Selection Control Structures

1. #include <stdio.h>

int main() {

int num;

printf("Enter an integer: ");

scanf("%d", &num);

if (num % 2 == 0) {

printf("%d is an even number.\n", num);

} else {

printf("%d is an odd number.\n", num);

}

2. #include <stdio.h>

int main() {

int choice;

double num1, num2, result;

printf("Menu-Driven Calculator\n");

printf("1. Addition (+)\n");

printf("2. Subtraction (-)\n");

printf("3. Multiplication (\*)\n");

printf("4. Division (/)\n");

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

scanf("%d", &choice);

printf("Enter the first number: ");

scanf("%lf", &num1);

printf("Enter the second number: ");

scanf("%lf", &num2);

switch (choice) {

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 is not allowed.\n");

}

break;

default:

printf("Error: Invalid choice.\n");

break;

}

3. #include <stdio.h>

#include <math.h>

#define PI 3.14159

void calculateCircumference(float radius) {

float circumference = 2 \* PI \* radius;

printf("The circumference of the circle is: %.2f\n", circumference);

}

void calculateArea(float radius) {

float area = PI \* pow(radius, 2);

printf("The area of the circle is: %.2f\n", area);

}

void calculateVolume(float radius) {

float volume = (4 / 3.0) \* PI \* pow(radius, 3);

printf("The volume of the sphere is: %.2f\n", volume);

}

int main() {

int choice;

float radius;

printf("Menu:\n");

printf("1. Calculate circumference of a circle\n");

printf("2. Calculate area of a circle\n");

printf("3. Calculate volume of a sphere\n");

printf("Enter your choice (1-3): ");

scanf("%d", &choice);

printf("Enter the radius: ");

scanf("%f", &radius);

switch (choice) {

case 1:

calculateCircumference(radius);

break;

case 2:

calculateArea(radius);

break;

case 3:

calculateVolume(radius);

break;

default:

printf("Invalid choice! Please select a number between 1 and 3.\n");

break;

}

4. #include <stdio.h>

int main() {

char letter;

printf("Enter a letter: ");

scanf("%c", &letter);

switch (letter) {

case 'a':

case 'A':

case 'e':

case 'E':

case 'i':

case 'I':

case 'o':

case 'O':

case 'u':

case 'U':

printf("%c is a vowel.\n", letter);

break;

default:

printf("%c is not a vowel.\n", letter);

break;

}

5. #include <stdio.h>

int main() {

int month;

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

scanf("%d", &month);

switch (month) {

case 1:

printf("January has 31 days.\n");

break;

case 2:

printf("February has 28 days.\n");

break;

case 3:

printf("March has 31 days.\n");

break;

case 4:

printf("April has 30 days.\n");

break;

case 5:

printf("May has 31 days.\n");

break;

case 6:

printf("June has 30 days.\n");

break;

case 7:

printf("July has 31 days.\n");

break;

case 8:

printf("August has 31 days.\n");

break;

case 9:

printf("September has 30 days.\n");

break;

case 10:

printf("October has 31 days.\n");

break;

case 11:

printf("November has 30 days.\n");

break;

case 12:

printf("December has 31 days.\n");

break;

default:

printf("Invalid month number! Please enter a number between 1 and 12.\n");

break;

}