**HOME WORK**

**1.Write a function to find the sum of two numbers.**

**#include <stdio.h>**

**void sum(){**

**int a,b,s;**

**printf("enter two numbers to find sum :");**

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

**s=a+b;**

**printf("sum=%d",s);**

**}**

**int main()**

**{**

**sum();**

**return 0;**

**}**

**2.Write a function to check whether a number is even or odd.**

**#include <stdio.h>**

**void check(){**

**int a;**

**printf("enter a number\t");**

**scanf("%d",&a);**

**printf("\n");**

**if(a%2==0)**

**{**

**printf("number is even");**

**}**

**else{**

**printf("number is odd");**

**}**

**}**

**int main()**

**{**

**check();**

**return 0;**

**}**

**3.Write a function to calculate the factorial of a number.**

**#include <stdio.h>**

**void factorial(){**

**int a,i,fact=1;**

**printf("enter a limit :");**

**scanf("%d",&a);**

**for(i=1;i<=a;i++)**

**{**

**fact=fact\*i;**

**}**

**printf("%d",fact);**

**}**

**int main()**

**{**

**factorial();**

**return 0;**

**}**

**4.Write a function to check whether a number is prime.**

**#include <stdio.h>**

**void prime(){**

**int num, i, count = 0;**

**printf("Enter a number: ");**

**scanf("%d", &num);**

**for(i = 1; i <= num; i++) {**

**if(num % i == 0) {**

**count++;**

**}**

**}**

**if(count == 2) {**

**printf("Prime\n");**

**}**

**else {**

**printf("Not Prime\n");**

**}**

**}**

**int main() {**

**prime();**

**return 0;**

**}**

**5.Write a function to find the maximum of three numbers.**

**#include <stdio.h>**

**void big(){**

**int a,b,c;**

**printf("enter three numbers");**

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

**if(a>b&&a>c)**

**printf("a is big");**

**else if(b>c)**

**printf("b is big");**

**else**

**printf("c is big");**

**}**

**int main()**

**{**

**big();**

**return 0;**

**}**

**6.Write a function to swap two numbers using pass-by-value.**

**#include <stdio.h>**

**void swapByValue(int a, int b) {**

**int temp = a;**

**a = b;**

**b = temp;**

**printf("Inside swapByValue: a = %d, b = %d\n", a, b);**

**}**

**int main() {**

**int x, y;**

**printf("Enter two numbers: ");**

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

**printf("Before swap: x = %d, y = %d\n", x, y);**

**swapByValue(x, y);**

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

**return 0;**

**}**

**7.Write a function to return the reverse of an integer number.**

**#include <stdio.h>**

**int reverseNumber(int num) {**

**int reversed = 0;**

**while (num != 0) {**

**int digit = num % 10;**

**reversed = reversed \* 10 + digit;**

**num = num / 10;**

**}**

**return reversed;**

**}**

**int main() {**

**int number;**

**printf("Enter an integer: ");**

**scanf("%d", &number);**

**int reversed = reverseNumber(number);**

**printf("Reversed number: %d\n", reversed);**

**return 0;**

**}**

**8.Write a function to count the number of digits in a number.**

**#include <stdio.h>**

**void dig(int num)**

**{**

**int i, count = 0;**

**if(num == 0) {**

**count = 1;**

**}**

**else {**

**for(i = num; i > 0; i = i / 10)**

**{**

**count++;**

**}**

**}**

**printf("Digits: %d\n", count);**

**}**

**int main() {**

**int num;**

**printf("Enter a POSITIVE number: ");**

**scanf("%d", &num);**

**dig(num);**

**return 0;**

**}**

**9.Write a function to compute the sum of digits of a number.**

**#include <stdio.h>**

**void sum(int num){**

**int i, sum = 0;**

**for(i = num; i > 0; i = i / 10) {**

**sum += i % 10;**

**}**

**printf("Sum of digits: %d\n", sum);**

**}**

**int main() {**

**int num;**

**printf("Enter a number: ");**

**scanf("%d", &num);**

**sum(num);**

**return 0;**

**}**

**10.Write a function to find the power of a number (base^exponent).**

**#include <stdio.h>**

**void power(int x,int y){**

**int p,pr,i;**

**p=1;**

**for(i=1;i<=y;i++)**

**{**

**p=p\*x;**

**pr=p;**

**}**

**printf("%d",pr);**

**}**

**int main()**

**{**

**int x,y;**

**printf("enter the number :");**

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

**printf("enter the power :");**

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

**power(x,y);**

**return 0;**

**}**

**11.Write a function to find the length of a string (without using strlen()).**

**#include <stdio.h>**

**void length(char str[100]){**

**int i;**

**for (i = 0; str[i] != '\0'; i++);**

**printf("Length of the string is: %d\n", i);**

**}**

**int main() {**

**char str[100];**

**printf("Enter a string: ");**

**scanf("%s", str);**

**length(str);**

**return 0;**

**}**

**12.Write a function to reverse a string.**

**#include <stdio.h>**

**void rev(int n,char str[100]){**

**int i;**

**printf("Reversed string: ");**

**for(i = n - 1; i >= 0; i--) {**

**printf("%c", str[i]);**

**}**

**printf("\n");**

**}**

**int main() {**

**char str[100];**

**int i,n;**

**printf("Enter the length of the string: ");**

**scanf("%d", &n);**

**printf("Enter the string: ");**

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

**scanf(" %c", &str[i]);**

**}**

**rev(n,str);**

**return 0;**

**}**

**13.Write a function to find the largest element in an array.**

**#include <stdio.h>**

**int findLargest(int arr[], int size) {**

**int max = arr[0];**

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

**if (arr[i] > max) {**

**max = arr[i];**

**}**

**}**

**return max;**

**}**

**int main() {**

**int n;**

**printf("Enter the number of elements: ");**

**scanf("%d", &n);**

**int arr[n];**

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

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

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

**}**

**int largest = findLargest(arr, n);**

**printf("The largest element is: %d\n", largest);**

**return 0;**

**}**

**14.Write a function to calculate the average of elements in an array.**

**#include <stdio.h>**

**float calculateAverage(int arr[], int size) {**

**int sum = 0;**

**for (int i = 0; i < size; i++) {**

**sum += arr[i];**

**}**

**return (float)sum / size;**

**}**

**int main() {**

**int n;**

**printf("Enter the number of elements: ");**

**scanf("%d", &n);**

**int arr[n];**

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

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

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

**}**

**float avg = calculateAverage(arr, n);**

**printf("The average is: %.2f\n", avg);**

**return 0;**

**}**

**15.Write a function to search an element in an array.**

**#include <stdio.h>**

**int searchElement(int arr[], int size, int key) {**

**for (int i = 0; i < size; i++) {**

**if (arr[i] == key) {**

**return i;**

**}**

**}**

**return -1;**

**}**

**int main() {**

**int n, key;**

**printf("Enter the number of elements: ");**

**scanf("%d", &n);**

**int arr[n];**

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

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

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

**}**

**printf("Enter the element to search: ");**

**scanf("%d", &key);**

**int index = searchElement(arr, n, key);**

**if (index != -1)**

**printf("Element %d found at index %d (position %d).\n", key, index, index + 1);**

**else**

**printf("Element %d not found in the array.\n", key);**

**return 0;**

**}**

**16.Write a recursive function to calculate factorial.**

**#include <stdio.h>**

**int factorial(int n) {**

**if (n == 0)**

**return 1;**

**else**

**return n \* factorial(n - 1);**

**}**

**int main() {**

**int number;**

**printf("Enter a non-negative integer: ");**

**scanf("%d", &number);**

**if (number < 0) {**

**printf("Factorial is not defined for negative numbers.\n");**

**} else**

**{**

**printf("Factorial of %d is %d\n", number, factorial(number));**

**}**

**return 0;**

**}**

**17.F'n to print a pyramid pattern using \*.**

**#include <stdio.h>**

**void printPyramid(int rows) {**

**for (int i = 1; i <= rows; i++) {**

**for (int j = 1; j <= rows - i; j++) {**

**printf(" ");**

**}**

**for (int k = 1; k <= 2 \* i - 1; k++) {**

**printf("\*");**

**}**

**printf("\n");**

**}**

**}**

**int main() {**

**int rows;**

**printf("Enter the number of rows for the pyramid: ");**

**scanf("%d", &rows);**

**printPyramid(rows);**

**return 0;**

**}**