# C++ TASKS – CODSOFT

TASK 2 - Develop a calculator program that performs basic arithmetic

operations such as addition, subtraction, multiplication, and

division. Allow the user to input two numbers and choose an

operation to perform.

Input:

#include <iostream>

using namespace std;

int main() {

char oper;

float a, b;

cout << "Enter two operands: ";

cin >> a >> b;

cout << "Enter operator: ";

cin >> oper;

switch (oper) {

case '+':

cout << a + b;

break;

case '-':

cout << a - b;

break;

case '\*':

cout << a \* b;

break;

case '/':

cout << a / b;

break;

default:

cout << "Error! Incorrect operator";

break;

}

return 0;

}

Output:

Enter two operands: 4 5

Enter operator: \*

20.

Task -3: TIC -TOE -TAC GAME

Input:

#include <iostream>

#include <vector>

using namespace std;

void printBoard(const vector<vector<char>>& board) {

for (int i = 0; i < 3; i++) {

for (int j = 0; j < 3; j++) {

cout << board[i][j];

if (j < 2) cout << " | ";

}

cout << endl;

if (i < 2) cout << "---------\n";

}

cout << endl;

}

char checkWinner(const vector<vector<char>>& board) {

for (int i = 0; i < 3; i++) {

if (board[i][0] == board[i][1] && board[i][1] == board[i][2]) return board[i][0];

if (board[0][i] == board[1][i] && board[1][i] == board[2][i]) return board[0][i];

}

if (board[0][0] == board[1][1] && board[1][1] == board[2][2]) return board[0][0];

if (board[0][2] == board[1][1] && board[1][1] == board[2][0]) return board[0][2];

return ' ';

}

bool isBoardFull(const vector<vector<char>>& board) {

for (int i = 0; i < 3; i++) {

for (int j = 0; j < 3; j++) {

if (board[i][j] == ' ') return false;

}

}

return true;

}

int main() {

vector<vector<char>> board(3, vector<char>(3, ' '));

char currentPlayer = 'X';

int row, col;

char winner = ' ';

cout << "Tic-Tac-Toe Game" << endl;

printBoard(board);

while (winner == ' ' && !isBoardFull(board)) {

cout << "Player " << currentPlayer << ", enter your move (row and column): ";

cin >> row >> col;

if (row < 1 || row > 3 || col < 1 || col > 3 || board[row - 1][col - 1] != ' ') {

cout << "Invalid move. Try again." << endl;

continue;

}

board[row - 1][col - 1] = currentPlayer;

printBoard(board);

winner = checkWinner(board);

if (currentPlayer == 'X') {

currentPlayer = 'O';

} else {

currentPlayer = 'X';

}

}

if (winner != ' ') {

cout << "Player " << winner << " wins!" << endl;

} else {

cout << "It's a draw!" << endl;

}

return 0;

}

Output:

Tic-Tac-Toe Game

| |

---------

| |

---------

| |

Player X, enter your move (row and column): 1 1

X | |

---------

| |

---------

| |

Player O, enter your move (row and column): 2 1

X | |

---------

O | |

---------

| |

Player X, enter your move (row and column): 2 2

X | |

---------

O | X |

---------

| |

Player O, enter your move (row and column): 2 3

X | |

---------

O | X | O

---------

| |

Player X, enter your move (row and column): 3 3

X | |

---------

O | X | O

---------

| | X

Player X wins!

Task – 1: Create a program that generates a random number and asks the

user to guess it. Provide feedback on whether the guess is too

high or too low until the user guesses the correct number.

Input:

#include <iostream>

#include <cstdlib>

#include <ctime>

int main() {

std::srand(static\_cast<unsigned int>(std::time(nullptr)));

int randomNumber = std::rand() % 100 + 1;

int userGuess;

int attempts = 0;

std::cout << "Welcome to the Number Guessing Game!" << std::endl;

std::cout << "I have selected a random number between 1 and 100. Try to guess it!" << std::endl;

while (true) {

std::cout << "Enter your guess: ";

std::cin >> userGuess;

attempts++;

if (userGuess < randomNumber) {

std::cout << "Too low! Try again." << std::endl;

} else if (userGuess > randomNumber) {

std::cout << "Too high! Try again." << std::endl;

} else {

std::cout << "Congratulations! You guessed the correct number (" << randomNumber << ") in " << attempts << " attempts!" << std::endl;

break;

}

}

return 0;

}

Output:

Welcome to the Number Guessing Game!

I have selected a random number between 1 and 100. Try to guess it!

Enter your guess: 25

Too low! Try again.

Enter your guess: 89

Too high! Try again.

Enter your guess: 79

Too high! Try again.

Enter your guess: 50

Too low! Try again.

Enter your guess: 69

Too high! Try again.

Enter your guess: 65

Too high! Try again.

Enter your guess: 60

Too high! Try again.

Enter your guess: 55

Too low! Try again.

Enter your guess: 59

Too high! Try again.

Enter your guess: 58

Too high! Try again.

Enter your guess: 57

Too high! Try again.

Enter your guess: 56

Congratulations! You guessed the correct number (56) in 12 attempts!.