Dibujo en blanco y negro

Descripción generada automáticamente con confianza mediaForma

Descripción generada automáticamente con confianza baja**Universidad Nacional Autónoma de México**

**Facultad de Estudios Superiores Aragón**

Ingeniería en Computación

**COMPILADORES**

**Grupo:**2608

**Profesor:**Pérez Medel Marcelo

**TAREA 4**

Generar el código intermedio

Generar el ensamblador de una dirección

**Alumna:** Cruz Cervantes Guadalupe Sugeily

LDA- Carga

ADD- Suma

SUB- Resta

MUL- Multiplicacion

DIV- Division

STA- Toma

**11.- a\*(b+(c-d-e)/f)**

**\***

**a +**

**b /**

**- f**

**- e**

**C d**

**Prefija**

\* a + b / - - c d e f

**Postfija**

a b c d - e - f / + \*

**Código Intermedio**

**t1=c-d t2=t1-e t3=t2/f t4=b+t3 t5=** a\*t4

|  |
| --- |
|  |
|  |
| d |
| c |
| b |
| a |

|  |
| --- |
|  |
|  |
| e |
| t1 |
| b |
| a |

|  |
| --- |
|  |
|  |
| f |
| t2 |
| b |
| a |

|  |
| --- |
|  |
|  |
|  |
| t3 |
| b |
| a |

|  |
| --- |
|  |
|  |
|  |
|  |
| t4 |
| a |

|  |
| --- |
|  |
|  |
|  |
|  |
|  |
| t5 |

a\*t4

b+t3

c-d

t1-e

t2/f

**Código Ensamblador**

LDA c;

SUB d;

STA t1;

LDA t1;

SUB e;

STA t2;

LDA t2;

DIV f;

STA t3;

LDA b;

ADD t3;

STA t4;

LDA a;

MUL t4;

STA t5;

**12.- a/b-c+d+(e\*f/g+h)**

**+**

**+ +**

**- d / h**

**/ c \* g**

**a b e f**

**Prefija**

+ + - / a b c d + / \* e f g h

**Postfija**

a b / c - d + e f \* g / h + +

**Código Intermedio**

t1=a/b t2=t1-c t3=t2+d t4=e\*f t5=t4/g t6=t5+h t7=t3+t6

|  |
| --- |
|  |
|  |
| b |
| a |

|  |
| --- |
|  |
|  |
| c |
| t1 |

|  |
| --- |
|  |
|  |
| d |
| t2 |

|  |
| --- |
|  |
| f |
| e |
| t3 |

|  |
| --- |
|  |
| g |
| t4 |
| t3 |

|  |
| --- |
|  |
| h |
| t5 |
| t3 |

|  |
| --- |
|  |
|  |
| t6 |
| t3 |

t5+h

t4/g

e\*f

t2+d

t1-c

a/b

|  |
| --- |
|  |
|  |
|  |
| t7 |

t3+t6

**Código Ensamblador**

LDA a; STA t5;

DIV b; LDA t5;

STA t1; ADD h;

LDA t1; STA t6;

SUB c; LDA t3;

STA t2; ADD t6;

LDA t2; STA t7;

ADD d;

STA t3;

LDA e;

MUL f;

STA t4;

LDA t4;

DIV g;

**13.- (a\*b)/(c+d\*e)\*f**

**\***

**/ f**

**\* + a b c \***

**d e**

**Prefija**

\* / \* a b + c \* d e f

**Postfija**

a b \* c d e \* + / f \*

**Código Intermedio**

t1=a\*b t2=d\*e t3=c+t2 t4=t1/t3 t5=t4\*f

|  |
| --- |
| e |
| d |
| c |
| t1 |

|  |
| --- |
|  |
| t2 |
| c |
| t1 |

|  |
| --- |
|  |
|  |
| t3 |
| t1 |

|  |
| --- |
|  |
|  |
| f |
| t4 |

|  |
| --- |
|  |
|  |
|  |
| t5 |

|  |
| --- |
|  |
|  |
| b |
| a |

t4\*f

t1/t3

c+t2

d\*e

a\*b

**Código Ensamblador**

LDA a; LDA t1;

MUL b; DIV t3;

STA t1; STA t4;

LDA d; LDA t4;

MUL e; MUL f;

STA t2; STA t5;

LDA c;

ADD t2;

STA t3;

**14.- a+(b\*c-d-e)**

**+**

**a -**

**- e**

**\* d**

**b c**

**Prefija**

+ a - - \* b c d e

**Postfija**

a b c \* d - e - +

**Código Intermedio**

t1=b\*c t2=t1-d t3=t2-e t4=a+t3

|  |
| --- |
|  |
| d |
| t1 |
| a |

|  |
| --- |
|  |
| e |
| t2 |
| a |

|  |
| --- |
|  |
|  |
| t3 |
| a |

|  |
| --- |
|  |
|  |
|  |
| t4 |

|  |
| --- |
|  |
| c |
| b |
| a |

a+t3

t2-e

t1-d

b\*c

**Código Ensamblador**

LDA b; LDA t2;

MUL c; SUB e;

STA t1; STA t3;

LDA t1; LDA a;

SUB d; ADD t3;

STA t2; STA t4;

**15.- (a\*b/c)+(d-e)/f-g**

**-**

**+ g**

**/ /**

**\* c - f**

**a b d e**

**Prefija**

- + / \* a b c / - d e f g

**Postfija**

a b \* c / d e - f / + g -

**Código Intermedio**

t1=a\*b t2=t1/c t3=d-e t4=t3/f t5=t2+t4 t6=t5-g

|  |
| --- |
|  |
|  |
| c |
| t1 |

|  |
| --- |
|  |
| e |
| d |
| t2 |

|  |
| --- |
|  |
| f |
| t3 |
| t2 |

|  |
| --- |
|  |
|  |
| t4 |
| t2 |

|  |
| --- |
|  |
|  |
| g |
| t5 |

|  |
| --- |
|  |
|  |
|  |
| t6 |

|  |
| --- |
|  |
|  |
| b |
| a |

t5-g

t3/f

t2+t4

d-e

t1/c

a\*b

**Código Ensamblador**

LDA a; LDA t3;

MUL b; DIV f;

STA t1; STA t4;

LDA t1; LDA t2;

DIV c; ADD t4;

STA t2; STA t5;

LDA d; LDA t5;

SUB e; SUB g;

STA t3; STA t6;

**16.- a+b-(c/d)**

**-**

**+ /**

**a b c d**

**Prefija**

- + a b / c d

**Postfija**

a b + c d / -

**Código Intermedio**

t1=a+b t2=c/d t3=t1-t2

|  |
| --- |
| d |
| c |
| t1 |

|  |
| --- |
|  |
| t2 |
| t1 |

|  |
| --- |
|  |
|  |
| t3 |

|  |
| --- |
|  |
| b |
| a |

t1-t2

c/d

a+b

**Código Ensamblador**

LDA a; STA t2;

ADD b; LDA t1;

STA t1; SUB t2;

LDA c; STA t3;

DIV d;

**17.- (a/b)+(c-d+e)-f**

**-**

**+ f**

**/ +**

**a b - e**

**c d**

**Prefija**

- + / a b + - c d e f

**Postfija**

a b / c d - e + + f -

**Código Intermedio**

t1=a/b t2=c-d t3=t2+e t4=t1+t3 t5=t4-f

|  |
| --- |
|  |
| d |
| c |
| t1 |

|  |
| --- |
|  |
| e |
| t2 |
| t1 |

|  |
| --- |
|  |
|  |
| t3 |
| t1 |

|  |
| --- |
|  |
|  |
| f |
| t4 |

|  |
| --- |
|  |
|  |
|  |
| t5 |

|  |
| --- |
|  |
|  |
| b |
| a |

t4-f

t1+t3

t2+e

c-d

a/b

**Código Ensamblador**

LDA a; LDA t1;

DIV b; ADD t3;

STA t1; STA t4;

LDA c; LDA t4;

SUB d; SUB f;

STA t2; STA t5;

LDA t2;

ADD e;

STA t3;

**18.- a/b/c\*d/e-f\*(g+h)**

**-**

**/ \***

**\* e f +**

**/ d g h**

**/ c**

**a b**

**Prefija**

- / \* / / a b c d e \* f + g h

**Postfija**

a b / c / d \* e / f g h + \* -

**Código Intermedio**

t1=a/b t2=t1/c t3=t2\*d t4=t3/e t5=g+h t6=f\*t5 t7=t4-t6

|  |
| --- |
|  |
|  |
| c |
| t1 |

|  |
| --- |
|  |
|  |
| d |
| t2 |

|  |
| --- |
|  |
|  |
| e |
| t3 |

|  |
| --- |
| h |
| g |
| f |
| t4 |

|  |
| --- |
|  |
| t5 |
| f |
| t4 |

|  |
| --- |
|  |
|  |
| t6 |
| t4 |

|  |
| --- |
|  |
|  |
| b |
| a |

f\*t5

g+h

t3/e

t2\*d

t1/c

a/b

|  |
| --- |
|  |
|  |
|  |
| t7 |

t4-t6

**Código Ensamblador**

LDA a; LDA g;

DIV b; SUM h;

STA t1; STA t5;

LDA t1; LDA f;

DIV c; MUL t5;

STA t2; STA t6;

LDA t2; LDA t4;

MUL d; SUB t6;

STA t3; STA t7;

LDA t3;

DIV e;

STA t4;

**19.- (a-b)\*c-d/e**

**-**

**\* /**

**- c d e**

**a b**

**Prefija**

- \* - a b c / d e

**Postfija**

a b - c \* d e / -

**Código Intermedio**

t1=a-b t2=t1\*c t3=d/e t4=t2-t3

|  |
| --- |
|  |
|  |
| c |
| t1 |

|  |
| --- |
|  |
| e |
| d |
| t2 |

|  |
| --- |
|  |
|  |
| t3 |
| t2 |

|  |
| --- |
|  |
|  |
|  |
| t4 |

|  |
| --- |
|  |
|  |
| b |
| a |

t2-t3

d/e

t1\*c

a-b

**Código Ensamblador**

LDA a; LDA d;

SUB b; DIV e;

STA t1; STA t3;

LDA t1; LDA t2;

MUL c; SUB t3;

STA t2; STA t4;

**20.- (a+b)-c/d**

**-**

**+ /**

**a b c d**

**Prefija**

- + a b / c d

**Postfija**

a b + c d / -

**Código Intermedio**

t1=a+b t2=c/d t3=t1-t2

|  |
| --- |
|  |
| d |
| c |
| t1 |

|  |
| --- |
|  |
|  |
| t2 |
| t1 |

|  |
| --- |
|  |
|  |
|  |
| t3 |

|  |
| --- |
|  |
|  |
| b |
| a |

t1-t2

c/d

a+b

**Código Ensamblador**

LDA a; DIV d; STA t3;

ADD b; STA t2;

STA t1; LDA t1;

LDA c; SUB t2;