Module main()

//Declare the necessary variables

String hexDigit

//Declare value variable to be used later for converting decimal to binary number

Int value = 0

//Define/gather user input

Display "Enter a hex digit: "

Input hexDigit

//If statement to check if the hex digit is only one digit long

If hexDigit != 1

Display hexDigit + " is an invalid input. You may only enter one hex digit."

End if

//Convert hexDigit to char

char ch = hexDigit

//Convert character to an integer

If ('A' <= ch && ch <= 'F')

value = ch - 'A' + 10

Else if (Character.isDigit(ch))

value = ch

//Invalid input statement

Else

Display ch + " is an invalid input"

End if

//An array to store digits of binary number

Int[] binaryNum = new int[32]

//Declare i to use as counter

Int i = 0

//While loop used to calculate digits of binary number

While (value > 0)

//Store remainder in array

binaryNum[i] = value % 2

value = value / 2

i++

End while

//Print out array in reverse order to show binary number correctly

For (Int j = i - 1; j >= 0; j--)

Display binaryNum[j]

End Module