

5/7/21

ADA Lab Test - 2

IBM19CS167

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#include <stdio.h>

#include <conio.h>

int max(int a, int b)

{

if (a > b)

return a;

else return b;

}

Void knapsack (int w[], int v[], int s, int n)

{

int k[n+1][s+1]

int i, j, res = 0;

int count = 0, weight = 0;

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

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

{

if (i == 0 || j == 0)

k[i][j] = 0;

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

k[i][j] = max(v[i-1] + k[i-1][j-w[i-1]], k[i-1][j]);

else

k[i][j] = k[i-1][j];

}

res = k[n][s];

(1)

Swaroop

```
printf("In Maximum value that can be obtained is %.1d", res);
```

```
i = S;
```

```
printf("In And the objects with their respective weights selected are: ");
```

```
for (i = n; i > 0 && res > 0; i--)
```

```
{
```

```
if (res == w[i-1])
```

```
continue;
```

```
else
```

```
{
```

```
printf("%.1d", w[i-1]);
```

```
res = res - w[i-1];
```

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

```
count++;
```

```
weight = weight + w[i-1];
```

```
}
```

```
}
```

```
printf("In the count of the items selected is %.1d", count);
```

```
printf("In the total weight of the items selected is %.1d", weight);
```

```
}
```

```

int main()
{
    int w[10], v[10], s, n, p;

    printf("Enter the number of objects : ");
    scanf("%d", &n);

    printf("Enter the weights of the objects : ");
    for (i=0; i<n; i++)
        scanf("%d", &w[i]);

    printf("Enter the values of the objects : ");
    for (i=0; i<n; i++)
        scanf("%d", &v[i]);

    printf("Enter the size of the knapsack : ");
    scanf("%d", &s);
    knapsack(w, v, s, n);
}

```

(3)

swaroop