

SPD Programming problem number: __1__

A *Defining diagram*

Input	Processing	Output
array of 200 char	get array loop through array checking for vowels if vowel is found then add 1 to vowelCount print vowelCount	times vowels occurred

B *Solution algorithm*

```

vowel_counter
  get arrayOfChar
  set vowelCount to 0
  DOWHILE arrayOfChar exists
    IF character = a,e,i,o,u THEN
      vowelCount += 1
    ENDIF
  Print VowelCount
END

```

SPD Programming problem number: _3__

A *Defining diagram*

Input	Processing	Output
10 int from an operator	get 10 int calculate sum of 10 int get average = divide sum by 10 loop through each of 10 int, checking for numbers less than average if int is less than average then add 1 to lessThanAverage variable print lessThanAverage variable	number of int's that were below average of all 10 submitted

B *Solution algorithm*

```

sub_average counter

```

```

prompt for 10_int
get 10_int
    set sum to 0
    set average to 0
    set lessThanAverage to 0
    DOWHILE index = 1-10
        sum +=10_int[index]
    ENDDO
    average = sum/10
    DOWHILE index = 1-10
        IF 10_int[index]<average THEN
            lessThatAverge += 1
        ENDIF
    ENDDO
    print lessThanAverage
END

```

SPD Programming problem number: _5__

A ***Defining diagram***

Input	Processing	Output
get studentRecords (grade # and letter)	<p>get studentRecords</p> <p>loop through studentRecords confining that letter and grade and corresponding correctly AND that the the grade point is numeric</p> <p>load confirmed values into parallel arrays</p> <p>stop processing at EOF, error if more records and in the file than in the array</p>	two dimetional array of grades, # and letter

B *Solution algorithm*

```
studentRecords_checker
get studentRecords
    set grades to 0
    set studentRecordsChecked = 0
    DOWHILE studentRecords exist
        DOWHILE index = 0 - (length of) studentRecords
            DOWHILE f = 0 OR d = 1-3 OR c=4-6 OR b=6-9 OR a=9-12:
                studentRecordsChecked += (NumberGrade, LetterGrade)
            ENDDO
        ENDO
    ENDDO
    IF (length of)studentRecordsChecked != (length of) studentRecords THEN
        print "ERROR! More records are in the checked records than original"
    ELSE
        print "successfully checked!"
    ENDIF
END
```