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1 // Example 1: How to allocate dynamic memory
2
3 #include<stdlib.h>
4 int main(){
5     int *p, *q;
6
7     p = malloc(sizeof(int));
8     q = malloc(sizeof(int));
9     scanf("%d%d",p,q);
10    printf("%d %d %d %d",*p+*q,*p-*q,*p**q,*p/(*q));
11    free(p);
12    free(q);
13
14
15 }
16
17 // Example 2: How to allocate array dynamically
18
19 #include<stdlib.h>
20 int main(){
21     int *p,N,i,sum=0;
22     scanf("%d",&N);
23     p = malloc(N*sizeof(int));
24     for(i = 0; i < N; i++)
25         scanf("%d",p+i);
26     for(i = 0; i < N; i++)
27         sum = sum + *(p+i);
28     printf("%d",sum);
29     free(p);
30 }
31
32 // Example 3: Dynamic memory allocation inside a function
33
34 char *concat(char *s, char * t){
35     char *p,*q;
36     int n = 0;
37     q = s;
38     while(*q) q++,n++;
39     q = t;
40     while(*q) q++,n++;
41     p = q = malloc(n+1);
42     while(*s) *p++ = *s++;
43     while(*t) *p++ = *t++;
44     *p = '\0';
45     return q;
46 }
47
48 void main(){
49     char a[80],b[80];
50     char *c;
51     gets(a);
52     gets(b);
53     c = concat(a,b);
54     puts(c);
55     free(c);
56
57
58 }
59
60 // Example 4 array of pointers example
61
62 #include <stdlib.h>
63 void main(){
64     int N;
65
66     scanf("%d", &N);
67
68     int *p[N],i,sum = 0;
69

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70  for(i = 0 ; i< N; i++)
71      p[i] = malloc(sizeof(int)); // OR *(p+i) = malloc(sizeof(int));
72
73
74  for(i = 0 ; i< N; i++)
75  scanf("%d",p[i]);          // OR      scanf("%d", *(p+i));
76
77  for(i = 0 ; i< N; i++)
78      sum = sum + *p[i]; //OR  sum = sum + *(*p+i);
79
80  printf("%d",sum);
81
82  for(i = 0 ; i< N; i++)
83      free(p[i]);              // OR      free(*(p+i));
84
85  }
86
87
88  // Example 5: Pointer to pointers
89
90  #include <stdlib.h>
91  void main(){
92  int N;
93
94  scanf("%d", &N);
95
96  int **p,i,sum = 0;
97
98      p = malloc(N*sizeof(int *));
99
100  for(i = 0 ; i< N; i++)
101      p[i] = malloc(sizeof(int)); // OR *(p+i) = malloc(sizeof(int));
102
103
104  for(i = 0 ; i< N; i++)
105  scanf("%d",p[i]); // OR scanf("%d",*(p+i));
106
107  for(i = 0 ; i< N; i++)
108  sum = sum + *p[i]; //OR  sum = sum + *(*p+i);
109
110  printf("%d",sum);
111
112  for(i = 0 ; i< N; i++)
113  free(p[i]);          // OR free *(p+i);
114  free(p);
115
116  }
117
118

```