Day1\_Class\_ Assignment

Temperature Converter:

Develop a temperature converter program that converts temperatures between Celsius and Fahrenheit. The program should ask the user to choose the conversion type (Celsius to Fahrenheit or Fahrenheit to Celsius) and then input the temperature value. Use a switch statement to handle the conversion type, and if-else statements to perform the actual conversion.

Start

print " Enter 1 to convert Celsius to Fahrenheit or enter 2 for Fahrenheit to Celsius"

Input num

switch ( num)

Case 1:

print " Enter the temperature value

input temp

Fahrenheit = (9/5 \* temp) + 32

print " The Fahrenheit is: " +Fahrenheit)

Break;

Case 2:

print " Enter the temperature value

input temp

Celsius = ( temp - 32 ) \* 5/9

print " The Celsius is: " +Celsius)

break;

default:

print " Invalid number "

End loop

End

Day of the Week:

Write a program that prompts the user to enter a number between 1 and 7 representing a day of the week (1 for Sunday, 2 for Monday, and so on). Use a switch statement to determine the day entered by the user and output the corresponding day name. If the user enters a number outside the range of 1-7, display an error message.

Start

print " enter a number between 1 to 7 "

input number

switch ( number )

case 1:

print " Sunday "

break;

case 2:

print " Monday "

break;

case 3:

print " Tuesday "

break;

case 4:

print " Wednesday "

break;

case 5:

print " Thursday "

break;

case 6:

print " Friday "

break;

case 7:

print " Saturday "

break;

default:

print " invalid number "

end switch

end

BMI Calculator:

Create a BMI (Body Mass Index) calculator program. The program should ask the user for their weight (in kilograms) and height (in meters). Then, calculate the BMI using the formula BMI = weight / (height \* height). Finally, classify the BMI into categories according to the following criteria:

Underweight: BMI < 18.5

Normal weight: 18.5 <= BMI < 25

Overweight: 25 <= BMI < 30

Obese: BMI >= 30

Start

print " Enter the weight in kilogram "

input weight

print " Enter the height in meters "

input height

BMI = weight/ (height \* height )

if ( BMI < 18.5 )

print " underweight "

else if ( 18.5 <= BMI < 25 )

print " Normal weight "

else if ( 25 <= BMI < 30 )

print " Overweight "

else

print " Obese "

End if and else

end

Factorial Calculator:

Write a program that calculates the factorial of a given number using a loop. The factorial of a non-negative integer n is denoted by n! and is the product of all positive integers less than or equal to n. For example, 5! = 5 × 4 × 3 × 2 × 1 = 120. Prompt the user to enter a number, then use a loop to calculate and output its factorial.

Start

print " Enter a number "

input num

fact = 1;

for (i=1; i<=num; i++)

fact = fact \* i;

print (" Factorial is: " + fact)

End loop

End

Number Guessing Game:

Develop a number guessing game where the program randomly generates a number between 1 and 100. The user has to guess the number, and the program provides feedback (higher, lower, or correct) after each guess. Use a loop to allow the user to keep guessing until they correctly guess the number.

start

Random r = new Random();

int low = 1;

int high = 100;

int result = r.nextInt(high-low) + low;

i=0

Do

Print "Enter guess number"

input guessNumber

if( guessNumber == random )

print "correct "

i=1

else if ( guessNumber > random )

print " lower "

else if ( guessNumber < random )

print " higher "

while ( i < 1 );

End loop

End

Voting Eligibility Checker:

Create a program that determines whether a person is eligible to vote in an election based on the following criteria:

Age must be 18 or above.

Must be a citizen of the country.

Prompt the user to input their age, citizenship status (yes/no), and felony status (yes/no), and then use complex logical expressions to determine and output whether they are eligible to vote.

start

print " Enter a number "

input age

print " Enter citizenship status (yes/no) "

input citizenship

print "Enter felony status (yes/no) "

input felony

if ( age=>18 && citizenship == "yes" && felony=="yes" )

print " You are eligible to vote"

else

print " Not Eligible "

End if and else

End

Credit Card Approval System:

Design a program that evaluates whether a person is approved for a credit card based on the following criteria:

Minimum credit score requirement: 700

Maximum debt-to-income ratio: 30%

No recent bankruptcies (within the last 5 years)

Prompt the user to input their credit score, debt amount, income amount, and bankruptcy status, then use complex logical expressions to determine and output whether they are approved for the credit card.

start

print " enter credit score "

input score

print " enter debt amount "

input debt

print "enter income amount "

input income

print " enter bankruptcies within the last 5 year (yes/no) "

input bankruptcies

if(score => 700 && debt => 30% && bankruptcies ==" no")

print " You are eligible "

else

print " Not eligible "

End if and else

End

Fibonacci Sequence Generator:

Write a program to generate the Fibonacci sequence up to a specified number of terms. The Fibonacci sequence starts with 0 and 1, and each subsequent number is the sum of the two preceding numbers (0, 1, 1, 2, 3, 5, 8, 13, ...). Prompt the user to enter the number of terms they want to generate and use a loop to calculate and output the sequence.

import java.util.Scanner;

public class Fibonacci {

public static void main(String[] args)

{

Scanner sc = new Scanner(System.in);

int a=0, b=1, c;

System.out.println("Enter a number");

int number = sc.nextInt();

System.out.println(a);

System.out.println(b);

for(int i=2; i< number; i++)

{

c = a+b;

System.out.println(c);

a = b;

b = c;

}

}

}

Employee Promotion Criteria:

Develop a program that assesses whether an employee is eligible for a promotion based on the following criteria:

Must have worked for the company for at least 5 years.

Must have a performance rating of "excellent."

Must have completed at least one advanced training program.

Prompt the user to input their years of service, performance rating, and training status, then use complex logical expressions to determine and output whether they are eligible for promotion.

Start

print " Enter the year of service "

input service

print " Enter the performance rating "

input rating

print " Enter training status "

input status

if ( service => 5 && rating == " excellent " && status == 1)

print " Eligible for promotion "

else

print " Not Eligible for promotion "

end

Product Discount Calculator:

Write a program that calculates the discount amount for a product based on the following criteria:

If the product price is over $100 and the customer is a premium member, they get a 20% discount.

If the product price is over $100 and the customer is not a premium member, they get a 10% discount.

If the product price is $100 or less, there is no discount.

Prompt the user to input the product price and their premium membership status, then use complex logical expressions to calculate and output the discount amount.

start

print " Enter the product price "

input price

print " Enter your premium membership status "

input status

if( price => "$100" && status == " premium member " )

print " You are eligible for 20% discount " +price - (price\*0.2)

else if ( price => "$100" && status != "premium member " )

print " You are eligible for 10% discount " +price - (price\*0.1)

else

print " No discount "

end

Health Insurance Plan Eligibility:

Design a program that determines whether a person is eligible for a particular health insurance plan based on the following criteria:

Age must be between 18 and 65.

Must not have any pre-existing medical conditions.

Must not have any recent hospitalizations (within the last 6 months).

Prompt the user to input their age, medical condition status, and hospitalization status, then use complex logical expressions to determine and output whether they are eligible for the insurance plan.

Start

print " Enter your age "

input age

print " enter pre-existing medical condition status (yes/no)"

input medical

print " Enter hospitalization status (you have not any recent hospitalizations within the last 6 months) yes/no "

input hospital

if( (age => 18 || age <= 65) && medical == "yes" && hospital =="yes")

print " You are eligible for the insurance plan "

else

print " You are not eligible for the insurance plan "

end