Assignment - 3 Solutions

# 1. Program to check whether a given number is positive or non-positive

#include <stdio.h>  
int main() {  
 int number;  
 printf("Enter a number: ");  
 scanf("%d", &number);  
 if (number > 0) {  
 printf("Positive\n");  
 } else {  
 printf("Non-positive\n");  
 }  
 return 0;  
}

# 2. Program to check whether a given number is divisible by 5 or not

#include <stdio.h>  
int main() {  
 int number;  
 printf("Enter a number: ");  
 scanf("%d", &number);  
 if (number % 5 == 0) {  
 printf("Divisible by 5\n");  
 } else {  
 printf("Not divisible by 5\n");  
 }  
 return 0;  
}

# 3. Program to check whether a given number is an even number or an odd number

#include <stdio.h>  
int main() {  
 int number;  
 printf("Enter a number: ");  
 scanf("%d", &number);  
 if (number % 2 == 0) {  
 printf("Even\n");  
 } else {  
 printf("Odd\n");  
 }  
 return 0;  
}

# 4. Program to check whether a given number is an even number or an odd number without using % operator

#include <stdio.h>  
int main() {  
 int number;  
 printf("Enter a number: ");  
 scanf("%d", &number);  
 if ((number & 1) == 0) {  
 printf("Even\n");  
 } else {  
 printf("Odd\n");  
 }  
 return 0;  
}

# 5. Program to check whether a given number is a three-digit number or not

#include <stdio.h>  
int main() {  
 int number;  
 printf("Enter a number: ");  
 scanf("%d", &number);  
 if (number >= 100 && number <= 999) {  
 printf("Three-digit number\n");  
 } else {  
 printf("Not a three-digit number\n");  
 }  
 return 0;  
}

# 6. Program to print greater between two numbers. Print one number if both are the same

#include <stdio.h>  
int main() {  
 int num1, num2;  
 printf("Enter two numbers: ");  
 scanf("%d %d", &num1, &num2);  
 if (num1 > num2) {  
 printf("Greater number is %d\n", num1);  
 } else if (num2 > num1) {  
 printf("Greater number is %d\n", num2);  
 } else {  
 printf("Both are the same\n");  
 }  
 return 0;  
}

# 7. Program to check whether roots of a given quadratic equation are real & distinct, real & equal or imaginary roots

#include <stdio.h>  
#include <math.h>  
int main() {  
 float a, b, c, discriminant;  
 printf("Enter coefficients a, b, and c: ");  
 scanf("%f %f %f", &a, &b, &c);  
 discriminant = b \* b - 4 \* a \* c;  
 if (discriminant > 0) {  
 printf("Real and Distinct roots\n");  
 } else if (discriminant == 0) {  
 printf("Real and Equal roots\n");  
 } else {  
 printf("Imaginary roots\n");  
 }  
 return 0;  
}

# 8. Program to check whether a given year is a leap year or not

#include <stdio.h>  
int main() {  
 int year;  
 printf("Enter a year: ");  
 scanf("%d", &year);  
 if ((year % 4 == 0 && year % 100 != 0) || (year % 400 == 0)) {  
 printf("Leap year\n");  
 } else {  
 printf("Not a leap year\n");  
 }  
 return 0;  
}

# 9. Program to find the greatest among three given numbers

#include <stdio.h>  
int main() {  
 int num1, num2, num3;  
 printf("Enter three numbers: ");  
 scanf("%d %d %d", &num1, &num2, &num3);  
 if (num1 >= num2 && num1 >= num3) {  
 printf("Greatest number is %d\n", num1);  
 } else if (num2 >= num1 && num2 >= num3) {  
 printf("Greatest number is %d\n", num2);  
 } else {  
 printf("Greatest number is %d\n", num3);  
 }  
 return 0;  
}

# 10. Program to calculate and print profit or loss percentage

#include <stdio.h>  
int main() {  
 float cost\_price, selling\_price, profit\_loss, percentage;  
 printf("Enter cost price and selling price: ");  
 scanf("%f %f", &cost\_price, &selling\_price);  
 profit\_loss = selling\_price - cost\_price;  
 if (profit\_loss > 0) {  
 percentage = (profit\_loss / cost\_price) \* 100;  
 printf("Profit: %.2f%%\n", percentage);  
 } else if (profit\_loss < 0) {  
 percentage = (profit\_loss / cost\_price) \* 100;  
 printf("Loss: %.2f%%\n", percentage);  
 } else {  
 printf("No Profit No Loss\n");  
 }  
 return 0;  
}

# 11. Program to take marks of 5 subjects and display pass or fail

#include <stdio.h>  
int main() {  
 int marks[5], i, total = 0;  
 printf("Enter marks of 5 subjects: ");  
 for (i = 0; i < 5; i++) {  
 scanf("%d", &marks[i]);  
 total += marks[i];  
 }  
 if (total >= 165) {  
 printf("Passed\n");  
 } else {  
 printf("Failed\n");  
 }  
 return 0;  
}

# 12. Program to check whether a given alphabet is in uppercase or lowercase

#include <stdio.h>  
#include <ctype.h>  
int main() {  
 char ch;  
 printf("Enter a character: ");  
 scanf("%c", &ch);  
 if (isupper(ch)) {  
 printf("Uppercase letter\n");  
 } else if (islower(ch)) {  
 printf("Lowercase letter\n");  
 } else {  
 printf("Not an alphabet\n");  
 }  
 return 0;  
}

# 13. Program to check whether a given number is divisible by 3 and divisible by 2

#include <stdio.h>  
int main() {  
 int number;  
 printf("Enter a number: ");  
 scanf("%d", &number);  
 if (number % 6 == 0) {  
 printf("Divisible by both 3 and 2\n");  
 } else {  
 printf("Not divisible by both 3 and 2\n");  
 }  
 return 0;  
}

# 14. Program to check whether a given number is divisible by 7 or divisible by 3

#include <stdio.h>  
int main() {  
 int number;  
 printf("Enter a number: ");  
 scanf("%d", &number);  
 if (number % 7 == 0 || number % 3 == 0) {  
 printf("Divisible by 7 or 3\n");  
 } else {  
 printf("Not divisible by 7 or 3\n");  
 }  
 return 0;  
}

# 15. Program to check whether a given number is positive, negative or zero

#include <stdio.h>  
int main() {  
 int number;  
 printf("Enter a number: ");  
 scanf("%d", &number);  
 if (number > 0) {  
 printf("Positive\n");  
 } else if (number < 0) {  
 printf("Negative\n");  
 } else {  
 printf("Zero\n");  
 }  
 return 0;  
}

# 16. Program to check whether a given character is an alphabet (uppercase), an alphabet (lower case), a digit or a special character

#include <stdio.h>  
#include <ctype.h>  
int main() {  
 char ch;  
 printf("Enter a character: ");  
 scanf("%c", &ch);  
 if (isalpha(ch)) {  
 if (isupper(ch)) {  
 printf("Uppercase Alphabet\n");  
 } else {  
 printf("Lowercase Alphabet\n");  
 }  
 } else if (isdigit(ch)) {  
 printf("Digit\n");  
 } else {  
 printf("Special character\n");  
 }  
 return 0;  
}

# 17. Program to check whether the triangle is valid

#include <stdio.h>  
int main() {  
 int side1, side2, side3;  
 printf("Enter the sides of the triangle: ");  
 scanf("%d %d %d", &side1, &side2, &side3);  
 if (side1 + side2 > side3 && side1 + side3 > side2 && side2 + side3 > side1) {  
 printf("Valid triangle\n");  
 } else {  
 printf("Invalid triangle\n");  
 }  
 return 0;  
}

# 18. Program to check the number of days in a given month

#include <stdio.h>  
int main() {  
 int month;  
 printf("Enter the month number: ");  
 scanf("%d", &month);  
 switch (month) {  
 case 1: case 3: case 5: case 7: case 8: case 10: case 12:  
 printf("31 days\n");  
 break;  
 case 4: case 6: case 9: case 11:  
 printf("30 days\n");  
 break;  
 case 2:  
 printf("28 or 29 days\n");  
 break;  
 default:  
 printf("Invalid month\n");  
 }  
 return 0;  
}