

# **TIPE DATA**

**DASAR PEMROGRAMAN**

**SUPRAYOGI**

# **TIPE DATA**

**Dasar**

**Enumerasi**

**Bentukan**

# TIPE DATA DASAR

## Char String

Type Name	Short Name	Storage	Smallest Magnitude	Largest Magnitude
short int	short	2 bytes	-32,768	32,767
int	int	4 bytes	-2,147,483,648	2,147,483,647
long int	long	4 bytes	-2,147,483,648	2,147,483,647
long long int	long long	8 bytes	-9,223,372,036,854,775,808	9,223,372,036,854,775,807
unsigned short	unsigned short	2 bytes	0	65,535
unsigned int	unsigned	4 bytes	0	4,294,967,295
unsigned long int	unsigned long	4 bytes	0	4,294,967,295
unsigned long long int	unsigned long long	8 bytes	0	18,446,744,073,709,551,615

Type	Storage	Smallest Magnitude	Largest Magnitude	Minimum Precision
float	4 bytes	$1.17549 \times 10^{-38}$	$3.40282 \times 10^{+38}$	6 digits
double	8 bytes	$2.22507 \times 10^{-308}$	$1.79769 \times 10^{+308}$	15 digits
long double	8 bytes	$2.22507 \times 10^{-308}$	$1.79769 \times 10^{+308}$	15 digits

# TIPE ENUMERASI

Program: Tipe Enumerasi

Kamus:

Type Boolean : {false, true}

Type Hari :

{senin,selasa,rabu,kamis,jumat,sabtu}

tanda : Boolean

hariku: Hari

Algoritma:

tanda=true

hariku=kamis

output (tanda,hariku)

```
//Program Tipe Enumerasi
```

```
Int main()
```

```
{//Kamus:
```

```
enum Boolean {false,true} tanda;
```

```
enum Hari
```

```
{senin,selasa,rabu,kamis,jumat,sabtu,minggu}
```

```
hariku;
```

```
//Algoritma
```

```
tanda=true;
```

```
hariku=kamis;
```

```
printf("tanda=%d\n",tanda);
```

```
printf("hariku=%d\n",hariku);
```

```
return 0;
```

```
}
```

```
D:\pengajaran\DasarPemrograman\tip3\bin\Debug\tip3.exe
```

```
tanda=1  
hariku=3
```

```
Process returned 0 (0x0) execution time : 0.016 s  
Press any key to continue.
```

# TIPE BENTUKAN/ KOMPOSISI/ ABSTRACT DATA TYPE(ADT)

Program Tipe point

Kamus:

Type point : <x:real,y:real>

P:point

Algoritma:

P.x=10

P.y=5

output (P.x,P.y)

```
in.c X main.c X
1  #include <stdio.h>
2  #include <stdlib.h>
3  //program tipe bentukan : tipe point
4  int main()
5  {
6      //kamus
7      typedef struct {
8          float x;
9          float y;
10         } point;
11     point P;
12     //algoritma
13     P.x=2.5;
14     P.y=5;
15     printf("(absis,ordinat) : (%4.2f,%4.2f)\n", P.x, P.y);
16     return 0;
17 }
```

```
D:\pengajaran\DasarPemrograman\tip4\bin\Debug\tip4.exe
(absis,ordinat) : (2.50,5.00)
Process returned 0 (0x0)   execution time : 0.016 s
Press any key to continue.
```

# TIPE BENTUKAN

## Program Tipe jam

### Kamus:

Type jam : <jj:int,mm:int,dd:int>

j : jam

### Algoritma:

j.jj=10,j.mm=30,j.dd=15

output (j.jj,j.mm,j.dd)

```
1  #include <stdio.h>
2  #include <stdlib.h>
3  //tipe bentukan:tipe jam
4  int main()
5  {
6      typedef struct {
7          int jj;
8          int mm;
9          int dd;
10         } jam;
11     jam J;
12     J.jj=8;
13     J.mm=30;
14     J.dd=15;
15
16     printf("Jam : (%d:%d:%d)", J.jj, J.mm, J.dd);
17     return 0;
18 }
```

D:\pengajaran\DasarPemrograman\tip5\bin\Debug\tip5.exe

```
Jam : <8:30:15>
Process returned 0 (0x0)   execution time : 0.010 s
Press any key to continue.
```

# TIPE RECORD

Program Tipe record

Kamus:

Type recMhs :

<nim:string,nama:string,ipk:real>

mhs : recMhs

Algoritma:

mhs.nim="A11.2017.10011"

mhs.nama="Citra"

mhs.ipk=3.10

output (mhs.nim,mhs.nama,mh.ipk)

```
1  #include <stdio.h>
2  #include <stdlib.h>
3  //program tipe_bentukan:tipe record
4  int main()
5  {
6      //kamus
7      typedef struct {
8          char nim[15];
9          char nama[40];
10         float ipk;
11     } recmhs;
12     recmhs mhs;
13     //algoritma
14     strcpy(mhs.nim, "A11.2017.10011");
15     strcpy(mhs.nama, "Putri Dahlia");
16     mhs.ipk=3.4;
17     printf("Data MHS (%s,%s,%4.2f)\n", mhs.nim, mhs.nama, mhs.ipk);
18     return 0;
19 }
20
```

```
D:\pengajaran\DasarPemrograman\t6\bin\Debug\t6.exe
Data MHS (A11.2017.10011,Putri Dahlia,3.40)
Process returned 0 (0x0)   execution time : 0.062 s
Press any key to continue.
```

# TIPE BENTUKAN

## Program Tipe point

Kamus:

Type point : <x:real,y:real>

P1,P2: point

Jarak:real

P1.x=2 , P1.y=4

P2.x=5, P2.y=2

Jarak= sqrt((P1.x - P2.x)<sup>2</sup> + (P1.y-p2.y)<sup>2</sup>)

output (Jarak)

## Program Tipe jam

Kamus:

Type jam : <jj:int,mm:int,dd:int>

Jam\_awal,Jam\_akhir : jam

Jam,sjam,menit,detik,detik\_awal,detik\_akhir,selisih:integer

Jam\_awal.jj=10,Jam\_awal.mm=30,Jam\_awal.dd=15

Jam\_akhir.jj=13,Jam\_akhir.mm=00,Jam\_akhir.dd=00

detik\_awal= (Jam\_awal.jjX3600)+(Jam\_awal.mmx60)+Jam\_awal.dd

detik\_akhir= (Jam\_akhir.jjX3600)+(Jam\_akhir.mmx60)+Jam\_akhir.dd

selisih=detik\_akhir-detik\_awal

jam=selisih/3600

sjam=selisih mod 3600

menit=sjam/60

detik=sjam mod 60

output(jam,menit,detik)