Compiler Optimization Exercise:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1 | := | #1 |  | Indx |
| 2 | BGT | Indx | #8 | (19) |
| 3 | - | Indx | #1 | i1 |
| 4 | \* | i1 | #10 | i2 |
| 5 | \* | #3 | HAL | i3 |
| 6 | - | i3 | #1 | i4 |
| 7 | - | i4 | #1 | i5 |
| 8 | + | i2 | i5 | i6 |
| 9 | \* | i6 | #4 | i7 |
| 10 | := | i8 |  | i1 |
| 11 | - | i2 | #10 | i9 |
| 12 | := | i3 |  | i10 |
| 13 | := | i4 |  | i11 |
| 14 | + | i9 | i11 | i12 |
| 15 | \* | i12 | #4 | i13 |
| 16 | := | Y[i13] |  | X[i7] |
| 17 | := | i14 | Indx | Indx |
| 18 | JMP |  |  | (2) |
| 19 |  |  |  |  |

Quadruples Exercise

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | := | #1 |  | I |  |
| 2 | BGT | I | #15 | (19) |  |
| 3 | \* | J | #2 | i1 | 2J |
| 4 | + | i1 | #1 | i2 | 2J+1 |
| 5 | - | #21 | #1 | i3 | upper2-lower2 |
| 6 | + | i3 | #1 | i4 | upper2-lower2+1 |
| 7 | - | I | #1 | i5 | s1-lower |
| 8 | - | i2 | #1 | i6 | s2-lower |
| 9 | \* | i5 | i3 | i7 |  |
| 10 | + | i7 | i6 | i8 | [(s1 - lower1) \* (upper2 - lower2 + 1) + (s2 - lower2)] |
| 11 | \* | #4 | i8 | i9 | full function |
| 12 | - | I | #1 | i10 | s1-lower |
| 13 | - | i1 | #1 | i11 | s2-lower |
| 14 | \* | i5 | i3 | i12 |  |
| 15 | + | i7 | i6 | i13 | [(s1 - lower1) \* (upper2 - lower2 + 1) + (s2 - lower2)] |
| 16 | \* | #4 | i8 | i14 | full function |
| 17 | := | X[i9] |  | Y[i14] |  |
| 18 | JMP |  |  | (2) |  |
| 19 |  |  |  |  |  |