1.C program for sum of elements in an array using pointers

#include <stdio.h>

#include <malloc.h>

void main(){

int i, n, sum = 0;

int \*a;

printf("Enter the size of array A \n");

scanf("%d", &n);

a = (int \*) malloc(n \* sizeof(int));

printf("Enter Elements of the List \n");

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

{

scanf("%d", a + i);

}

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

sum = sum + \*(a + i);

} printf("Sum of all elements in array = %d\n", sum);

return 0;

}

OUTPUT: Enter the size of array A

7

Enter Elements of the List

2 3 4 5 6 76 8

Sum of all elements in array = 104

2.C program to swap the values of two integers using pointers

#include <stdio.h>

int main() {

int a, b, temp;

int \*ptr1, \*ptr2;

printf("Enter the value of a and b: ");

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

printf("\nBefore swapping a = %d and b = %d", a, b);

// Assign the memory address of a and b to \*ptr1 and \*ptr2

ptr1 = &a;

ptr2 = &b;

// Swap the values a and b

temp = \*ptr1;

\*ptr1 = \*ptr2;

\*ptr2 = temp;

printf("\nAfter swapping a = %d and b = %d", a, b);

return 0;

}

OUTPUT: Enter the value of a and b: 37 54

Before swapping a = 37 and b = 54

After swapping a = 54 and b = 37

3.C PROGRAM TO REVERSE A STRING USING POINTERS

#include <stdio.h>

#include <conio.h>

void main()

{

char \*s;

int len,i;

clrscr();

printf("\nENTER A STRING: ");

gets(s);

len=strlen(s);

printf("\nTHE REVERSE OF THE STRING IS:");

for(i=len;i>=0;i--)

printf("%c",\*(s+i));

getch();

}

OUTPUT:

ENTER A STRING: HEMA

THE REVERSE OF THE STRING IS:AMEH

5.C PROGRAM TOTHAT DYNAMICALLY ALLOCATES MEMORY FOR A 2D ARRAY

#include <stdio.h>

#include <stdlib.h>

int main(void)

{

int r = 3, c = 4;

int\* ptr = malloc((r \* c) \* sizeof(int));

/\* Putting 1 to 12 in the 1D array in a sequence \*/

for (int i = 0; i < r \* c; i++)

ptr[i] = i + 1;

/\* Accessing the array values as if it was a 2D array \*/

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

for (int j = 0; j < c; j++)

printf("%d ", ptr[i \* c + j]);

printf("\n");

}

free(ptr);

return 0;

OUTPUT

1 2 3 4

5 6 7 8

9 10 11 12

4.C PROGRAM TO CALCULATE THE POWER OF A NUMBER USING POINTERS TO FUNCTIONS

#include <stdio.h>

int power(int base, int exp) {

int result = 1;

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

result\*= base;

}

return result;

}

int main() {

int base, exp, result;

printf("Enter the base value: ");

scanf("%d", &base);

printf("Enter the power value: ");

scanf("%d", &exp);

int (\*ptr)(int,int) = power;

result = ptr(base,exp);

printf("%d to the power %d is %d\n",base,exp,result);

return 0;

}

OUTPUT:

Enter the base value: 3

Enter the power value: 5

3 to the power 5 is 243