Start

output "Enter a 5-digit number: "

input userinput

ones = userinput % 10

tens = (userinput / 10) % 10

hundreds =   
(userinput / 100) % 10

thousands =   
(userinput / 1000) % 10

tenthousands =   
(userinput / 10000) % 10

output

"Ten Thousand's Digit is", tenthousands

"Thousand's Digit is", thousands

"Hundred's Digit is", hundreds

"Ten's Digit is", tens

"One's Digit is", ones

reversed = (ones \* 10000) + (tens \* 1000) + (hundreds \* 100) + (thousands \* 10) + tenthousands

output "The reverse order is ", reversed

End

Problem 1 - Sequential

Variables Used:

userinput, ones, tens, hundreds, thousands, tenthousands, reversed ARE NUMERIC

Begin:

DISPLAY "Enter a 5-digit number:"

ACCEPT userinput

ones = userinput % 10 // Remainder when using modulo 10 gives us the last digit of an integer

tens = (userinput / 10) % 10 // Integer division by 10^n removes n digits from the right, then use modulo 10

hundreds = (userinput / 100) % 10

thousands = (userinput / 1000) % 10

tenthousands = (userinput / 10000) % 10

// Display each extracted digit

DISPLAY "Ten Thousand's Digit is", tenthousands

DISPLAY "Thousand's Digit is", thousands

DISPLAY "Hundred's Digit is", hundreds

DISPLAY "Ten's Digit is", tens

DISPLAY "One's Digit is", ones

// Formula for reversed number

reversed = (ones \* 10000) + (tens \* 1000) + (hundreds \* 100) + (thousands \* 10) + tenthousands

DISPLAY "The reverse order is ", reversed

End

output "Enter numeric day: "

Start

input day

output "Invalid numeric day 1-31 only!"

T

IF day < 1 OR day > 31

A

F

dayOfWeek = day % 7

F

T

IF dayOfWeek == 1

DISPLAY "THURSDAY"

A

F

T

ELSE IF dayOfWeek == 2

DISPLAY "FRIDAY"

A

F

T

ELSE IF dayOfWeek == 3

DISPLAY "SATURDAY"

A

F

T

ELSE IF dayOfWeek == 4

DISPLAY "SUNDAY"

A

F

B

Problem 2 - Conditional

Variables Used:

day, dayOfWeek ARE NUMERIC

Begin:

DISPLAY "Enter numeric day: "

ACCEPT day

// Check if input is within range

IF day < 1 OR day > 31 THEN

DISPLAY "Invalid numeric day 1-31 only!"

ELSE // Make Dec 1 = 1 (Thursday), then mod 7 for weekly cycle

dayOfWeek = day % 7

IF dayOfWeek == 1 THEN // December 1st falls on (Thursday)

DISPLAY "THURSDAY"

ELSE IF dayOfWeek == 2 THEN

DISPLAY "FRIDAY"

ELSE IF dayOfWeek == 3 THEN

DISPLAY "SATURDAY"

ELSE IF dayOfWeek == 4 THEN

DISPLAY "SUNDAY"

ELSE IF dayOfWeek == 5 THEN

DISPLAY "MONDAY"

ELSE IF dayOfWeek == 6 THEN

DISPLAY "TUESDAY"

ELSE

DISPLAY "WEDNESDAY"

ENDIF

ENDIF

End

Problem 2 - Conditional

F

F

T

T

A

DISPLAY "WEDNESDAY"

End

ELSE IF dayOfWeek == 6

DISPLAY "TUESDAY"

A

ELSE IF dayOfWeek == 5

DISPLAY "MONDAY"

A

B

output "Enter positive number: "

input num

Start

i = 1

A

A

T

output " Invalid number! Positive Only…"

num < 1

output i

output "Factors of ", num, “: “

F

F

**D**

i <= num

**C**

T

F

num % i = 0

**B**

T



i = i + 1

**C**

**B**

**D**

End

Problem 3 - Iterative

Variables Used:

num, i ARE NUMERIC

Begin:

DISPLAY "Enter a positive number: "

ACCEPT num

WHILE num < 1 DO

BEGIN

DISPLAY "Invalid number! Positive Only…"

DISPLAY "Enter a positive number: "

ACCEPT num

END

DISPLAY "Factors of ", num, ": "

i = 1

WHILE i <= num DO

BEGIN

IF num % i = 0 THEN

DISPLAY i

END IF

i = i + 1

END

End