**Conditional Statements and Switch Case Practice**

**1. Find the Maximum Between Two Numbers**

void main() {

int a = 10, b = 20;

int max = (a > b) ? a : b;

print('Maximum: $max');

}

**2. Find the Maximum Between Three Numbers**

void main() {

int a = 10, b = 20, c = 15;

int max = (a > b && a > c) ? a : (b > c ? b : c);

print('Maximum: $max');

}

**3. Check Whether a Number is Negative, Positive, or Zero**

void main() {

int num = 0;

if (num > 0) {

print('Positive');

} else if (num < 0) {

print('Negative');

} else {

print('Zero');

}

}

**4. Check if a Number is Divisible by 5 and 11**

void main() {

int num = 55;

if (num % 5 == 0 && num % 11 == 0) {

print('Divisible by 5 and 11');

} else {

print('Not divisible by 5 and 11');

}

}

**5. Check Whether a Number is Even or Odd**

void main() {

int num = 7;

print((num % 2 == 0) ? 'Even' : 'Odd');

}

**6. Check Whether a Year is a Leap Year or Not**

void main() {

int year = 2024;

if ((year % 4 == 0 && year % 100 != 0) || year % 400 == 0) {

print('Leap Year');

} else {

print('Not a Leap Year');

}

}

**7. Calculate Percentage and Grade**

void main() {

int physics = 85, chemistry = 90, biology = 78, math = 88, computer = 92;

double percentage = (physics + chemistry + biology + math + computer) / 5;

String grade;

if (percentage >= 90) {

grade = 'A';

} else if (percentage >= 80) {

grade = 'B';

} else if (percentage >= 70) {

grade = 'C';

} else if (percentage >= 60) {

grade = 'D';

} else if (percentage >= 40) {

grade = 'E';

} else {

grade = 'F';

}

print('Percentage: $percentage%');

print('Grade: $grade');

}

**8. Calculate Gross Salary**

void main() {

double basicSalary = 15000;

double hra, da;

if (basicSalary <= 10000) {

hra = basicSalary \* 0.20;

da = basicSalary \* 0.80;

} else if (basicSalary <= 20000) {

hra = basicSalary \* 0.25;

da = basicSalary \* 0.90;

} else {

hra = basicSalary \* 0.30;

da = basicSalary \* 0.95;

}

double grossSalary = basicSalary + hra + da;

print('Gross Salary: $grossSalary');

}

**9. Days in a Month Using Switch Case**

void main() {

int month = 2;

int year = 2024;

int days;

switch (month) {

case 1:

case 3:

case 5:

case 7:

case 8:

case 10:

case 12:

days = 31;

break;

case 4:

case 6:

case 9:

case 11:

days = 30;

break;

case 2:

days = (year % 4 == 0 && year % 100 != 0) || year % 400 == 0 ? 29 : 28;

break;

default:

days = 0;

}

print(days > 0 ? 'Month $month has $days days' : 'Invalid month');

}

**10. Check Vowel or Consonant Using Switch Case**

void main() {

String char = 'a';

switch (char) {

case 'a':

case 'e':

case 'i':

case 'o':

case 'u':

case 'A':

case 'E':

case 'I':

case 'O':

case 'U':

print('$char is a Vowel');

break;

default:

print('$char is a Consonant');

}

}

**Loop Practice Exercises**

**1. Print the First 10 Natural Numbers**

void main() {

int i = 1;

while (i <= 10) {

print(i);

i++;

}

}

**2. Calculate Sum from 1 to N**

void main() {

int n = 5;

int sum = 0;

for (int i = 1; i <= n; i++) {

sum += i;

}

print('Sum: $sum');

}

**3. Multiplication Table**

void main() {

int num = 5;

for (int i = 1; i <= 10; i++) {

print('$num x $i = ${num \* i}');

}

}

**4. Count Digits in a Number**

void main() {

int num = 12345;

int count = 0;

while (num > 0) {

num ~/= 10;

count++;

}

print('Total Digits: $count');

}

**5. Print Number Pattern**

void main() {

for (int i = 1; i <= 5; i++) {

print('${i.toString() \* i}');

}

}

**6. Display Numbers from -10 to -1**

void main() {

for (int i = -10; i <= -1; i++) {

print(i);

}

print('Using While Loop');

int i = -10;

while (i <= -1) {

print(i);

i++;

}

}

**7. Prime Numbers Within a Range**

void main() {

int start = 10, end = 20;

for (int i = start; i <= end; i++) {

bool isPrime = true;

if (i < 2) isPrime = false;

for (int j = 2; j <= i ~/ 2; j++) {

if (i % j == 0) {

isPrime = false;

break;

}

}

if (isPrime) print(i);

}

}

**8. Fibonacci Series up to 10 Terms**

void main() {

int n1 = 0, n2 = 1, count = 10;

print(n1);

print(n2);

for (int i = 2; i < count; i++) {

int n3 = n1 + n2;

print(n3);

n1 = n2;

n2 = n3;

}

}

**9. Find Factorial of a Number**

void main() {

int num = 5, fact = 1;

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

fact \*= i;

}

print('Factorial: $fact');

}

**10. Reverse an Integer**

void main() {

int num = 12345, reverse = 0;

while (num > 0) {

reverse = reverse \* 10 + num % 10;

num ~/= 10;

}

print('Reversed Number: $reverse');

}

**11. Cube of Numbers From 1 to N**

void main() {

int n = 5;

for (int i = 1; i <= n; i++) {

print('Cube of $i: ${i \* i \* i}');

}

}

**12. Sum of the Series up to N Terms**

void main() {

int n = 5, sum = 0;

for (int i = 1; i <= n; i++) {

sum += i;

}

print('Sum of Series: $sum');

}