

# CUESTIONARIO - EJERCICIOS SEBESTA

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## CAPITULO 8

3. Rewrite the following code segment using a multiple-selection statement in the following languages:

### LITERAL A

```
Select Case (k)
  Case (1, 2)
    J = 2 * K - 1
  Case (3, 5)
    J = 3 * K + 1
  Case (4)
    J = 4 * K - 1
  Case (6, 7, 8)
    J = K - 2
  Case Default
    Print *, 'Error in Select, K = ', K
End Select
```

### LITERAL B

```
case k is
  when 1 | 2 => j := 2 * k - 1;
  when 3 | 5 => j := 3 * k + 1;
  when 4 => j := 4 * k - 1;
  when 6..8 => j := k - 2;
  when others =>
    Put ("Error in case, k =');
    Put (k);
    New_Line;
end case ;
```

### LITERAL C

```
switch (k)
{
  case 1: case 2:
    j = 2 * k - 1;
    break ;
```

```

case 3: case 5:
    j = 3 * k + 1;
    break ;
case 4:
    j = 4 * k - 1;
    break ;
case 6: case 7: case 8:
    j = k - 2;
    break ;
default :
    printf("Error in switch, k =%d\n", k);
}

```

4. Consider the following C program segment. Rewrite it using no gotos or breaks.  $j = -3$ ; for ( $i = 0$ ;  $i < 3$ ;  $i++$ ) switch ( $j + 2$ ) case 3: case 2:  $j--$ ; break; case 0:  $j += 2$ ; break; default:  $j = 0$ ; if ( $j > 0$ ) break;  $j = 3 - i$

```

j = -3;
key = j + 2;
for (i = 0; i < 10; i++){
    if ((key == 3) || (key == 2))

        j--;
    else if (key == 0)
        j += 2;
    else j = 0;
    if (j > 0)
        break ;
    else j = 3 - i;
}

```

5. In a letter to the editor of CACM, Rubin (1987) uses the following code segment as evidence that the readability of some code with gotos is better than the equivalent code without gotos. This code finds the first row of an  $n$  by  $n$  integer matrix named  $x$  that has nothing but zero values.

```

for (i = 1; i <= n; i++) {    for (j = 1; j <= n; j++)
    if (x[i][j] != 0)        goto reject;    println
    ('First all-zero row is:', i);    break; reject: }

```

Rewrite this code without gotos in one of the following languages: C, C++, Java, or Ada. Compare the readability of your code to that of the example code.

#### LENGUAJE C

```
for (i = 1; i <= n; i++) {
    flag = 1;
    for (j = 1; j <= n; j++)
        if (x[i][j] <> 0) {
            flag = 0;
            break ;
        }
    if (flag == 1) {
        printf("First all-zero row is: %d\n", i);
        break ;
    }
}
```

#### LENGUAJE ADA

```
for I in 1..N loop
    Flag := true ;
    for J in 1..N loop
        if X(I, J) /= 0 then
            Flag := false ;
        exit ;
    end if ;
end loop ;
if Flag = true then
    Put("First all-zero row is: ");
    Put(I);
    Skip_Line;
    exit ;
end if ;
end loop ;
```