

1. 1248163264128
2. c
- 3.

```
C as3.c > ...
1  #include<stdio.h>
2
3  int main(void){
4      int i;
5
6      for (i=1; i<=128; i*=2){
7          printf("%d", i);
8      }
9
10     return 0;
11 }
12 |
```

- 4.

```
C asc4.c > ...
1  #include<stdio.h>
2
3  int main(void){
4      int n, num = 1;
5      printf("TABLE OF POWERS OF TWO\n\n");
6      printf(" n    2 to the n\n");
7      printf("---  -----\n");
8
9      for (n=0; n<=10; n++){
10         // printf("%d", num);
11         num*=2;
12         printf("\n%-2d    %-2d", n, num);
13     }
14
15     return 0;
16 }
17
```

5.

```
C asc5.c > ...
1  #include<stdio.h>
2
3  int main(){
4      int i, days, first;
5
6      printf("Enter number of days in month: ");
7      scanf("%d", &days);
8
9      switch(days){
10         case 31: case 30: case 28: case 29:
11             printf("Enter the starting day of the week (1=Sun, 7=Sat): ");
12             scanf("%d", &first);
13             switch(first){
14                 case 1: case 2: case 3: case 4: case 5: case 6: case 7:
15                     for (i=1; i<first; i++){
16                         printf("  ");
17                     }
18                     for(i=1; i<=days; i++){
19                         printf("%3d", i);
20                         if((i+first-1) % 7==0){
21                             printf("\n");
22                         }
23                     }
24                     break;
25                 default: printf("Invalid date"); break;
26             }
27
28             break;
29
30         default: printf("Invalid date"); break;
31     }
32
33     return 0;
34 }
```

6a.

```
C as6a.c > ...
1  #include<stdio.h>
2  #include<stdbool.h>
3
4  #define NUM_PATHWAYS ((int)(sizeof(pathway)/sizeof(pathway[0])))
5
6  int main(){
7      bool pathway[8]={[0]=true, [2]=true};
8      for (int i=0; i<NUM_PATHWAYS; i++){
9          if (pathway[i]){
10             printf("pathway[%d] is open \n", i);
11         }
12         else{
13             printf("pathway[%d] is close\n", i);
14         }
15     }
16
17     return 0;
18 }
19
```

6b.

```
C asc6b.c > ...
1  #include<stdio.h>
2  #include<stdbool.h>
3
4  #define NUM_PATHWAYS ((int)(sizeof(pathway)/sizeof(pathway[0])))
5
6  int main(){
7      int value;
8      bool pathway[8]={false};
9      for (value=0; value<=8; value++){
10         if (value==0 || value==2){
11             pathway[value]=true;
12         }
13     }
14
15     for (int i=0; i<NUM_PATHWAYS; i++){
16         if (pathway[i]){
17             printf("pathway[%d] is open \n", i);
18         }
19         else{
20             printf("pathway[%d] is close\n", i);
21         }
22     }
23
24     return 0;
25 }
26 |
```

7.1

```
bool road_networks[SIZE][SIZE]={
    {1,1,0,0,0,1,0,0},
    {1,1,1,0,0,0,0,0},
    {0,1,1,0,1,1,0,0},
    {0,0,0,1,1,0,0,0},
    {0,0,0,1,1,0,0,0},
    {1,0,1,0,0,1,0,0},
    {1,0,0,1,0,0,1,0},
    {0,0,0,0,0,1,0,1}
};
```

7.2

```

17 //column
18 char column[8]={'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H'};
19
20 for (int i=0; i<SIZE; i++){
21     if (i==2||i==3){
22         printf("    [%c]", column[i]);
23     }
24     else{
25         printf("%6c", column[i]);
26     }
27 }
28     printf("\n");
29
30 //row
31 char rowtitle[8]={'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H'};
32
33 //matrix
34 for (int row=0; row<SIZE; row++){
35     if (row==2||row==3){
36         printf("[%c] ", row[rowtitle]);
37     }
38     else{
39         printf("%c    ", row[rowtitle]);
40     }
41     for (int column=0; column<SIZE; column++){
42         printf("%d    ", road_networks[row][column]);
43     }
44     printf("\n");
45 }

```

7.3

```

47 int point;
48 printf("Which point are you located? 0 - A, 1 - B, 2 - C, 3 - D, 4 - E, 5 - F, 6 - G, 7 - H: ");
49 scanf("%d", &point);
50
51 switch(point){
52     case 0: printf("At point: A\npoint: C arrived to charging station"); break;
53     case 1: printf("At point: B\npoint: C arrived to charging station"); break;
54     case 5: printf("At point: F\npoint: C arrived to charging station"); break;
55
56     case 4: printf("At point: E\npoint: D arrived to charging station"); break;
57     case 6: printf("At point: G\npoint: D arrived to charging station"); break;
58     case 7: printf("At point: H\npoint: D arrived to charging station"); break;
59
60     case 2: printf("C is a charging station"); break;
61     case 3: printf("D is a charging station"); break;
62
63     default: printf("Invalid input"); break;
64 }
65
66 return 0;
67 }
68 |

```

7.4

```
C asc72.c > ...
1  #include<stdio.h>
2  #include<stdbool.h>
3  #define SIZE 8
4
```

Full Code:

```
C asc72.c > main()
1  #include<stdio.h>
2  #include<stdbool.h>
3  #define SIZE 8
4
5  int main(){
6      bool road_networks[SIZE][SIZE]={
7          {1,1,0,0,0,1,0,0},
8          {1,1,1,0,0,0,0,0},
9          {0,1,1,0,1,1,0,0},
10         {0,0,0,1,1,0,0,0},
11         {0,0,0,1,1,0,0,0},
12         {1,0,1,0,0,1,0,0},
13         {1,0,0,1,0,0,1,0},
14         {0,0,0,0,0,1,0,1}
15     };
16
17     //column
18     char column[8]={'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H'};
19
20     for (int i=0; i<SIZE; i++){
21         if (i==2||i==3){
22             printf("    [%c]", column[i]);
23         }
24         else{
25             printf("%6c", column[i]);
26         }
27     }
28     printf("\n");
29
30     //row
31     char rowtitle[8]={'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H'};
32
33     //matrix
34     for (int row=0; row<SIZE; row++){
35         if (row==2||row==3){
36             printf("[%c] ", row[rowtitle]);
37         }
38         else{
39             printf("%c   ", row[rowtitle]);
40         }
41     }
42 }
```

```
41     for (int column=0; column<SIZE; column++){
42         printf ("%d\t", road_networks[row][column]);
43     }
44     printf("\n");
45 }
46
47 int point;
48 printf("Which point are you located? 0 - A, 1 - B, 2 - C, 3 - D, 4 - E, 5 - F, 6 - G, 7 - H: ");
49 scanf("%d", &point);
50
51 switch(point){
52     case 0: printf("At point: A\npoint: C arrived to charging station"); break;
53     case 1: printf("At point: B\npoint: C arrived to charging station"); break;
54     case 5: printf("At point: F\npoint: C arrived to charging station"); break;
55
56     case 4: printf("At point: E\npoint: D arrived to charging station"); break;
57     case 6: printf("At point: G\npoint: D arrived to charging station"); break;
58     case 7: printf("At point: H\npoint: D arrived to charging station"); break;
59
60     case 2: printf("C is a charging station"); break;
61     case 3: printf("D is a charging station"); break;
62
63     default: printf("Invalid input"); break;
64 }
65
66 return 0;
67 }
68
69
```