

ITI1120 Section 3 Exercise Solutions

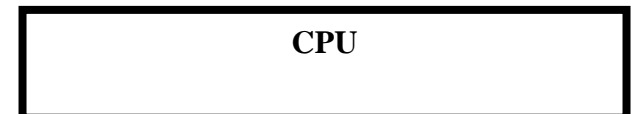
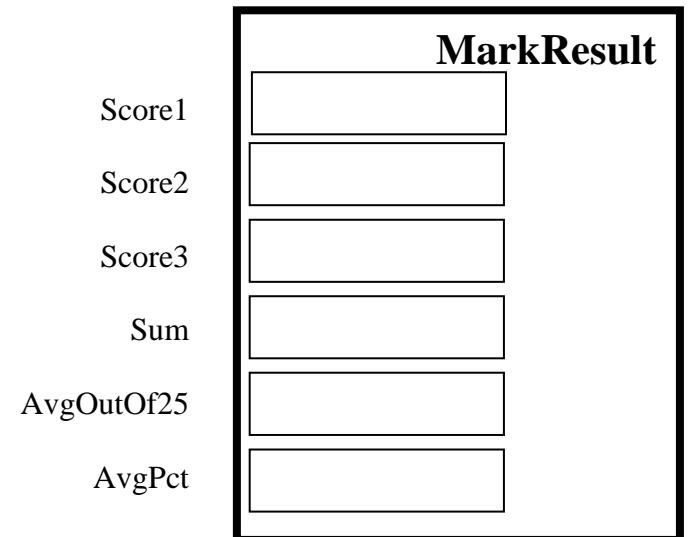
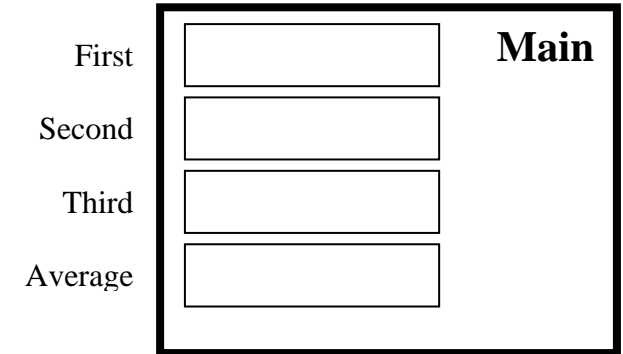
Exercise 3-1 - Main Algorithm

Program Memory

Working memory

Givens: none
 Results: none
 Intermediates:
 Num
 ctr (counter)
 Header: **Main()**
 Body:

Givens: **Score1, Score2, Score3** (scores out of 25)
 Results: **AvgPct** (average of scores, out of 100)
 Intermediates: **Sum** (sum of scores)
 AvgOutOf25 (average of scores, out of 25)
 Header: **AvgPct ← MarkResult(Score1, Score2, Score3)**
 Body:
 1. Sum ← Score1 + Score2 + Score3
 2. AvgOutOf25 ← Sum / 3
 3. AvgPct ← AvgOutOf25 * 4



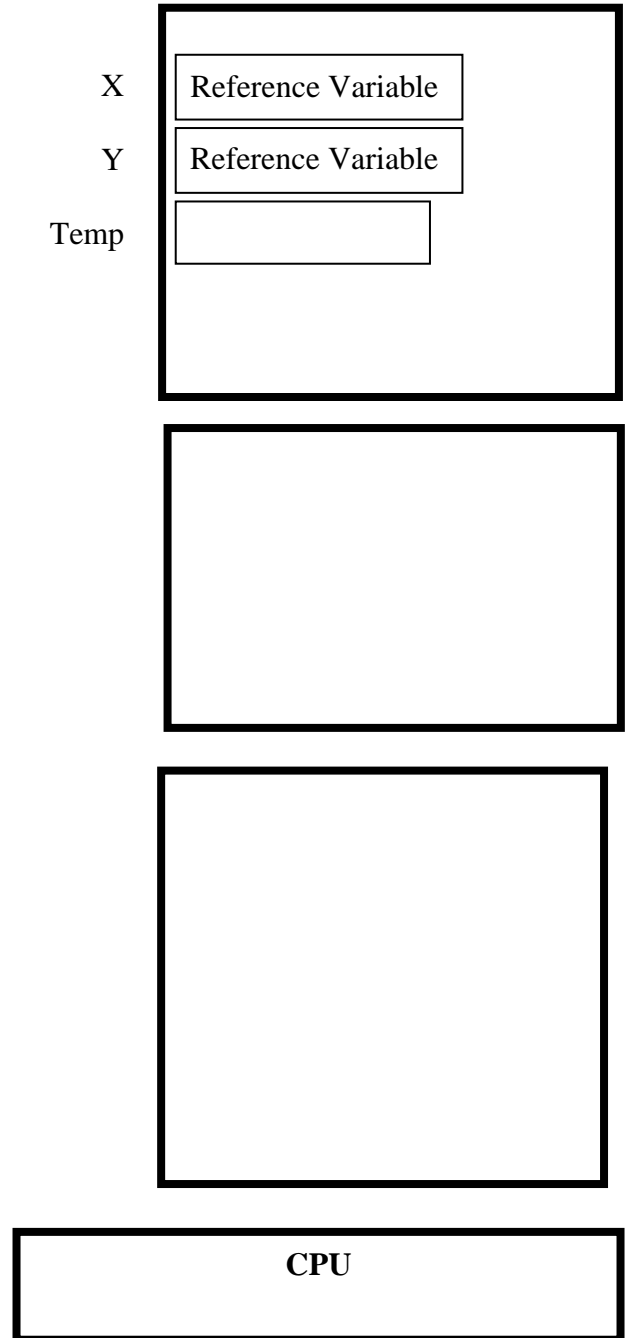
Program Memory

Exercise 3-2 - Swap 2 Values

Working memory

GIVENS: **X, Y** (**two numbers**)
RESULTS:
MODIFIEDS: **X, Y** (**swapped**)
INTERMEDIATES:
 Temp (**temporary storage for X**)
HEADER: **Swap(X, Y)**

BODY:
 Temp ← X
 X ← Y
 Y ← Temp



```

public static void main (String[] args)
{
    // SET UP KEYBOARD INPUT
    Scanner keyboard = new Scanner( System.in );
    // DECLARE VARIABLES/DATA DICTIONARY
    double first, second, third ; // three scores
    double average ; // average of scores
    // READ IN Values from the user
    System.out.println ("Please enter 3 score values: ");
    first = keyboard.nextDouble( );
    second = keyboard.nextDouble( );
    third = keyboard.nextDouble( );
    // Call to markResults
    average = markResult(first, second, third);
    // PRINT OUT RESULTS
    System.out.println("The average is " + average);
}
public static double markResult(double score1,
                                double score2,
                                double score3 )
{
    // Intermediate variables
    double sum ; // sum of score1, score2, score3
    double avgOutOf25; // Average out of 25
    // Result variable
    double avgPct ; // average out of 100
    // BODY OF ALGORITHM
    sum = score1 + score2 + score3;
    avgOutOf25 = sum / 3.0;
    avgPct = avgOutOf25*4;
    // RETURN RESULTS
    return(avgPct);
}
    
```

