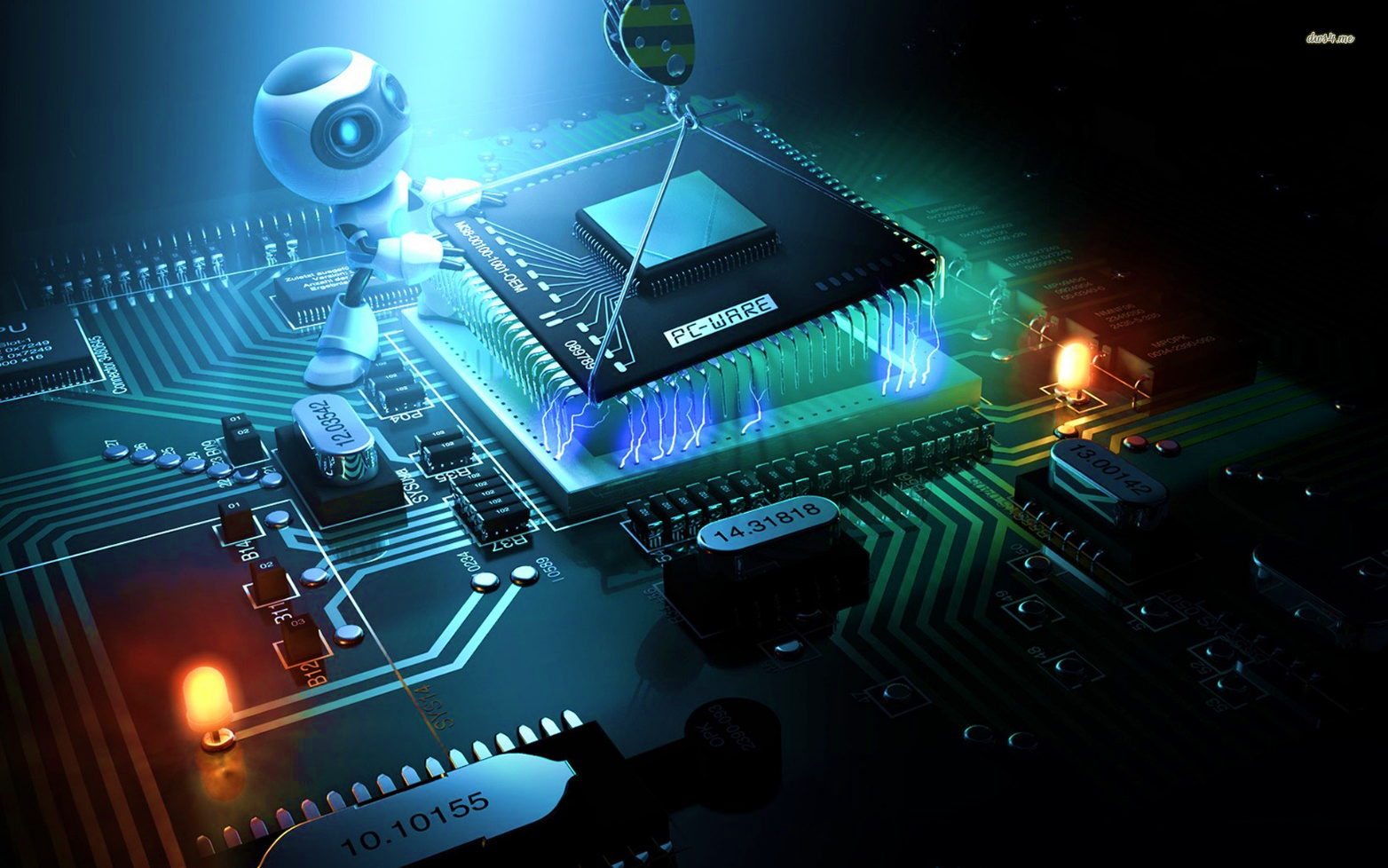
Ejercicios Semana 6-7

ESTRUCTURA DE COMPUTADORES



bRYAN mORENO PICAMÁN

Contenido

[Descripción 2](#_Toc468361913)

[3.35 Solución 3](#_Toc468361914)

[3.36 Solución 3](#_Toc468361915)

[3.37 Solución 3](#_Toc468361916)

[3.38 Solución 3](#_Toc468361917)

[3.39 Solución 4](#_Toc468361918)

[3.41 Solución 4](#_Toc468361919)

[3.42 Solución 5](#_Toc468361920)

[3.50 Solución 5](#_Toc468361921)

[3.53 Solución 5](#_Toc468361922)

# Descripción

Cap.3 CS: APP (Bryant/O’Hallaron)

Probl. 3.50 - 3.53 pp.318, 323-25

Probl. 3.35 – 3.39 pp.267-68, 270, 272, 277

Probl. 3.41 ‐ 3.42 pp.285

# 3.35 Solución

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Array | Tam. elemento | Tam. Total | Dirección inicio | Elemento i |
| S | 2 | 14 | XS | XS + 2\*i |
| T | 4 | 12 | XT | XT + 4\*i |
| U | 4 | 24 | XU | XU + 4\*i |
| V | 12 | 96 | XV | XV + 12\*i |
| W | 4 | 16 | XW | XW + 4\*i |

# 3.36 Solución

|  |  |  |  |
| --- | --- | --- | --- |
| Expresión | Tipo | Valor | Código ensamblador |
| S+1 | short \* | XS+2 | leal 2(%edx), %eax |
| S[3] | short | M[XS + 6] | movw 6(%edx), %ax |
| &S[i] | short\* | XS + 2i | leal (%edx, %ecx,2), %eax |
| S[4\*i+1] | short | M[XS + 8i+1] | movw 2(%edx, %ecx,8), %ax |
| S+i-5 | short \* | XS + 2i - 10 | leal -10(%edx,%ecx,2), %eax |

# 3.37 Solución

movl 8(%ebp),%ecx

movl 12(%ebp),%edx

leal 0(,%ecx,8),%eax

subl %ecx,%eax

addl %edx,%eax

leal (%edx,%edx,4,), %edx

addl %ecx,%edx

movl mat1(,%eax,4),%eax

addl mat2(,%edx,4),%eax

# 3.38 Solución

void fix\_set (fix\_matrix A, int val){

int i=0;  
 int \*Abase = &A[0][0];

do {  
 Abase[i] = val;  
 i += (N+1);  
 } while(i != (N+1)\*N);  
}

# 3.39 Solución

a)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| offset | 0 | 4 | 8 | 12 | 16 |
| contents | p | s.x | s.y | next |  |

b) Requiere 16 bytes.

c)

void sp\_init(struct prob \*sp){

sp->s.x = sp->s.y;

sp->p = &(sp->s.x);

sp->next = sp;

}

# 3.41 Solución

a)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| i | c | j | d | total | alineamiento |
| 0 | 4 | 8 | 12 | 16 | 4 |

b)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| i | c | d | j | total | alineamiento |
| 0 | 4 | 5 | 8 | 12 | 4 |

c)

|  |  |  |  |
| --- | --- | --- | --- |
| w | c | total | alineamiento |
| 0 | 6 | 10 | 2 |

d)

|  |  |  |  |
| --- | --- | --- | --- |
| w | c | total | alineamiento |
| 0 | 8 | 20 | 4 |

e)

|  |  |  |  |
| --- | --- | --- | --- |
| a | p | total | alineamiento |
| 0 | 32 | 36 | 4 |

# 3.42 Solución

a)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | a | b | c | d | e | f | g | h |
| Tamaño | 4 | 2 | 8 | 1 | 4 | 1 | 8 | 4 |
| Desplazamiento | 0 | 4 | 8 | 16 | 20 | 24 | 32 | 40 |

b) El tamaño total de la estructura es 48 bytes long

c)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | c | g | a | e | h | b | d | f |
| Tamaño | 8 | 8 | 4 | 4 | 4 | 2 | 1 | 1 |
| Desplazamiento | 0 | 8 | 16 | 20 | 24 | 28 | 30 | 31 |

# 3.50 Solución

void incrprob (long x, long \* q, int \*t);  
void incrprob (unsigned x, long \*q, int \*t);  
void incrprob(int x, long \*q, int \*t);  
void incrprob(unsigned int x, long \*q, int \*t);

# 3.53 Solución

a)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| i | c | j | d | total | alineamiento |
| 0 | 4 | 8 | 16 | 24 | 8 |

b)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| i | c | j | d | total | alineamiento |
| 0 | 8 | 9 | 12 | 16 | 8 |

c)

|  |  |  |  |
| --- | --- | --- | --- |
| w | c | total | alineamiento |
| 0 | 6 | 10 | 2 |

d)

|  |  |  |  |
| --- | --- | --- | --- |
| W | c | total | alineamiento |
| 0 | 8 | 32 | 8 |

e)

|  |  |  |  |
| --- | --- | --- | --- |
| a | p | total | alineamiento |
| 0 | 48 | 36 | 8 |