Devin Hardy

CS 372

7. a. ‘a’ , ‘e’ b. ‘h’, ‘c’

‘b’, ‘d’ return 0

‘c’, ’c’

Return 0

11. Does the math of n factorial

12. Adds Sequential Numbers

13. Finds out how many times n is divisible to 2

14. Adds the digits of n together

15. Returns the digit in n furthest to the left

21, 23, 27, 28, 29, 33

//Devin Hardy

//CS372

//21, 23, 27, 28, 29, 33

#include <iostream>

#include <fstream>

#include <iomanip>

#include <cstdlib>

using namespace std;

unsigned digits(unsigned val)

{

if(val == 0)

return 0;

//else

return 1 + digits(val /10);

}

void PrintReverse(int val)

{

if(val == 0)

return;

PrintReverse(val / 10);

cout << val % 10;

}

void ReverseArray(int ary[], int first, int last)

{

int temp;

if(first > last)

return;

temp = ary[first];

ary[first] = ary[last];

ary[last] = ary[first];

ReverseArray(ary, first + 1, last - 1);

}

int SumArray(int ary[], int n)

{

if(n == 0)

return 0;

return ary[n] + SumArray(ary, n - 1);

}

// If 44 did not find

int Location(int ary[], int first, int last, int elm)

{

if(first > last)

return 44;

if(ary[first] == elm)

return first;

if(ary[last] == elm)

return last;

ReverseArray(ary, first + 1, last - 1);

}

int main()

{

int val = 1467;

int math;

int spot;

int ary[10];

int bry[10];

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

ary[i] = i+1;

cout << 21 << endl;

cout << val << endl;

math = digits(val);

cout << "Number of digits = " << math << endl;

cout << 23 << endl;

PrintReverse(val);

cout << endl;

cout << 27 << endl << endl;

cout << 28 << endl;

math = SumArray(ary, 9);

cout << "Sum of Array = " << math << endl;

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

bry[i] = i\*2;

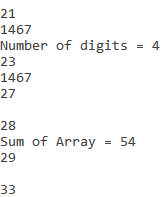
cout << 29 << endl;

cout << endl;

cout << 33 << endl;

return 0;

}



Hailstones

//Devin Hardy

//CS372

//hailstone

#include <iostream>

#include <fstream>

#include <iomanip>

#include <cstdlib>

using namespace std;

int hailstone(int val)

{

if(val == 1)

return 1;

if(val % 2 == 0)

return 1 + hailstone(val / 2);

if(val % 2 == 1)

return 1 + hailstone(val \* 3 + 1);

}

int main()

{

int val1 = 1979;

int val2 = 115270;

cout << "Test 1" << endl;

cout << hailstone(val1) << endl;

cout << "Test 2" << endl;

cout << hailstone(val2) << endl;

return 0;

}



double sumover(unsigned n)

{

if(n == 0)

return 0;

return (1.0 / n) + (sumover(n-1));

}

int main()

{

int val = 4;

double sum;

sum = sumover(val);

cout << sum;

return 0;

}



void fillAryBack(int \*ary, int val)

{

if(val == 0)

return;

\*ary = val;

fillAryBack(ary + 1, val - 1);

}

void fillAryForw(int \*ary, int val)

{

if(val == 33)

return;

fillAryForw(ary + 1, val + 1);

\*ary = val;

}

int main()

{

int ary[32];

int bry[32];

int val1 = 32;

int val2 = 1;

fillAryBack(ary, val1);

for(int i = 0; i < 32; i++)

{

cout << ary[i] << " ";

if((i + 1) % 5 == 0)

cout << endl;

}

cout << endl << endl;

fillAryForw(bry, val2);

for(int i = 0; i < 32; i++)

{

cout << bry[i] << " ";

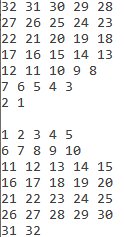
if((i + 1) % 5 == 0)

cout << endl;

}

return 0;

}



//Devin Hardy

//CS372

//ASCII

#include <iostream>

#include <fstream>

#include <iomanip>

#include <cstdlib>

using namespace std;

// 1 7 9 8 6 3 7 5

int ASCII(char word[], int val)

{

if(val == 0)

return 0;

return ASCII(word, --val) \* 10 + (word[val] - '0');

}

int main()

{

char ints1[] = {'1', '7', '9', '8', '6', '3', '7', '5'};

char ints2[] = {'7', '4', '3', '4', '5', '3'};

int chars1;

int chars2;

chars1 = ASCII(ints1, 8);

chars2 = ASCII(ints2, 6);

cout << "Number 1" << endl << chars1 << endl;

cout << "Number 2" << endl << chars2 << endl;

return 0;

}



//Devin Hardy

//CS372

//Miles Ran

#include <iostream>

#include <fstream>

#include <iomanip>

#include <cstdlib>

using namespace std;

void Running(int times)

{

if((5\*times)>= 60)

return;

cout << setw(3) << (5 \* times) << setw(16) << fixed << setprecision(3) << ((0.82 \* times) - (0.017 \* (times - 1))) << endl;

Running(times + 1);

}

int main()

{

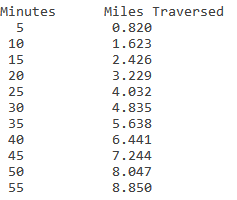
int time = 1;

cout << "Minutes " << setw(20) << "Miles Traversed" << endl;

Running(time);

return 0;

}



Time it took to move 100 disks on computer

24 Hours

Time it would take me

401,000,000 Years