Tugas Praktikum Konsep Pemrograman

Modul Praktikum 26 - 27 | Pointer 3 & 4

Nama : Irvan Aditya Kurniawan

Kelas : 1 D4 IT B

NRP : 3124600044

SOAL :

Untuk setiap program dibawah ini,

- **Gambarkan Ilustrasi alokasi memori dari setiap baris pernyataan yang diproses**
- **Perkirakan hasil eksekusinya**

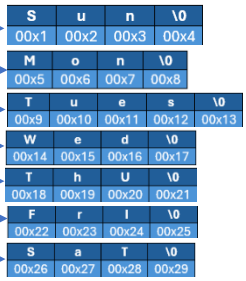
Modul Praktikum 26 | Pointer 3

1.

```
main()  {
  static char *days[] = {"Sun", "Mon", "Tues", "Wed","Thu",
                         "Fri", "Sat"};
  int i;

  for( i = 0; i < 6; ++i )
    printf( "%s\n", days[i]);
}
```

- **Illustrasi Alokasi :**

Variabel	Alamat	Value
*days[]	0060FEF1	00x1
	0060FEF2	00x5
	0060FEF3	00x9
	0060FEF4	00x14
	0060FEF5	00x18
	0060FEF6	00x22
	0060FEF7	00x26
i	0060FEF8	~~0 1 2 3 4~~ 5



- **Hasil Eksekusi :**

  Sun
  Mon
  Tues
  Wed
  Thu
  Fri

2.
```
main(){
  int a, *b, **c;

  a = 155;
  b = &a;
  c = &b;

  printf("Nilai a = %d atau %d atau %d\n", a, *b, **c);
  printf("b = %p = alamat a di memori\n", b);
  printf("c = %p = alamat b di memori\n", c);
  printf("alamat c di memori = %p\n", &c);
}
```

- **Illustrasi Alokasi :**

Variabel	Alamat	Value
a	**0060FEF1**	**155**
***b**	**0060FEF2**	**0060FEF1**
****c**	**0060FEF3**	**0060FEF2**

- **Hasil Eksekusi :**

  Nilai a = 155 atau 155 atau 155
  b = 0060FEFC = alamat a di memori
  c = 0060FEF8 = alamat b di memori
  alamat c di memori = 0060FEF4

3.
```
main(){
  int var_x = 273;
  int *ptr1;
  int **ptr2;

  ptr1 = &var_x;
  ptr2 = &ptr1;
  printf("Nilai var_x = *ptr1  = %d\n", *ptr1);
  printf("Nilai var_x = **ptr2 = %d\n\n", **ptr2);
  printf("ptr1 = &var_x = %p\n", ptr1);
  printf("ptr2 = &ptr1  = %p\n", ptr2);
  printf("       &ptr2  = %p\n", &ptr2);
}
```

- **Illustrasi Alokasi :**

Variabel	Alamat	Value
var_x	**0060FEF1**	**273**
***ptr1**	**0060FEF2**	**0060FEF1**
****ptr2**	**0060FEF3**	**0060FEF2**

- **Hasil Eksekusi :**

  Nilai var_x = *ptr1 = 273
  Nilai var_x = **ptr2 = 273

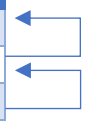
  ptr1 = &var_x = 0060FEFC
  ptr2 = &ptr1 = 0060FEF8
  &ptr2 = 0060FEF4

4.

```
#include <stdio.h>
main(){
   int a, *b, **c;

   a = 1975;
   b = &a;
   c = &b;

   printf("Nilai a = %d atau %d atau %d\n", a, *b, **c);
   printf("b = %p = alamat a di memori\n", b);
   printf("c = %p = alamat b di memori\n", c);
   printf("alamat c di memori = %p\n", &c);
}
```

- **Illustrasi Alokasi :**

Variabel	Alamat	Value
a	**0060FEF1**	**1975**
***b**	**0060FEF2**	**0060FEF1**
****c**	**0060FEF3**	**0060FEF2**



- **Hasil Eksekusi :**

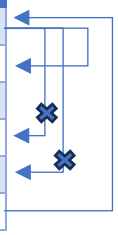
  Nilai a = 1975 atau 1975 atau 1975
  b = 0060FEFC = alamat a di memori
  c = 0060FEF8 = alamat b di memori
  alamat c di memori = 0060FEF4

5.

```
int *i;
int j=10, k, m[]={2, 5};
int **l;

i = m;
i++;
*i = j;
j = *i;
i = &j;
k = *(&j);
l = &i;
```

- **Illustrasi Alokasi :**

Variabel	Alamat	Value
***i**	**0060FEF1**	~~**0060FEF4**~~ **0060FEF5**
j	**0060FEF2**	~~**10**~~ **10**
k	**0060FEF3**	**10**
m[0]	**0060FEF4**	**2**
m[1]	**0060FEF5**	~~**5**~~ **10**
****l**	**0060FEF6**	**0060FEF1**



- **Hasil Eksekusi :**

m[0] = 2, m[1] = 10

j = 10

k = 10

i = 0060FEF0

l = 0060FEF4

6. Tentukan setiap statemen di bawah ini benar atau salah. Jika salah sertakan alasannya.

   Deklarasi :

```
int a[5] = {2,4,8,1,23};
int c = 5;
int *ptr1 = &c;
int *ptr2 = a;
```

-

Statement	Benar	Salah	Alasan
a = c;		**X**	**Karena a adalah array dan b adalah variable sehingga a harus diberikan index untuk diubah dengan nilai c**
***c = 6;**		**X**	**Karena jika simbol * digunakan untuk pointer sedangkan c adalah variable**
a[2] = c;	**X**		
***ptr2 = c;**	**X**		
&ptr1 = c;		**X**	**Karena address tidak bisa diganti dengan nilai variable**
***(ptr2 + 1) = *(a + 3);**	**X**		
c = *(ptr2 + 1);	**X**		
c = &ptr1;		**X**	**Karena tidak bisa memasukkan alamat ptr1 kedalam nilai variable c**
c = a[3] + 2;	**X**		
***(ptr2 + 2) = *ptr1;**	**X**		

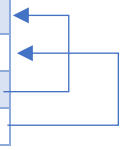
Modul Praktikum 27 | Pointer 4

1.

```
#include <stdio.h>
void naikkan_nilai(int *x, int *y);

main() {
  int a = 3;
  int b = 7;

  printf("SEMULA : a = %d  b = %d\n", a, b);

  naikkan_nilai(&a, &b);
  printf("KINI   : a = %d  b = %d\n", a, b);
}

void naikkan_nilai(int *x, int *y){
  *x = *x + 2;
  *y = *y + 2;
}
```

- **Illustrasi Alokasi :**

Variabel	Alamat	Value
a	**0060FEF1**	~~**3**~~ **5**
b	**0060FEF2**	~~**7**~~ **9**
***x**	**0060FEF3**	**0060FEF1**
***y**	**0060FEF4**	**0060FEF2**



- **Hasil Eksekusi :**

  SEMULA : a = 3 b = 7

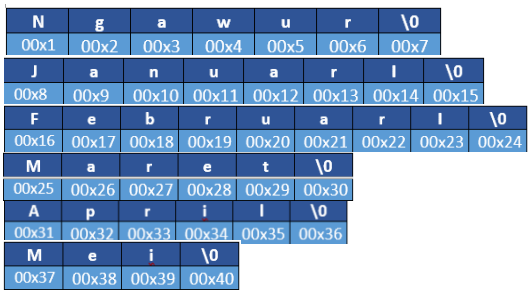
  KINI : a = 5 b = 9

2.

```
#include <stdio.h>
char *nama_bulan(int n);

main(){
  int bl;

  printf("Bulan 1..12 : ");
  scanf("%d", &bl);
  printf("Bulan ke-%d adalah %s\n", bl, nama_bulan(bl));
}

char *nama_bulan(int n){
  static char *bulan[] = {
          "Ngawur",
          "Januari",
          "Februari",
          "Maret",
          "April",
          "Mei",
          "Juni",
          "Juli",
          "Agustus",
          "September",
          "Oktober",
          "November",
          "Desember"
  };
  return ((n<1||n>12) ? bulan[0] : bulan[n]);
}
```

- **Illustrasi Alokasi :**

Variabel	Alamat	Value
*bulan[]	0060FEF1	00x1
	0060FEF2	00x8
	0060FEF3	00x16
	0060FEF4	00x25
	0060FEF5	00x31
	0060FEF6	00x37
	0060FEF7 – 0060FEF13	00x41 – 00x87
b1	0060FEF14	1
n	0060FEF14	1



- **Hasil Eksekusi :**

  Bulan 1..12 : 1

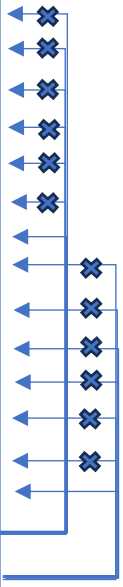
  Bulan ke-1 adalah Januari

3.

```
#include <stdio.h>

char strA[80] = "A string to be used for demonstration";
char strB[80];

main(){
    char *pA, *pB;

    puts(strA);
    pA = strA;
    puts(pA);
    pB = strB;
    putchar('\n');

    while(*pA != '\0')
        *pB++ = *pA++;

    *pB = '\0';
    puts(strB);
}
```

- **Illustrasi Alokasi :**

Variabel	Alamat	Value
strA	0060FEF1	A
	0060FEF2	
	0060FEF3	s
	0060FEF4	t
	0060FEF5	r
	0060FEF6	i
	0060FEF7 - 0060FEF38	
strB	0060FEF81	A
	0060FEF82	
	0060FEF83	s
	0060FEF84	t
	0060FEF85	r
	0060FEF86	i
	0060FEF87 - 0060FEF160	
*pA	0060FEF161	~~0060FEF1~~ - 0060FEF38
*pB	0060FEF162	~~0060FEF81~~ - 0060FEF108



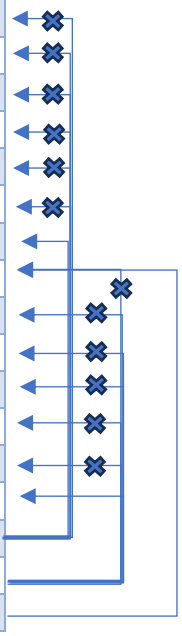
- **Hasil Eksekusi :**
  A string to be used for demonstration
  A string to be used for demonstration

  A string to be used for demonstration

4.
```
#include <stdio.h>
char *my_strcpy(char *, char *);

main(){
    char strA[80]="A string to be used for demonstration";
    char strB[80];

    my_strcpy(strB, strA);
      puts(strB);
 }

char *my_strcpy(char *destination, char *source) {
    char *p = destination;
    while (*source != '\0')
        *p++ = *source++;
        *p = '\0';
        return destination;
    }
```

- **Illustrasi Alokasi :**

Variabel	Alamat	Value
strA	0060FEF1	A
	0060FEF2	
	0060FEF3	s
	0060FEF4	t
	0060FEF5	r
	0060FEF6	i
	0060FEF7 - 0060FEF80	
strB	0060FEF81	A
	0060FEF82	
	0060FEF83	s
	0060FEF84	t
	0060FEF85	r
	0060FEF86	i
	0060FEF87 - 0060FEF160	
*p	0060FEF161	~~0060FEF1~~ - 0060FEF38
*source	0060FEF162	~~0060FEF81~~ - 0060FEF108
*destination	0060FEF163	0060FEF161



- **Hasil Eksekusi :**
  A string to be used for demonstration

5.

```c
#include <stdio.h>
char *my_strcpy(char [], char []);
main(){
 char strA[80]="A string to be used for demonstration";
 char strB[80];

 my_strcpy(strB, strA);
 puts(strB);
}
char *my_strcpy(char dest[], char source[]){
    int i = 0;
    while (source[i] != '\0')
    {
    dest[i] = source[i];
    i++;
    }
    dest[i] = '\0';
    return dest;
 }
```

- **Illustrasi Alokasi :**

Variabel	Alamat	Value
strA	0060FEF1	A
	0060FEF2	
	0060FEF3	s
	0060FEF4	t
	0060FEF5	r
	0060FEF6	i
	0060FEF7 - 0060FEF80	
strB	0060FEF81	A
	0060FEF82	
	0060FEF83	s
	0060FEF84	t
	0060FEF85	r
	0060FEF86	i
	0060FEF87 - 0060FEF160	
dest[0]	0060FEF161	A
dest[1]	0060FEF162	
dest[2]	0060FEF163	s
dest[3]	0060FEF164	t
dest[4]	0060FEF165	r
dest[5]	0060FEF166	i
dest[6] – dest [79]	0060FEF167 - 0060FEF240	
source[0]	0060FEF241	A
source[1]	0060FEF242	
source[2]	0060FEF243	s
source[3]	0060FEF244	t
source[4]	0060FEF245	r
source[5]	0060FEF246	i
source[6] – source[79]	0060FEF247 - 0060FEF320	
i	0060FEF321	~~0 1 2 3 4 5~~..... 37

- **Hasil Eksekusi :**

  A string to be used for demonstration

6.

```c
#include <stdio.h>

void rotasi(int *a, int *b, int *c) {
    int temp = *a;
    *a = *c;
    *c = *b;
    *b = temp;
}

int main() {
    int input_nilai_1, input_nilai_2, input_nilai_3;
    printf("Masukkan nilai input_nilai_1: ");
    scanf("%d", &input_nilai_1);
    printf("Masukkan nilai input_nilai_2: ");
    scanf("%d", &input_nilai_2);
    printf("Masukkan nilai input_nilai_3: ");
    scanf("%d", &input_nilai_3);

    printf("\nSebelum rotasi:\n");
    printf("input_nilai_1 = %d, input_nilai_2 = %d, input_nilai_3 = %d\n", input_nilai_1,
        input_nilai_2, input_nilai_3);

    rotasi(&input_nilai_1, &input_nilai_2, &input_nilai_3);

    printf("\nSetelah rotasi:\n");
    printf("input_nilai_1 = %d, input_nilai_2 = %d, input_nilai_3 = %d\n", input_nilai_1,
        input_nilai_2, input_nilai_3);

    return 0;
```

- **Hasil Eksekusi :**

```
Masukkan nilai input_nilai_1: 1
Masukkan nilai input_nilai_2: 2
Masukkan nilai input_nilai_3: 3

Sebelum rotasi:
input_nilai_1 = 1, input_nilai_2 = 2, input_nilai_3 = 3

Setelah rotasi:
input_nilai_1 = 3, input_nilai_2 = 1, input_nilai_3 = 2
```