P4

#include<stdio.h>

#include<stdlib.h>

int main(void)

{

int n[10];

int i;

for (i = 0; i < 10; i++)

n[i] = 0;

printf("%s%13s\n", "Element", "Value");

for (i = 0; i < 10; i++)

printf("%7d%13d\n", i, n[i]);

system("pause");

return 0;

}

P5

#include<stdio.h>

#include<stdlib.h>

int main(void)

{

int n[10] = {32,27,64,18,95,14,90,70,60,37};

int i;

printf("%s%13s\n", "Element", "Value");

for (i = 0; i < 10; i++)

printf("%7d%13d\n", i, n[i]);

system("pause");

return 0;

}

P6

#include<stdio.h>

#include<stdlib.h>

#define SIZE 10

int main(void)

{

int s[SIZE];

int j;

for (j = 0; j < SIZE; j++)

s[j] =2+2\*j ;

printf("%s%13s\n", "Element", "Value");

for (j = 0; j < SIZE; j++)

printf("%7d%13d\n", j, s[j]);

system("pause");

return 0;

}

P7

#include<stdio.h>

#include<stdlib.h>

#define SIZE 12

int main(void)

{

int a[SIZE] = {1,3,5,4,7,2,99,16,45,67,89,45};

int i;

int total = 0;

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

total+=a[i];

printf("Total of array element values is %d\n", total);

system("pause");

return 0;

}

P8

#include<stdio.h>

#include<stdlib.h>

#define SIZE 10

int main(void)

{

int n[SIZE] = {19,3,15,7,11,9,13,5,17,1};

int j,i;

printf("%s%13s%17s\n", "Element", "Value", "Histogram");

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

{

printf("%7d%13d", i, n[i]);

for (j = 1; j <= n[i]; j++)

printf("\*");

printf("\n");

}

system("pause");

return 0;

}

P13

#include<stdio.h>

#include<stdlib.h>

void pribtArray(const int a[][3]);

int main(void)

{

int array1[2][3] = { {1,2,3},{4,5,6} };

int array2[2][3] = { 1,2,3,4,5 };

int array3[2][3] = { { 1,2 },{ 4 } };

printf("Values in array1 by row are:\n");

pribtArray(array1);

printf("Values in array2 by row are:\n");

pribtArray(array2);

printf("Values in array3 by row are:\n");

pribtArray(array3);

system("pause");

return 0;

}

void pribtArray(const int a[][3])

{

int i, j;

for ( i = 0; i <=1; i++)

{

for (j = 0; j <= 2; j++)

printf("%d", a[i][j]);

printf("\n");

}

}

P14

#include<stdio.h>

#include<stdlib.h>

#define STUDENTS 3

#define EXAMS 4

int mini(const int grades[][EXAMS], int pupils, int test);

int maxi(const int grades[][EXAMS], int pupils, int test);

double aver(const int setOfGrades[], int tests);

void printArray(const int grades[][EXAMS], int pupils, int tests);

int main(void)

{

int student;

const int setOfGrades[STUDENTS][EXAMS]=

{

{77,68,86,73},

{96,87,89,78},

{70,90,86,81}

};

printf("The array is:\n");

printArray(setOfGrades, STUDENTS, EXAMS);

printf("\n\nLowest grade: %d\nHighest grade: %d\n",

mini(setOfGrades,STUDENTS,EXAMS),

maxi(setOfGrades, STUDENTS, EXAMS));

for ( student = 0; student < STUDENTS; student++)

printf("The average grade for student %d is %.2f\n",

student, aver(setOfGrades[student], EXAMS));

system("pause");

return 0;

}

int mini(const int grades[][EXAMS], int pupils, int test)

{

int i, j;

int low = 100;

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

{

for (j = 0; j < test; j++)

{

if (grades[i][j] < low)

low = grades[i][j];

}

}

return low;

}

int maxi(const int grades[][EXAMS], int pupils, int test)

{

int i, j;

int high = 0;

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

{

for ( j = 0; j < test; j++)

{

if (grades[i][j] > high)

high = grades[i][j];

}

}

return high;

}

double aver(const int setOfGrades[], int tests)

{

int i;

int total = 0;

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

total += setOfGrades[i];

return(double)total / tests;

}

void printArray(const int grades[][EXAMS], int pupils, int tests)

{

int i, j;

printf(" [0] [1] [2] [3]");

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

{

printf("\n studentfGrades[%d]", i);

for (j = 0; j < tests; j++)

printf("%-5d", grades[i][j]);

}

}

P19

#include<stdio.h>

#include<stdlib.h>

int main(void)

{

char string1[20];

char string2[]="string liferal";

int i;

printf("Entern a string: ");

scanf("%s", string1);

printf("string is: %s\nstring2 is: %s\n"

"string1 with spaces between characters is: \n",

string1, string2);

for (i = 0; string1[i] != '\0'; i++)

printf("%c ", string1[i]);

printf("\n");

system("pause");

return 0;

}

P21

#include<stdio.h>

#include<stdlib.h>

void stat(void);

void autom(void);

int main(void)

{

printf("First call to each function:\n");

stat();

autom();

printf("\n\nSecond call to each function:\n");

stat();

autom();

printf("\n");

system("pause");

return 0;

}

void stat(void)

{

static int array1[3];

int i;

printf("\nValues on entering staticArrayInt:\n");

for (i = 0; i <= 2; i++)

printf("array1[%d] = %d ", i, array1[i]);

printf("\nValues on exiting staticArrayInt:\n");

for (i = 0; i <= 2; i++)

printf("array1[%d] = %d ", i, array1[i]+=5);

}

void autom(void)

{

int array2[3] = { 1,2,3 };

int i;

printf("\n\nValues on entering staticArrayInt:\n");

for (i = 0; i <= 2; i++)

printf("array1[%d] = %d ", i, array2[i]);

printf("\nValues on exiting staticArrayInt:\n");

for (i = 0; i <= 2; i++)

printf("array1[%d] = %d ", i, array2[i] += 5);

}

P25

#include<stdio.h>

#include<stdlib.h>

int addbyone(int &xref);

void main()

{

int x = 100;

int y = addbyone(x);

printf("x=%d\n", x);

system("pause");

}

int addbyone(int &xref)

{

xref++;

printf("xref=%d\n", xref);

return xref;

}

P26

#include<stdio.h>

#include<stdlib.h>

int main(void)

{

char array [5];

printf(" array = %p\n&array[0] = %p\n &array = %p\n", array, &array[0], &array);

system("pause");

return 0;

}

P28

#include<stdio.h>

#include<stdlib.h>

#define SIZE 5

void modA(int b[], int size);

void modE(int e);

int main(void)

{

int a[SIZE] = { 0,1,2,3,4 };

int i;

printf("Effects of passing entire array by reference:\n\nThe"

"values of the original array are:\n");

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

printf("%3d", a[i]);

printf("\n");

modA(a, SIZE);

printf("The values of the modified array are:\n");

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

printf("%3d", a[i]);

printf("\n\n\nEffects of passing array element"

"by value of a[3] is %d\n",a[3]);

modE(a[3]);

printf("The value of a[3] is %d\n", a[3]);

system("pause");

return 0;

}

void modA(int b[], int size)

{

int j;

for (j = 0; j < size; j++)

b[j] \*= 2;

}

void modE(int e)

{

printf("Value in modifyElement is %d\n", e \*= 2);

}

P30

#include<stdio.h>

#include<stdlib.h>

void inverse(int \*);

int main(void)

{

int a[3] = { 3,5,7 }, i;

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

printf("%d ", a[i]);

printf("\n");

inverse(a);

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

printf("%d ", a[i]);

printf("\n");

system("pause");

return 0;

}

void inverse(int \*b)

{

int tmp[3],i;

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

tmp[2 - i] = b[i];

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

b[i] = tmp[i] ;

}

P37

#include<stdio.h>

#include<stdlib.h>

#define SIZE 100

int linearS(const int array[], int key, int size);

int main(void)

{

int a[SIZE], x, searchK, element;

for (x = 0; x < SIZE; x++)

a[x] = 2 \* x;

printf("Enter integer search key:\n");

scanf("%d", &searchK);

element = linearS(a, searchK, SIZE);

if (element != -1)

printf("Found value in element %d\n", element);

else

printf("Value not found\n");

system("pause");

return 0;

}

int linearS(const int array[], int key, int size)

{

int n;

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

{

if (array[n] == key)

return n;

}

return -1;

}