

1. LOAN ELIGIBILITY CHECKER (by using if else condition)

```
#include <stdio.h>
#include <conio.h>
void main() {
    int age;
    float income;
    // Input details
    printf("Enter your age: ");
    scanf("%d", &age);
    printf("Enter your monthly income (in ₹): ");
    scanf("%f", &income);
    // Loan eligibility conditions
    if (age >= 21 && age <= 60) {
        if (income >= 20000) {
            printf("\nCongratulations! You are eligible for the loan.\n");
        } else {
            printf("\nSorry, your monthly income is insufficient to qualify for a loan.\n");
        }
    } else {
        printf("\nSorry, your age does not fall within the eligible range for a loan.\n");
    }
    getch();
}
```

2. VENDING MACHINE SIMULATOR (by using else if ladder)

```
#include <stdio.h>
#include <conio.h>
void main() {
    int choice;
```

```

// Display the menu

printf("Welcome to the Vending Machine!\n");

printf("Menu:\n");

printf("1. Coffee - ₹25\n");

printf("2. Tea - ₹20\n");

printf("3. Juice - ₹30\n");

printf("4. Water - ₹10\n");

printf("Enter your choice (1-4): ");

scanf("%d", &choice);

// Handle user choice using if-else

if (choice == 1) {

printf("\nYou selected Coffee. The price is ₹25.\n");

} else if (choice == 2) {

printf("\nYou selected Tea. The price is ₹20.\n");

} else if (choice == 3) {

printf("\nYou selected Juice. The price is ₹30.\n");

} else if (choice == 4) {

printf("\nYou selected Water. The price is ₹10.\n");

} else {

printf("\nInvalid choice! Please select a number between 1 and 4.\n");

}

getch();

}

```

3. STUDENT GRADE CLASSIFICATION (nested if else statement)

```

#include <stdio.h>

#include <conio.h>

void main() {

```

```
float percentage;

clrscr();

printf("Enter the student's percentage: ");

scanf("%f", &percentage);

if (percentage >= 90) {
    printf("Grade: A\n");
} else {
    if (percentage >= 75) {
        printf("Grade: B\n");
    } else {
        if (percentage >= 50) {
            printf("Grade: C\n");
        } else {
            printf("Grade: D\n");
        }
    }
}

getch();
}
```

4. TRAFFIC LIGHT CONTROL SYSTEM (by using do while and switch case)

```
#include <stdio.h>

void main() {
    int choice;

    printf("Traffic Light Control System\n");
    printf("1. Red\n");
    printf("2. Green\n");
    printf("3. Yellow\n");
}
```

```

printf("4. Exit\n");

do {
    printf("\nEnter the current traffic light (1-Red, 2-Green, 3-Yellow, 4-Exit): ");
    scanf("%d", &choice);

    switch(choice) {
        case 1:
            printf("The light is Red. Stop.\n");
            break;
        case 2:
            printf("The light is Green. Go.\n");
            break;
        case 3:
            printf("The light is Yellow. Caution.\n");
            break;
        case 4:
            printf("Exiting the Traffic Light Control System.\n");
            break;
        default:
            printf("Invalid input! Please enter a number between 1 and 4.\n");
    }
} while (choice != 4); // Exit the loop when user selects 4 (Exit)
}

```

5. STUDENT GRADING SYSTEM USING FOR LOOP

```

#include <stdio.h>

void main() {
    int numStudents, marks;

```

```

// Ask for the number of students
printf("Enter the number of students: ");
scanf("%d", &numStudents);

// Loop to process each student's marks
for (int i = 1; i <= numStudents; i++) {
    printf("\nEnter the marks for student %d (0-100): ", i);
    scanf("%d", &marks);

    // Grading based on the marks
    if (marks >= 90) {
        printf("Grade for student %d: A\n", i);
    } else if (marks >= 75) {
        printf("Grade for student %d: B\n", i);
    } else if (marks >= 50) {
        printf("Grade for student %d: C\n", i);
    } else {
        printf("Grade for student %d: F\n", i);
    }
}
}

```

6. Prime Number Checker(by using while loop)

```

#include <stdio.h>

void main() {
    int num, i;

    // Loop to continue checking prime numbers until the user decides to exit
    while (1) {

```

```
printf("Enter a number (enter 0 to exit): ");
scanf("%d", &num);

// Exit condition
if (num == 0) {
    printf("Exiting the program.\n");
    break; // Exit the loop if the user enters 0
}

// Simple check if number is prime
if (num == 1) {
    printf("1 is not a prime number.\n");
} else {
    int isPrime = 1; // Assume the number is prime

    for (i = 2; i < num; i++) {
        if (num % i == 0) {
            isPrime = 0; // Number is divisible, so it's not prime
            break;
        }
    }

    if (isPrime) {
        printf("%d is a prime number.\n", num);
    } else {
        printf("%d is not a prime number.\n", num);
    }
}
}
```

7. ELECTRICITY BILL CALCULATION (IF-ELSE LADDER) PROGRAM:

```
#include <stdio.h>

void main() {
    float units, bill;

    printf("Enter the total units of electricity consumed: ");
    scanf("%f", &units);

    if (units <= 50) {
        bill = 0; // No charge for the first 50 units
    }
    else if (units <= 150) {
        bill = (units - 50) * 1.5; // Charges for 51 to 150 units at ₹1.5 per unit
    }
    else if (units <= 250) {
        bill = (100 * 1.5) + (units - 150) * 2.5; // Charges for 151 to 250 units
    }
    else {
        bill = (100 * 1.5) + (100 * 2.5) + (units - 250) * 3; // Charges for units above 250
    }

    printf("The total electricity bill is: ₹%.2f\n", bill);
}
```

8. ATM TRANSACTION MENU (SWITCH-CASE + LOOP) PROGRAM:

```
#include <stdio.h>

void main() {
```

```
int choice;

float balance = 10000.00; // Initial balance in ATM

int continueTransaction = 1; // Flag to control the loop

while (continueTransaction) { // Loop runs while continueTransaction is 1
    printf("\nATM Transaction Menu:\n");
    printf("1. Check Balance\n");
    printf("2. Withdraw Money\n");
    printf("3. Deposit Money\n");
    printf("4. Transfer Funds\n");
    printf("5. Exit\n");
    printf("Enter your choice: ");
    scanf("%d", &choice);

    switch(choice) {
        case 1:
            printf("Your current balance is: ₹%.2f\n", balance);
            break;
        case 2:
            printf("Enter the amount to withdraw: ");
            float withdraw;
            scanf("%f", &withdraw);
            if (withdraw <= balance) {
                balance -= withdraw;
                printf("Transaction successful! New balance: ₹%.2f\n", balance);
            } else {
                printf("Insufficient balance.\n");
            }
            break;
        case 3:
            printf("Enter the amount to deposit: ");
```



```

float deposit;

scanf("%f", &deposit);

balance += deposit;

printf("Transaction successful! New balance: ₹%.2f\n", balance);

break;
case 4:

printf("Enter the amount to transfer: ");

float transfer;

scanf("%f", &transfer);

if (transfer <= balance) {

    balance -= transfer;

    printf("Transfer successful! New balance: ₹%.2f\n", balance);

} else {

    printf("Insufficient balance.\n");

}

break;
case 5:

printf("Exiting the ATM. Thank you!\n");

continueTransaction = 0; // Set the flag to 0 to exit the loop

break;
default:

printf("Invalid choice! Please enter a number between 1 and 5.\n");

}

}

}

```

9. TEMPERATURE CONVERTER PROGRAM (SWITCH-CASE):

```
#include <stdio.h>
```

```
void main() {  
  
    int choice;  
  
    float temp, result;  
  
    printf("Temperature Converter\n");  
    printf("1. Celsius to Fahrenheit\n");  
    printf("2. Celsius to Kelvin\n");  
    printf("3. Fahrenheit to Celsius\n");  
    printf("4. Fahrenheit to Kelvin\n");  
    printf("5. Kelvin to Celsius\n");  
    printf("6. Kelvin to Fahrenheit\n");  
    printf("7. Exit\n");  
  
    while (1) {  
  
        printf("\nEnter your choice (1-7): ");  
  
        scanf("%d", &choice);  
  
        switch(choice) {  
  
            case 1:  
  
                printf("Enter temperature in Celsius: ");  
  
                scanf("%f", &temp);  
  
                result = (temp * 9/5) + 32; // Convert Celsius to Fahrenheit  
  
                printf("%.2f Celsius = %.2f Fahrenheit\n", temp, result);  
  
                break;  
  
            case 2:  
  
                printf("Enter temperature in Celsius: ");  
  
                scanf("%f", &temp);  
  
                result = temp + 273.15; // Convert Celsius to Kelvin  
  
                printf("%.2f Celsius = %.2f Kelvin\n", temp, result);  
  
                break;  
  
            case 3:
```

```

printf("Enter temperature in Fahrenheit: ");
scanf("%f", &temp);

result = (temp - 32) * 5/9; // Convert Fahrenheit to Celsius
printf("%.2f Fahrenheit = %.2f Celsius\n", temp, result);

break;

case 4:

printf("Enter temperature in Fahrenheit: ");
scanf("%f", &temp);

result = (temp - 32) * 5/9 + 273.15; // Convert Fahrenheit to Kelvin
printf("%.2f Fahrenheit = %.2f Kelvin\n", temp, result);

break;

case 5:

printf("Enter temperature in Kelvin: ");
scanf("%f", &temp);

result = temp - 273.15; // Convert Kelvin to Celsius
printf("%.2f Kelvin = %.2f Celsius\n", temp, result);

break;

case 6:

printf("Enter temperature in Kelvin: ");
scanf("%f", &temp);

result = (temp - 273.15) * 9/5 + 32; // Convert Kelvin to Fahrenheit
printf("%.2f Kelvin = %.2f Fahrenheit\n", temp, result);

break;

case 7:

printf("Exiting the program.\n");

return; // Exit the program

default:

printf("Invalid choice! Please select a number between 1 and 7.\n");

}

}

}

```

10. BMI CALCULATOR PROGRAM (USING IF-ELSE LADDER):

```
#include <stdio.h>

void main() {
    float weight, height, bmi;

    // Input weight and height from the user
    printf("Enter weight in kilograms: ");
    scanf("%f", &weight);

    printf("Enter height in meters: ");
    scanf("%f", &height);

    // Calculate BMI
    bmi = weight / (height * height);

    // Classify the BMI result using if-else ladder
    if (bmi < 18.5) {
        printf("Your BMI is %.2f. You are Underweight.\n", bmi);
    }
    else if (bmi >= 18.5 && bmi < 24.9) {
        printf("Your BMI is %.2f. You have a Normal weight.\n", bmi);
    }
    else if (bmi >= 25 && bmi < 29.9) {
        printf("Your BMI is %.2f. You are Overweight.\n", bmi);
    }
    else {
        printf("Your BMI is %.2f. You are Obese.\n", bmi);
    }
}
```

