**#1.Problem analysis**

Input :- Height ,weight

Out put:- The body mass index(BMI)

* operation

Calculate the BMI using the formula: BMI = weight / (height \* height)

Display the calculated BMI using cout.

End the program

**#2. Problem analysis**

Input output

* the capacity of the fuel tank in gallons -- miles without refueling
* the miles per gallon the automobile can be driven

Process/ operation

- Prompt user for fuel tank capacity and miles per gallon

- Read the values of capacity and miles per gallon

- Calculate the number of miles the automobile can be driven without refueling using the formula: miles = capacity \* miles per gallon

- Display the calculated number of miles

**#3.Problem analysis**

Input:- Enter a letter

Output:- Uppercase equivalent

Lowercase equivalent

* Process /operation

- Prompt user for a letter

- Read the input letter

- Convert the letter to its uppercase or lowercase equivalent

- Display the converted letter

**#4.Program analysis**

Input: Output:

Enter the value of x The Result of XY

Enter the value of y

* Process/operation

- Prompt user for the values of X and Y

- Read the values of X and Y

- Calculate the result of X^Y using the pow() function

- Display the calculated result

**#5.Problem analysis**

Input:

- Employee name

- Weekly working hours

- Bonus rate per hour

- Base salary

Output:

- Gross salary

- Net salary

- Bonus payment

Process:

1. Prompt the user to enter the employee name, weekly working hours, bonus rate per hour, and base salary.

2. Calculate the gross salary using the formula: gross\_salary = (weekly\_working\_hours \* base\_salary) + (bonus\_rate\_per\_hour \* weekly\_working\_hours).

3. Calculate the pension deduction using the formula: pension\_deduction = 0.05 \* gross\_salary.

4. Calculate the tax deduction using the formula: tax\_deduction = 0.15 \* gross\_salary.

5. Calculate the net salary using the formula: net\_salary = gross\_salary - (pension\_deduction + tax\_deduction).

6. Calculate the bonus payment using the formula: bonus\_payment = bonus\_rate\_per\_hour \* weekly\_working\_hours.

7. Display the gross salary, net salary, and bonus payment.

**#6.Problem analysis**

Input:

- File size in bytes

Output:

- Time taken to send the file in seconds

Process:

1. Prompt the user to enter the file size in bytes.

2. Calculate the time taken to send the file using the formula: time\_taken = file\_size / 960.

3. Display the time taken to send the file.