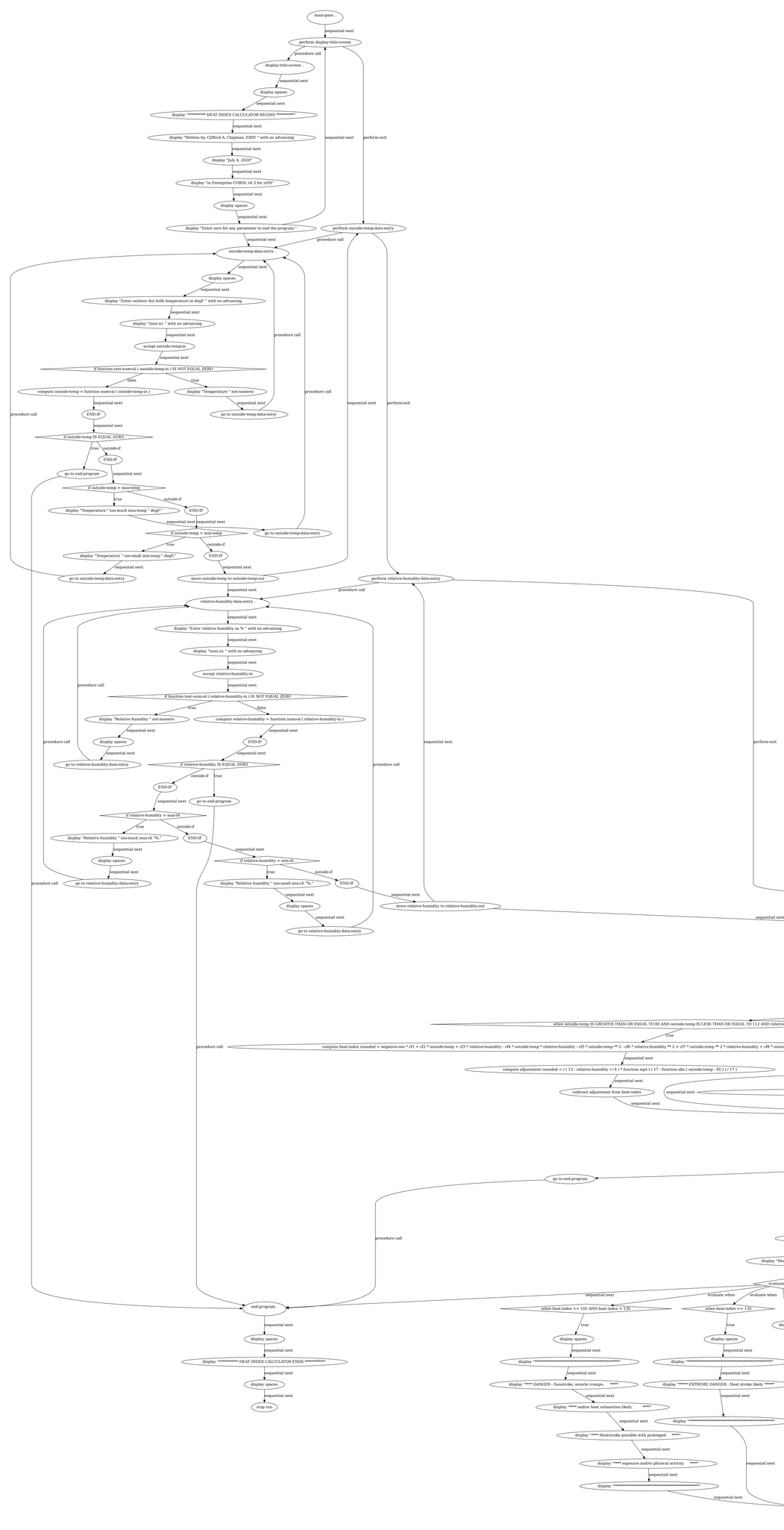
main-para .
sequential next
perform display-title-screen
procedure call
display-title-screen .
sequential next
display spaces
sequential next
display "********** HEAT INDEX CALCULATOR BEGINS **********"
sequential next
display "Written by, Clifford A. Chipman, EMIT " with no advancing
sequential next
display "July 4, 2020"
sequential next
display "in Enterprise COBOL v6.3 for zOS"
sequential next
display spaces
sequential next
display "Enter zero for any parameter to end the program."
sequential next
sequential next
perform-exit
perform outside-temp-data-entry
procedure call
outside-temp-data-entry .
sequential next
display spaces
sequential next
display "Enter outdoor dry bulb temperature in degF " with no advancing
sequential next
display "(nnn.n)> " with no advancing
sequential next
accept outside-temp-in
sequential next
if function test-numval (outside-temp-in) IS NOT EQUAL ZERO
false
true
compute outside-temp = function numval (outside-temp-in)
display "Temperature " not-numeric
sequential next
go to outside-temp-data-entry
sequential next
END-IF
sequential next
if outside-temp IS EQUAL ZERO
true
outside-if
END-IF
go to end-program
sequential next
if outside-temp > max-temp
true
outside-if
display "Temperature " too-much max-temp " degF."
END-IF
sequential next
sequential next
if outside-temp < min-temp
go to outside-temp-data-entry
true
outside-if
display "Temperature " too-small min-temp " degF."
END-IF
sequential next
go to outside-temp-data-entry
move outside-temp to outside-temp-out
sequential next
procedure call
sequential next
perform-exit
perform relative-humidity-data-entry
procedure call
relative-humidity-data-entry .
sequential next
display "Enter relative humidity as % " with no advancing
sequential next
display "(nnn.n)> " with no advancing
sequential next
accept relative-humidity-in
sequential next
if function test-numval (relative-humidity-in) IS NOT EQUAL ZERO
true
false
display "Relative humidity " not-numeric
compute relative-humidity = function numval (relative-humidity-in)
sequential next
sequential next
display spaces
END-IF
sequential next
sequential next
go to relative-humidity-data-entry
if relative-humidity IS EQUAL ZERO
sequential next
outside-if
true
END-IF
go to end-program
sequential next
if relative-humidity > max-rh
true
outside-if
display "Relative humidity " too-much max-rh "%."
END-IF
sequential next
display spaces
sequential next
go to relative-humidity-data-entry
if relative-humidity < min-rh
true
outside-if
display "Relative humidity " too-small min-rh "%."
END-IF
sequential next
display spaces
sequential next
go to relative-humidity-data-entry
move relative-humidity to relative-humidity-out
sequential next
procedure call
sequential next
perform-exit
perform calculate-it
procedure call
calculate-it .
sequential next
compute heat-index rounded = 0.5 * (outside-temp + 61.0 + ((outside-temp - 68.0) * 1.2) + relative-humidity * 0.094)
sequential next
compute heat-index rounded = function mean (heat-index outside-temp)
sequential next
evaluate TRUE
evaluate when
when outside-temp IS GREATER THAN OR EQUAL TO 80 AND outside-temp IS LESS THAN OR EQUAL TO 112 AND relative-humidity IS LESS THAN 13
true
compute heat-index rounded = negative-one * cf1 + cf2 * outside-temp + cf3 * relative-humidity - cf4 * outside-temp * relative-humidity - cf5 * outside-temp ** 2 - cf6 * relative-humidity ** 2 + cf7 * outside-temp ** 2 * relative-humidity + cf8 * outside-temp * relative-humidity ** 2 - cf9 * outside-temp ** 2 * relative-humidity ** 2
sequential next
compute adjustment rounded = ((13 - relative-humidity) / 4) * function sqrt ((17 - function abs (outside-temp - 95)) / 17)
sequential next
subtract adjustment from heat-index
sequential next
evaluate when
when heat-index IS GREATER THAN 80
true
sequential next
compute heat-index rounded = negative-one * cf1 + cf2 * outside-temp + cf3 * relative-humidity - cf4 * outside-temp * relative-humidity - cf5 * outside-temp ** 2 - cf6 * relative-humidity ** 2 + cf7 * outside-temp ** 2 * relative-humidity + cf8 * outside-temp * relative-humidity ** 2 - cf9 * outside-temp ** 2 * relative-humidity ** 2
sequential next
evaluate when
when relative-humidity IS GREATER THAN 85 AND outside-temp IS GREATER THAN OR EQUAL TO 80 AND outside-temp IS LESS THAN OR EQUAL TO 87
true
compute heat-index rounded = negative-one * cf1 + cf2 * outside-temp + cf3 * relative-humidity - cf4 * outside-temp * relative-humidity - cf5 * outside-temp ** 2 - cf6 * relative-humidity ** 2 + cf7 * outside-temp ** 2 * relative-humidity + cf8 * outside-temp * relative-humidity ** 2 - cf9 * outside-temp ** 2 * relative-humidity ** 2
sequential next
compute adjustment rounded = ((relative-humidity - 85) / 10) * ((87 - outside-temp) / 5)
sequential next
add adjustment to heat-index
sequential next
END-EVALUATE
sequential next
move heat-index to heat-index-out
sequential next
perform display-results
perform-exit
procedure call
display-results .
sequential next
display spaces
sequential next
display "Outdoor Temperature: " outside-temp-out " degF"
sequential next
display "Relative Humidity: " relative-humidity-out "%"
sequential next
display "Heat Index: " heat-index-out " degF"
sequential next
evaluate TRUE
sequential next
evaluate when
when heat-index >= 105 AND heat-index < 130
true
display spaces
sequential next
display "**********************************"
sequential next
display "***** DANGER - Sunstroke, muscle cramps, *****"
sequential next
display "***** and/or heat exhaustion likely. *****"
sequential next
display "***"
sequential next
display "***** Heatstroke possible with prolonged *****"
sequential next
display "***** exposure and/or physical activity. *****"
sequential next
display "***"
sequential next
evaluate when
when heat-index >= 130
true
display spaces
sequential next
display "**********************************"
sequential next
display "****** EXTREME DANGER - Heat stroke likely. ******"
sequential next
display "***"
sequential next
evaluate when
false
display spaces
sequential next
evaluate when
when heat-index > 79 AND heat-index < 90
true
display spaces
sequential next
display "**********************************"
sequential next
display "*** CAUTION - Fatigue possible with prolonged ***"
sequential next
display "*** exposure and/or physical activity. ***"
sequential next
display "***"
sequential next
display "**** with prolonged exposure and/or physical ****"
sequential next
display "**** activity. ****"
sequential next
display "***"
sequential next
evaluate when
when heat-index >= 90 AND heat-index < 105
true
display spaces
sequential next
display "**********************************"
sequential next
display "**** EXTREME CAUTION - Sunstroke, muscle ****"
sequential next
display "**** cramps, and/or heat exhaustion possible ****"
sequential next
display "**** with prolonged exposure and/or physical ****"
sequential next
display "**** activity. ****"
sequential next
display "***"
sequential next
END-EVALUATE
sequential next
backward
test
go to end-program
procedure call
end-program .
sequential next
display spaces
sequential next
display "********** HEAT INDEX CALCULATOR ENDS **********"
sequential next
display spaces
sequential next
stop run