**BRIDGE COURSE (DAY 2)**

**PROBLEM 1:**Age Checker

Declare an int variable myAge and assign your age to it.

Write expressions using comparison operators to check if

* myAge is equal to 25.
* myAge is greater than 18.
* myAge is less than or equal to 65.
* myAge is not equal to 30.

Print the Boolean result of each expression using System.out.println().

**ALGORITHM:**

Step 1 : Start

Step 2 :Declare a variable myAge

Step 3 :Check the given condition

Step 4 : Print result

Step 5 :End

**PSEUDO CODE:**

**START**

INPUT myAge

Check the given condition

Print res

**END**

**C0DE:**

package Day2;

import java.util.Scanner;

public class AgeCheck {

public static void main(String [] args)

{

Scanner sc = new Scanner(System.in);

System.out.println("ENETR THE AGE");

int myAge=sc.nextInt();

boolean r= myAge>18? true:false;

System.out.println(r);

r=myAge>=25? true:false;

System.out.println(r);

r=myAge!=30?true:false;

System.out.println(r);

r=myAge<=65?true:false;

System.out.println(r);

}

}

**OUTPUT:**

|  |  |  |
| --- | --- | --- |
| **TC1** | **TC2** | **TC3** |
| ENETR THE AGE  25  true  true  true  true | ENETR THE AGE  18  false  false  true  true | ENETR THE AGE  30  true  true  false  true |

**PROBLEM 2:Login Credentials**

Declare two String variables: username = "admin" and password = "password123".

Declare two more variables: entered Username and entered Password, and assign some test values.

Write a logical expression that returns true only if both username and password match.

**ALGORITHM:**

Step 1 : Start

Step 2 :Declare the given variables which is username,password,enterdUsername,emterdPassword

Step 3 :Check variables are equal

Step 5 : print true if equal

Step 6 :print false if not

Step 8 :End

**PSEUDO CODE:**

**START**

Start

Declare the given variables

Check variables are equal

print true if equal

print false if not

END

**CODE:**

package Day2;

import java.util.Scanner;

public class LoginC {

public static void main(String[]args) {

String username="admin";

String password="password123";

String enterdUsername ="admin";

String enterdPassword="password123";

if((username.equals(enterdUsername)) && (password.equals(enterdPassword))) {

System.out.println(true);

}

else {

System.out.println(false);

}

}

}

**OUTPUT:**

**TC1:**

**true**

**PROBLEM 3:**Number Range

Declare an int variable num and assign it a value.

Check whether num is:

Greater than 10 AND less than 20.

Less than 5 OR greater than 100.

Print the results.

**ALGORITHM:**

Step 1 : Start

Step 2 :Declare a variable num and assign value

Step 3 :Check for the condition

Step 5 : Print respective output

Step 6 :Print out of range if the condition dosen’t satisfy

Step 8 :End

**PSEUDO CODE:**

**START**

INPUT num

Check for the condition and print respective output

END

**CODE:**

package Day2;

import java.util.Scanner;

public class NumberR {

public static void main(String[]args) {

int num=11;

if(num>10 && num<20){

System.out.println("number is greater than 10 and less than 20");

}else if(num<5||num>100){

System.out.println("number is less than 5 or greater than 100");

}else {

System.out.println("out of sequence");

}

}

}

**OUTPUT:**

|  |  |  |
| --- | --- | --- |
| **TC1** | **TC2** | **TC3** |
| num=102  “number is less than 5 or greater than 100” | num=11  "number is greater than 10 and less than 20" | num=100  “out of sequence" |

**PROBLEM 4:** Positive, Negative, or Zero

Get an integer input from the user using Scanner.

Write an if-else if-else structure that:

* Prints "Positive" if the number is greater than 0.
* Prints "Negative" if the number is less than 0.
* Prints "Zero" if the number is exactly 0.

**ALGORITHM**

Step 1: Start

Step 2: Taking input from the user

Step 3: Comparing the input with the conditions

Step 4: Print positive if number is greater than 0, Print negative if number is less than 0,print exactly zero if number is exactly 0

Step 5: End

**PSEUDO CODE:**

**START**

INPUT number

Check for the condition

Print positive if number is greater than 0, Print negative if number is less than 0,print exactly zero if number is exactly 0

END

**CODE:**

package Day2;

import java.util.Scanner;

public class PosNeg {

public static void main(String[]args) {

Scanner sc =new Scanner(System.in);

System.out.println("enetr an integer");

int a=sc.nextInt();

if(a>0) {

System.out.println("number is positive");

}else if(a<0) {

System.out.println("number is negative");

}else {

System.out.println("number is exactly zero");

}

}

}

**OUTPUT:**

|  |  |  |
| --- | --- | --- |
| **TC1** | **TC2** | **TC3** |
| a=0  number is exactly zero | **a**=1  number is positive | a=-5  number is negative |

**PROBLEM 5:** Driving Eligibility

Ask the user to input their age.

Use an if-else structure to determine if they are eligible to drive (age >= 18).

**ALGORITHM:**

Step 1 : Start

Step 2 :Declare a variable age

Step 3 :Check if the age is greater than 18

Step 5 : If true print eligible to drive else not eligible

Step 8 :End

**PSEUDO CODE:**

**START**

INPUT age

Check if the age is greater than 18

Print eligible if true else print not eligible

END

**CODE:**

package Day2;

import java.util.Scanner;

public class DriveE {

public static void main(String[]args) {

Scanner sc=new Scanner(System.in);

System.out.println("enter the age");

int age=sc.nextInt();

if(age>=18) {

System.out.println("eligible to drive");

}else System.out.println("not eligible to drive");

}

}

**OUTPUT:**

|  |  |  |
| --- | --- | --- |
| **TC1** | **TC2** | **TC3** |
| enter the age  18  eligible to drive | enter the age  12  not eligible to drive | enter the age  25  eligible to drive |

**PROBLEM 6:**Simple Calculator

Get two double inputs and an operator (+, -, \*, /) from the user.

Use if-else if-else to perform the operation.

Handle division by zero using an if check.

**ALGORITHM:**

Step 1 : Start

Step 2 :Declare a variable res=0

Step 3 :Declare two variables for input

Step 5 : use if else for respective operation

Step 6 :Print the res

Step 7:end

**PSEUDO CODE:**

**START**

INPUT opeartion

INPUT two variables

Perform respective operation

Print res

END

**CODE:**

package Day2;

import java.util.Scanner;

public class SimpleC {

public static void main(String[]args) {

double res=0;

Scanner sc=new Scanner(System.in);

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

double a=sc.nextDouble();

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

double b=sc.nextDouble();

System.out.println("enter a operation");

String c=sc.next();

if(c.equals("+")) {

res=a+b;

}else if(c.equals("-")){

res=a-b;

}else if(c.equals("\*")){

res=a\*b;

}else if(c.equals("/")){

if(b!=0) {

res=a/b;

}

else System.out.println("error");

}

System.out.println(res);

}

}

**OUTPUT:**

|  |  |  |
| --- | --- | --- |
| **TC1** | **TC2** | **TC3** |
| enter a number  2  enter a number  3  enter a operation  +  5.0 | enter a number  5  enter a number  9  enter a operation  \*  45.0 | enter a number  34  enter a number  6  enter a operation  -  28.0 |

**PROBLEM 7:** Movie Ticket Price

Get user age (int) and student status (boolean).

Use nested if or logical operators to determine:

* If under 5 or over 65: $5
* If 5-18 and student: $8
* Otherwise: $12

Print the result.

**ALGORITHM:**

Step 1 : Start

Step 2 :Declare a variable MONEY

Step 3 :Input age

Step 5 : Check student status

Step 6 :Print the respective output

Step 8 :End

**PSEUDO CODE:**

**START**

INPUT age

INPUT student status

Declare money=0

Check the condition

Print the output

END

**CODE:**

package Day2;

import java.util.Scanner;

public class MovieT {

public static void main(String[]args) {

int money=0;

Scanner sc=new Scanner(System.in);

System.out.println("enter age");

int age=sc.nextInt();

System.out.println("student status");

boolean s=sc.nextBoolean();

if(age<5 || age>65) {

money=5;

}else if(age>=5 && age<=18) {

if(s==true) {

money=8;

}

}else money=12;

System.out.println(money);

}

}

**OUTPUT:**

|  |  |  |
| --- | --- | --- |
| **TC1** | **TC2** | **TC3** |
| enter age  18  student status  TRUE  8 | enter age  23  student status  FALSE  12 | enter age  4  student status  FALSE  5 |

**PROBLEM 8:**Day of the Week

Ask the user to input an integer from 1-7.

Use a switch statement to print the corresponding day.

Include a default case for invalid inputs.

**ALGORITHM:**

Step 1 : Start

Step 2 :Declare a variable a

Step 3 :Check if the number is between 1 and 7

Step 5 : Use switch statement and print corresponding day

Step 6 :End

**PSEUDO CODE:**

**START**

INPUT a number

Check if the number is between 1 and 7

Use switch statement and compare

Print corresponding day

END

**CODE:**

package Day2;

import java.util.Scanner;

public class DayW {

public static void main(String[]args) {

Scanner sc = new Scanner(System.in);

System.out.println("enter a number between 1-7");

int a=sc.nextInt();

if(a>=1&&a<7) {

switch(a) {

case 1:

System.out.println("Sunday");

break;

case 2:

System.err.println("Monday");

break;

case 3:

System.out.println("Tuesday");

break;

case 4:

System.out.println("Wednesday");

break;

case 5:

System.out.println("Thursday");

break;

case 6:

System.out.println("Friday");

break;

case 7:

System.out.println("Saturday");

Break; }

}

}

}

**OUTPUT:**

|  |  |  |
| --- | --- | --- |
| **TC1** | **TC2** | **TC3** |
| enter a number between 1-7  1  Sunday | enter a number between 1-7  5  Thursday | enter a number between 1-7  3  Tuesday |

**PROBLEM 9**:Simple Menu Selection

Simulate an ATM.

Get user input: 1 = Check Balance, 2 = Withdraw, 3 = Deposit, 4=Exit.

Use switch to print the action.

Handle invalid input with a default case.

**ALGORITHM:**

Step 1 : Start

Step 2 :Declare a variable a

Step 3 :Check for the operation using switch

Step 5 : Execute the operation

Step 6 :Print the message

Step 8 :End

**PSEUDO CODE:**

**START**

INPUT a

Enter the number

Check for the corresponding operation

Print the message

END

**CODE:**

package Day2;

import java.util.Scanner;

public class SimpleM {

public static void main(String[]args) {

Scanner sc=new Scanner(System.in);

System.out.println("enter operation 1:chech balance 2:withdraw 3:deposit 4:exit");

int a=sc.nextInt();

switch(a) {

case 1:

System.out.println("you can check balance");

break;

case 2:

System.out.println("you can withdraw");

break;

case 3:

System.out.println("you can deposit");

break;

case 4:

System.out.println("you can exit");

break;

}

}

}

**OUTPUT:**

|  |  |  |
| --- | --- | --- |
| **TC1** | **TC2** | **TC3** |
| enter operation 1:chech balance 2:withdraw 3:deposit 4:exit  1  you can check balance | enter operation 1:chech balance 2:withdraw 3:deposit 4:exit  3  you can deposit | enter operation 1:chech balance 2:withdraw 3:deposit 4:exit  4  you can exit |

**PROBLEM 10:**Grade Remarks (Why switch is not ideal)\*is not ideal)

Input score (0-100).

Use if-else if-else to print:

* 90-100: "Excellent"
* 80-89: "Very Good"
* 70-79: "Good"
* 60-69: "Pass"
* Below 60: "Fail"

Explain why switch would not be appropriate here.

**ALGORITHM:**

Step 1 : Start

Step 2 :Declare a variable and enter the grade

Step 3 :Check for the condition

Step 5 : Print the output respectively

Step 6 :End

**PSEUDO CODE:**

**START**

INPUT a

Enter the grade

Check for the condition

Print the respective grade

END

**CODE:**

package Day2;

import java.util.Scanner;

public class GradeR {

public static void main(String[]args) {

Scanner sc = new Scanner(System.in);

System.out.println("enetr grade");

int g=sc.nextInt();

if(g>=90 && g<=100) {

System.out.println("excellent");

}else if(g>=80 && g<=89) {

System.out.println("very good");

}else if(g>70 && g<=79) {

System.out.println("good");

}else if(g>=60 && g<=69) {

System.out.println("pass");

}else System.out.println("fail");

}

}

**OUTPUT:**

|  |  |  |
| --- | --- | --- |
| **TC1** | **TC2** | **TC3** |
| enter grade  99  excellent | enter grade  65  pass | enter grade  25  fail |