## Program :

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#include <stdio.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 dp[n + 1][W + 1];
   for (i = 0; i <= n; i++) {
      for (w = 0; w <= W; w++) {
         if (i == 0 || w == 0)
            dp[i][w] = 0;
         else if (wt[i - 1] <= w)
            dp[i][w] = max(val[i - 1] + dp[i - 1][w - wt[i - 1]], dp[i - 1][w]);
         else
            dp[i][w] = dp[i - 1][w];
      }
   }
      return dp[n][W];
}
int main() {
   int W; // Maximum weight of knapsack
   int n; // Number of items
   printf("Enter the maximum weight of the knapsack: ");
   scanf("%d", &W);
   printf("Enter the number of items: ");
   scanf("%d", &n);
   int wt[n], val[n]; // Arrays for weights and values
   printf("Enter the weights of the items:\n");
   for (int i = 0; i < n; i++) {
      printf("Weight of item %d: ", i + 1);
      scanf("%d", &wt[i]);
   }
```

```
    printf("Enter the values of the items:\n");
    for (int i = 0; i < n; i++) {
        printf("Value of item %d: ", i + 1);
        scanf("%d", &val[i]);
    }
    printf("Maximum value that can be obtained: %d\n", knapsack(W, wt, val, n));
    return 0;
}
```

## Output :