Solutions for the Second Term Examination 2011-2012

Subject: Computer Programming


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Q1: Run the following program:

FOR I = 1 TO 4
READ A(I)
NEXT I
FOR J = 1 TO 4
READ B(J)
NEXT J
FOR K = 1 TO 4
FOR L = 1 TO 4
PRINT A(K); B(L),
NEXT L
PRINT
NEXT K
DATA 1,3,5,7
DATA 2,3,6,9
END

Run out:

1  2  1  3  1  6  1  9
3  2  3  3  3  6  3  9
5  2  5  3  5  6  5  9
7  2  7  3  7  6  7  9
Q2: Write a program to compute Y value from the following series, use and run for 5 terms only.

\[
\frac{Y^2}{\pi} = \frac{x^3 + 30}{2!} - \frac{x^5 + 29}{4!} + \frac{x^7 + 28}{6!} - \frac{x^9 + 27}{8!} + \cdots
\]

Solution:

READ x

p = 3.14

I = 2

j = 30

l = 1

n = 1

5  f = 1

k = 1

10  f = f * k

k = k + 1

If k \leq i Go To 10

t = ((x ^ (i + 1) + j) / f) * l

s = s + t

i = i + 2

j = j - 1

l = - l

n = n + 1

If n \leq 5 Go To 5
Q3: Write a program to create user defined function to find the distance from the origin point.

REM Distance from the Origin
FUNCTION Dist (X,Y)
Dist = SQR(X * X + Y * Y)
END FUNCTION

INPUT X,Y
PRINT Dist (X,Y)

Q4: Run the following program:

DIM vars(5)
FOR x = 1 to 5
    vars(x) = x * 2
NEXT x
FOR x = 1 to 5
    PRINT vars(x),
NEXT x

Output:
2 4 6 8 10
Q5: Develop a program to print out two columns of 6 numbers on screen in an array, then multiply the numbers in each column, save in an array then output the answer to a third column.

DIM A(6)
DIM B(6)
DIM TOTAL(6)

FOR I = 1 to 6
LOCATE 5,1
REM Input the first number
PRINT "Column 1 Row "; I; ": "
INPUT "", a(I)
REM Input the second number
PRINT "Column 2 Row "; I; ": "
INPUT "", b(I)
REM Set the product of the two numbers in the total array
total(I) = a(I) * b(I)
NEXT I

REM Put a separator between your inputs and your output
PRINT "*************************
REM Print out what the columns are in their column
PRINT "A", "B", "A*B"
REM Cycle through every number we're gotten and output them in their columns
FOR I = 1 TO 6
PRINT a(I), b(I), total(I)
NEXT I
**Q6**: Write a program to create user defined function to calculate a student grade (consider A for grades 90-100, B for grades 80-90, C for grades 70-80, D for grades 60-70, E for grades 50-60, F for others), based on five scores, and find the overall average.

DECLARE FUNCTION getGrade$ (score1!, score2!, score3!, score4!, score5!)

INPUT "Enter the student's name: ", stuName$

INPUT "Enter the student's five test scores (seperated by a comma): ", score1, score2, score3, score4, score5

grade$ = getGrade$(score1, score2, score3, score4, score5)

PRINT

PRINT stuName$; ", earned a grade of ("; grade$; ")"

END

FUNCTION getGrade$ (score1, score2, score3, score4, score5)

total Score= score1 + score2 + score3 + score4 + score5

Average = totalScore/5

SELECT CASE Average

CASE IS > 90
    getGrade$ = "A"

CASE IS > 80
    getGrade$ = "B"

CASE IS > 70
    getGrade$ = "C"

CASE IS > 60
getGrade$ = "D"

CASE ELSE
    getGrade$ = "F"
END SELECT
END FUNCTION

**Q7:** Write a program to draw a fill green square shape using points.

SCREEN 9
FOR A = 1 TO 100
    FOR B = 1 TO 100
        PSET (A, B), 10
    NEXT B
NEXT A