

Cooling load calculator using python-

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CODE-

```
def main():  
    print("Cooling Load Calculator")  
  
    # Taking user inputs  
    area = float(input("Enter the area of the building (in square meters): "))  
    occupants = int(input("Enter the number of occupants: "))  
    building_type = input("Enter the type of building (residential/commercial): ")  
    outdoor_temp = float(input("Enter the outdoor temperature (in Celsius): "))  
    indoor_temp = float(input("Enter the indoor desired temperature (in Celsius): "))  
  
    # Calculate cooling load based on building type  
    if building_type.lower() == "residential":  
        cooling_load = 100 * occupants  
    elif building_type.lower() == "commercial":  
        cooling_load = 150 * occupants  
    else:  
        print("Invalid building type entered.")  
        return  
  
    # Calculate heat transfer due to conduction  
    U = 30 # Overall heat transfer coefficient in W/m²°C  
    q_conduction = U * area * (outdoor_temp - indoor_temp)
```

```
# Calculate sensible cooling load

sensible_cooling_load = q_conduction + cooling_load

# Display the final sensible cooling load

print("Sensible Cooling Load:", sensible_cooling_load, "W")

if __name__ == "__main__":
    main()
```

OUTPUT-

```
Cooling Load Calculator
Enter the area of the building (in square meters): 500
Enter the number of occupants: 10
Enter the type of building (residential/commercial): residential
Enter the outdoor temperature (in Celsius): 45
Enter the indoor desired temperature (in Celsius): 17
Sensible Cooling Load: 421000.0 W
```