**Program for Knapsack Problem**

**#include <stdio.h>**

**#include <conio.h>**

**int main()**

**{**

**int n, m, i, u;**

**int p[20], w[20];**

**float x[20];**

**float optimal = 0.0;**

**printf("Enter number of objects:");**

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

**printf("Enter capacity of KnapSack:");**

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

**printf("Enter profits in decreasing order of Pi/Wi: \n");**

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

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

**printf("Enter Weights in decreasing order of Pi/Wi: \n");**

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

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

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

**x[i] = 0.0;**

**u = m;**

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

**{**

**if (w[i] > u)**

**break;**

**else**

**x[i] = 1.0;**

**u = u - w[i];**

**}**

**if (i <= n)**

**x[i] = (float)u / w[i];**

**printf("The x values are\n");**

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

**printf("%f\t", x[i]);**

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

**optimal = optimal + p[i] \* x[i];**

**printf("\nOptimal Solution is %f", optimal);**

**getch();**

**}**

**Output:**

