```
; Define constants
THRESHOLD_COLD equ 18  ; Threshold temperature for standby (e.g., 18°C)
THRESHOLD_HOT equ 25   ; Threshold temperature to turn on AC (e.g., 25°C)

; Define memory locations
TEMP_SENSOR equ 0x4000 ; Memory location of the temperature sensor
AC_CONTROL equ 0x5000  ; Memory location to control the AC

; Define AC states
AC_ON equ 1
AC_OFF equ 0
AC_STANDBY equ 2

; Main program start
start:
   ; Read the current temperature from the sensor
   mov ax, TEMP_SENSOR
   in al, ax
   mov bl, al  ; Store temperature in bl for comparison

   ; Compare temperature with THRESHOLD_COLD
   cmp bl, THRESHOLD_COLD
   jl standby_mode ; Jump to standby mode if temperature is less than THRESHOLD_COLD

   ; Compare temperature with THRESHOLD_HOT
   cmp bl, THRESHOLD_HOT
   jge turn_on_ac ; Jump to turn on AC if temperature is greater than or equal to
THRESHOLD_HOT

   ; Otherwise, turn off the AC
   call turn_off_ac
   jmp end_program

standby_mode:
   ; Put AC in standby mode
   mov ax, AC_CONTROL
   mov al, AC_STANDBY
   out ax, al
   jmp end_program

turn_on_ac:
   ; Turn on the AC
   mov ax, AC_CONTROL
   mov al, AC_ON
   out ax, al
   jmp end_program

turn_off_ac:
   ; Turn off the AC
   mov ax, AC_CONTROL
   mov al, AC_OFF
   out ax, al
   ret

end_program:
   ; End of the program
   hlt

; End of code
```