Assignment 9

Switch case

#include <stdio.h>

#include <math.h>

int main() {

int month;

printf("Enter the month number (1-12): ");

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 (leap year)\n");

break;

default:

printf("Invalid month number\n");

}printf("\n");

double num1, num2, result;

char op;

printf("Enter two numbers: ");

scanf("%lf %lf", &num1, &num2);

printf("Enter an operator (1.add 2.sub 3.mul 4.div): ");

scanf(" %d", &op);

switch (op) {

case 1:

result = num1 + num2;

printf("Result: %.2lf\n", result);

break;

case 2:

result = num1 - num2;

printf("Result: %.2lf\n", result);

break;

case 3:

result = num1 \* num2;

printf("Result: %.2lf\n", result);

break;

case 4:

if (num2 != 0) {

result = num1 / num2;

printf("Result: %.2lf\n", result);

} else {

printf("Error: Division by zero\n");

}

break;

default:

printf("Invalid operator\n");

}printf("\n");

int day;

printf("Enter the day number (1-7): ");

scanf("%d", &day);

switch (day) {

case 1:

printf("Happy Sunday!\n");

break;

case 2:

printf("Hello Monday!\n");

break;

case 3:

printf("Good Tuesday!\n");

break;

case 4:

printf("Wonderful Wednesday!\n");

break;

case 5:

printf("Terrific Thursday!\n");

break;

case 6:

printf("Fantastic Friday!\n");

break;

case 7:

printf("Super Saturday!\n");

break;

default:

printf("Invalid day number\n");

}printf("\n");

int a, b, c;

printf("Enter three side lengths of a triangle: ");

scanf("%d %d %d", &a, &b, &c);

if (a + b > c && a + c > b && b + c > a) {

if (a == b && b == c) {

printf("Equilateral triangle\n");

} else if (a == b || b == c || a == c) {

printf("Isosceles triangle\n");

} else if (a \* a + b \* b == c \* c || a \* a + c \* c == b \* b || b \* b + c \* c == a \* a) {

printf("Right-angled triangle\n");

} else {

printf("Scalene triangle\n");

}

} else {

printf("Invalid side lengths for a triangle\n");

}printf("\n");

int var;

printf("Enter a variable (1, 2, or 3): ");

scanf("%d", &var);

switch (var) {

case 1:

printf("Good\n");

break;

case 2:

printf("Better\n");

break;

case 3:

printf("Best\n");

break;

default:

printf("Invalid\n");

}printf("\n");

int year;

printf("Enter a year: ");

scanf("%d", &year);

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

printf("%d is a leap year\n", year);

} else {

printf("%d is not a leap year\n", year);

}printf("\n");

int units;

double bill = 0;

printf("Enter the electricity units consumed: ");

scanf("%d", &units);

if (units > 0) {

if (units <= 50) {

bill = units \* 0.50;

} else if (units <= 150) {

bill = 50 \* 0.50 + (units - 50) \* 0.75;

} else if (units <= 250) {

bill = 50 \* 0.50 + 100 \* 0.75 + (units - 150) \* 1.20;

} else {

bill = 50 \* 0.50 + 100 \* 0.75 + 100 \* 1.20 + (units - 250) \* 1.50;

}

bill \*= 1.20;

printf("Total electricity bill: Rs. %.2lf\n", bill);

} else {

printf("Invalid number of units\n");

}printf("\n");

int num;

printf("Enter a number: ");

scanf("%d", &num);

switch (num >= 0) {

case 1:

printf("Negative of %d is %d\n", num, -num);

break;

case 0:

printf("Positive of %d is %d\n", num, -num);

break;

}printf("\n");

int evenNum;

printf("Enter an even number: ");

scanf("%d", &evenNum);

if (evenNum % 2 == 0) {

int nearestOdd;

switch (evenNum % 4) {

case 0:

nearestOdd = evenNum - 1;

break;

case 2:

nearestOdd = evenNum + 1;

break;

default:

nearestOdd = evenNum;

}

printf("The nearest odd number is: %d\n", nearestOdd);

} else {

printf("Invalid input, not an even number\n");

}printf("\n");

double A, B, C;

printf("Enter the coefficients a, b, and c of the quadratic equation (ax^2 + bx + c = 0):\n ");

scanf("%lf %lf %lf", &A, &B, &C);

double discriminant = B \* B - 4 \* A \* C;

if (discriminant > 0) {

double root1 = (-B + sqrt(discriminant)) / (2 \* A);

double root2 = (-B - sqrt(discriminant)) / (2 \* A);

printf("Roots are real and different. Root1 = %.2lf, Root2 = %.2lf\n", root1, root2);

} else if (discriminant == 0) {

double root = -B / (2 \* A);

printf("Roots are real and the same. Root = %.2lf\n", root);

} else {

printf("Roots are complex.\n");

}

return 0;

}

