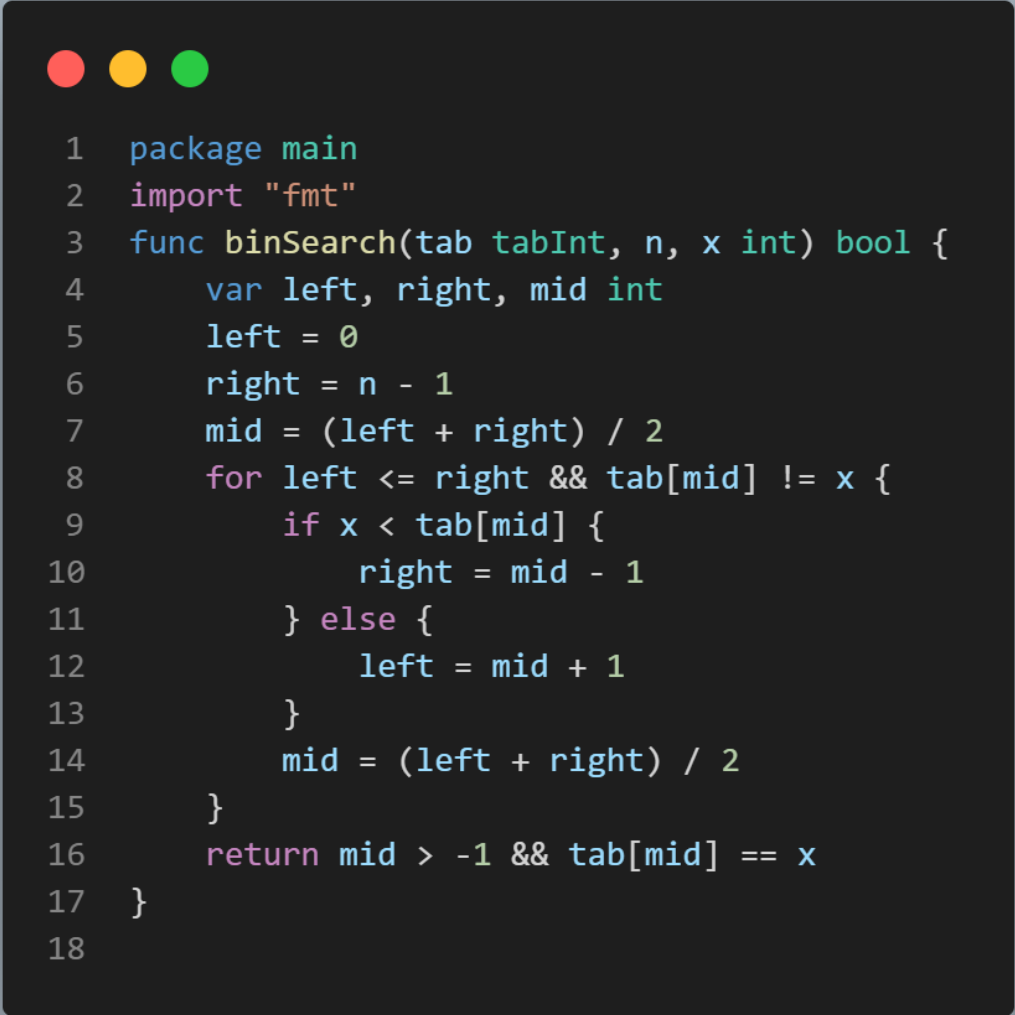
Tugas Pendahuluan Praktikum Modul 12 (Binary Search)

Nama : Muhamad Alwan Suryadi

NIM : 103032400104

Kelas : IT-48-01

Soal 1



```
1 package main
2 import "fmt"
3 func binSearch(tab tabInt, n, x int) bool {
4     var left, right, mid int
5     left = 0
6     right = n - 1
7     mid = (left + right) / 2
8     for left <= right && tab[mid] != x {
9         if x < tab[mid] {
10             right = mid - 1
11         } else {
12             left = mid + 1
13         }
14         mid = (left + right) / 2
15     }
16     return mid > -1 && tab[mid] == x
17 }
18
```



```
1  package main
2  import "fmt"
3
4  func binSearch(tab []int,n,x int)int{
5      var left, right, mid, idx int
6      left = 0
7      right = n - 1
8      idx = -1
9      for left <= right && tab[mid] != x {
10         mid = (left + right) / 2
11         if x < tab[mid] {
12             right = mid - 1
13         }else if x > tab[mid] {
14             left = mid + 1
15         }else{
16             idx = mid
17         }
18     }
19     return idx
20 }
```

Soal 3

```
1 package main
2
3 import "fmt"
4
5 const N = 10
6
7 type tabInt [N]int
8
9 func main() {
10     var data tabInt
11     var nData, x1 int
12     fmt.Scan(&nData)
13     bacaData(&data, nData)
14     fmt.Scan(&x1)
15     fmt.Println("Data dalam array:")
16     cetakData(data, nData)
17     if binSearch(data, nData, x1) == -1 {
18         fmt.Println("Data tidak ditemukan")
19     } else {
20         fmt.Println("Data ditemukan pada index ke-", binSearch(data, nData, x1))
21     }
22 }
23
24 func bacaData(data *tabInt, nData int) {
25     for i := 0; i < nData; i++ {
26         fmt.Scan(&data[i])
27     }
28 }
29 func cetakData(data tabInt, nData int) {
30     for i := 0; i < nData; i++ {
31         fmt.Print(data[i], " ")
32     }
33     fmt.Println()
34 }
35
36 func binSearch(tab tabInt, n, x int) int {
37     var left, right, mid, idx int
38     left = 0
39     right = n - 1
40     idx = -1
41     for left <= right && tab[mid] != x {
42         mid = (left + right) / 2
43         if x < tab[mid] {
44             right = mid - 1
45         } else if x > tab[mid] {
46             left = mid + 1
47         } else {
48             idx = mid
49         }
50     }
51     return idx
52 }
53
```

```
PS D:\Matkul smester 2\Algoritma Pemrograman\praktikum\TP8_MOD_12_(BinSearch)> go run TP_MOD_12_soal3.go
7
3 5 8 10 12 15 20
10
Data dalam array:
3 5 8 10 12 15 20
Data ditemukan pada index ke- 3
PS D:\Matkul smester 2\Algoritma Pemrograman\praktikum\TP8_MOD_12_(BinSearch)> go run TP_MOD_12_soal3.go
5
1 2 4 6 9
7
Data dalam array:
1 2 4 6 9
Data tidak ditemukan
PS D:\Matkul smester 2\Algoritma Pemrograman\praktikum\TP8_MOD_12_(BinSearch)>
```