PF LAB 09 :

Q1:

#include <stdio.h>

#include <string.h>

int is\_palindrome(char word[]) {

int length = strlen(word);

for (int i = 0; i < length / 2; i++) {

if (word[i] != word[length - i - 1]) {

return 0;

}

}

return 1;

}

void check\_palindromes(char words[][21], int count) {

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

if (is\_palindrome(words[i])) {

printf("%s: Palindrome\n", words[i]);

} else {

printf("%s: Not Palindrome\n", words[i]);

}

}

int main() {

char words[5][21] = {"madam", "hello", "racecar", "world", "level"};

int count = 5;

check\_palindromes(words, count);

return 0;

}

Q2:

#include <stdio.h>

void swapIntegers(int \*a, int \*b) {

int temp = \*a;

\*a = \*b;

\*b = temp;

}

int main() {

int x, y;

printf("Enter two integers: ");

scanf("%d %d", &x, &y);

swapIntegers(&x, &y);

printf("After swapping: x = %d, y = %d\n", x, y);

return 0;

}

Q3:  
#include <stdio.h>

int isPrime(int num) {

if (num <= 1) return 0;

for (int i = 2; i \* i <= num; i++) {

if (num % i == 0) return 0;

}

return 1;

}

int main() {

int num;

printf("Enter an integer: ");

scanf("%d", &num);

if (isPrime(num))

printf("%d is a prime number.\n", num);

else

printf("%d is not a prime number.\n", num);

return 0;

}

Q4:

#include <stdio.h>

float calculate(float a, float b, char op) {

if (op == '+') return a + b;

else if (op == '-') return a - b;

else if (op == '\*') return a \* b;

else if (op == '/') return b != 0 ? a / b : 0;

else return 0;

}

int main() {

float num1, num2, result;

char operation;

printf("Enter first number: ");

scanf("%f", &num1);

printf("Enter an operator (+, -, \*, /): ");

scanf(" %c", &operation);

printf("Enter second number: ");

scanf("%f", &num2);

result = calculate(num1, num2, operation);

if (operation == '/' && num2 == 0)

printf("Division by zero is not allowed.\n");

else

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

return 0;

}

Q5:

#include <stdio.h>

#include <string.h>

void reverseString(char str[], char reversed[]) {

int length = strlen(str);

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

reversed[i] = str[length - i - 1];

}

reversed[length] = '\0';

}

int main() {

char str[100], reversed[100];

printf("Enter a string: ");

scanf("%99s", str);

reverseString(str, reversed);

printf("Reversed string: %s\n", reversed);

return 0;

}

Q6:

#include <stdio.h>

void findMaxMin(int arr[], int size, int \*max, int \*min) {

\*max = arr[0];

\*min = arr[0];

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

if (arr[i] > \*max) \*max = arr[i];

if (arr[i] < \*min) \*min = arr[i];

}

}

int main() {

int n, max, min;

printf("Enter the size of the array: ");

scanf("%d", &n);

int arr[n];

printf("Enter %d elements: ", n);

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

scanf("%d", &arr[i]);

}

findMaxMin(arr, n, &max, &min);

printf("Maximum: %d\n", max);

printf("Minimum: %d\n", min);

return 0;

}