Marisha Adriaanzen 43054226 Assignment 2

1. if(x > y++) $\therefore 3\tau_{fetch} + 1\tau_{<} + \tau_{++}$
2. if(age == 18) $\therefore 2\tau_{fetch} + \tau_{<}$
3. return --weight; $\therefore \tau_{return} + \tau_{--} + 2\tau_{fetch}$
4. if(age+10 == 50) $\therefore \tau_{<} + 3\tau_{fetch} + \tau_{+}$
5. a = b[--c] $\therefore \tau_{[.]} + \tau_{store} + 4\tau_{fetch} + \tau_{--}$
6. ~~if(x * = z < 60) $\therefore 3\tau_{fetch} + \tau_{x} + 2\tau_{<}$~~
6. if(x >= y[z]) $\therefore \tau_{[.]} + \tau_{<} + 4\tau_{fetch}$
7. if(x*=z < 60) $\therefore \tau_{x} + \tau_{<} + 3\tau_{fetch} + \tau_{store}$
8. if(x[i] > z[c]) $\therefore 2\tau_{[.]} + \tau_{<} + 6\tau_{fetch}$
9. xc = getY(a[i]) $\therefore \tau_{[.]} + 2\tau_{store} + \tau_{call} + 3\tau_{fetch} + \tau_{getY(a[i])}$
10. sum = x[2] + z[0]; $\therefore 6\tau_{fetch} + \tau_{+} + 2\tau_{[.]} + \tau_{store}$
11. value = A + getVal(C) $\therefore 3\tau_{store} + \tau_{call} + 2\tau_{fetch} + \tau_{getVal(c)}$

12. a) $3(1)+(1)+(1) = 5$
    b) ~~$+1+2(1) =$~~ $2(1)+1 = 3$
    c) $1+1+2(1) = 4$
    d) $1+3(1)+1 = 5$
    e) $1+1+4(1)+1 = 7$
    f) $1+1+4(1) = 6$

13. i = 0 $\therefore \tau_{fetch} + \tau_{store} = 1+1 = 2$
    i <= n $\therefore (\tau_{<} + 2\tau_{fetch}) \times (n+2) = (1+2)(n+2) = 3(n+2)$
    ++i $\therefore (2\tau_{fetch} + \tau_{+}) \times (n+1) = (2+1)(n+1) = 3(n+1)$

14. i = 0 $\therefore \tau_{fetch} + \tau_{store} = 1+1 = 2$
    i <= n+1 $\therefore (3\tau_{fetch} + \tau_{+} + \tau_{<}) \times (n+3) = (3+1+1)(n+3) = 5(n+3)$
    ++i $\therefore (2\tau_{fetch} + \tau_{+} + \tau_{store}) \times (n+2) = (2+1+1)(n+2) = 4(n+2)$

15. 6a: $1+1 = 2$
    6b: $(2(1)+1+1) \times (n+2) = 4(n+2)$

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6c : $(2(i)+1+1) \times (n+1) = 4(n+1)$

8a : $(1+1) \times (n+1) = 2(n+1)$
8b : $(3(i)+1+1) \sum_{i=0}^{n} (i+3) = 5 \sum_{i=0}^{n} (i+3)$
8c : $(2(i)+1+1) \sum_{i=0}^{n} (i+2) = 4 \sum_{i=0}^{n} (i+2)$

16 6a: $O(1)$
6b: $O(n)$
6c: $O(n)$
8a: $O(n)$
8b: $O(n^2)$
8c: $O(n^2)$