KNAPSACK

#include <iostream.h>

#include <conio.h>

int max(int a, int b)

{

return (a > b) ? a : b;

}

int knapSack(int W, int wt[], int val[], int n)

{

int i, w;

int K[30][30];

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

{

for (w = 0; w <= W; w++)

{

if (i == 0 || w == 0)

K[i][w] = 0;

else if (wt[i - 1] <= w)

K[i][w]= max(val[i - 1] + K[i - 1][w - wt[i - 1]], K[i - 1][w]);

else

K[i][w] = K[i - 1][w];

}

}

return K[n][W];

}

void main()

{

clrscr();

gotoxy(33,2);

cout<<"KNAPSACK\n";

cout << "Enter the number of items in a Knapsack: ";

int n, W;

cin >> n;

int val[30], wt[30];

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

{

cout << "Enter value and weight for item: " << i << ":";

cin >> val[i];

cin >> wt[i];

}

cout << "Enter the capacity of knapsack: ";

cin >> W;

cout << knapSack(W, wt, val, n);

getch();

}