// Attached: HW_1A(a,e) // File: HW_1A.pdf //
========== // // Programmer: Moe Mogasemi // Class: CS1B // Instructor: Med Mogasemi // //
========== // Program: Average Temperature Calculator //
========== // Description: // This program calculates the average temperature of three cities based on // user input. It takes the temperatures, computes the average, and displays it // to the user. //
==========

#include #include

using namespace std;

// Function prototypes double getSalesAmt(double& ); double calcCommission(double& ); double calcPay(double&); void displayPay(double& salesAmt, double& commission, const double& basePay, double& pay);

// ---- main ---------- // This is the main function where the program starts. It declares variables // for sales amount, commission, base pay, and total pay. It then calls the // respective functions to calculate and display the results. // ---------- int main(void){

```
// Declaring variables
double salesAmt = 0.0;
double commission = 0.0;
double pay = 0.0;
const double BASE_PAY = 2500.00;

// Get the sales amount from the user
getSalesAmt(salesAmt);

// Calculate the commission based on the sales amount
commission = calcCommission(salesAmt);

// Calculate the total pay (base pay + commission)
pay = calcPay(commission);

// Display the sales amount, commission, base pay, and total pay
displayPay(salesAmt, commission, BASE_PAY, pay);
```

} // end of main

// ==== getSalesAmt
========== // This function prompts the user to input their monthly sales amount. It // returns the sales amount to the main function. // // Input: // salesAmt - Reference variable to store the user-provided sales amount. // // Output: // Returns the

user-provided sales amount. //
========== ====== double getSalesAmt(double& salesAmt){ cout << "Enter monthly sales amount: "; cin >> salesAmt;

```
return salesAmt;
```

} // end of getSalesAmt

// ==== calcCommission
========== // This function calculates the commission based on the sales amount. It uses // a tiered system: // - 2% commission for sales over $50,000 // - 1.5% commission for sales over $25,000 but less than or equal to $50,000 // - No commission for sales $25,000 or below. // // Input: // salesAmt - The sales amount provided by the user. // // Output: // Returns the calculated commission. //
========== ====== double calcCommission(double& salesAmt){ double commission = 0.0;

```
// Commission is 2% of the sales amount
if (salesAmt > 50000){
    commission = salesAmt * 0.02;
// Commission is 1.5% of the sales amount
} else if (salesAmt > 25000){
    commission = salesAmt * 0.015;
}

// Commission is None
return commission;
```

} // end of calcCommission

// ==== calcPay
========== // This function calculates the total pay by adding the base pay to the // commission. // // Input: // commission - The commission calculated based on sales amount. // // Output: // Returns the total pay (base pay + commission). //
========== ====== double calcPay(double& commission){ const double BASE_PAY = 2500.00; double pay = 0.0;

```
pay = BASE_PAY + commission;

return pay;
```

} // end of calcPay

```
// ==== displayPay
========================================================== // This function displays the sales amount, commission, base pay, and total pay // to the user in a formatted output. // // Input: // salesAmt - The sales amount provided by the user. // commission - The calculated commission based on sales amount. // basePay - The base pay (constant value). // pay - The total pay (base pay + commission). // // Output: // Prints the details to the console. //
========================================================================== ====== void displayPay(double& salesAmt, double& commission, const double& basePay, double& pay){ cout << fixed << setprecision(2); cout << "Monthly Sales: " << salesAmt << endl; cout << "Commission: " << commission << endl; cout << "Base Pay: " << basePay << endl; cout << "Total Pay: " << pay << endl; } // end of displayPay

/* ================================== Output
================================== Enter monthly sales amount: 60000 Monthly Sales: 60000.00 Commission: 1200.00 Base Pay: 2500.00 Total Pay: 3700.00 Press any key to close this window . . . */
```