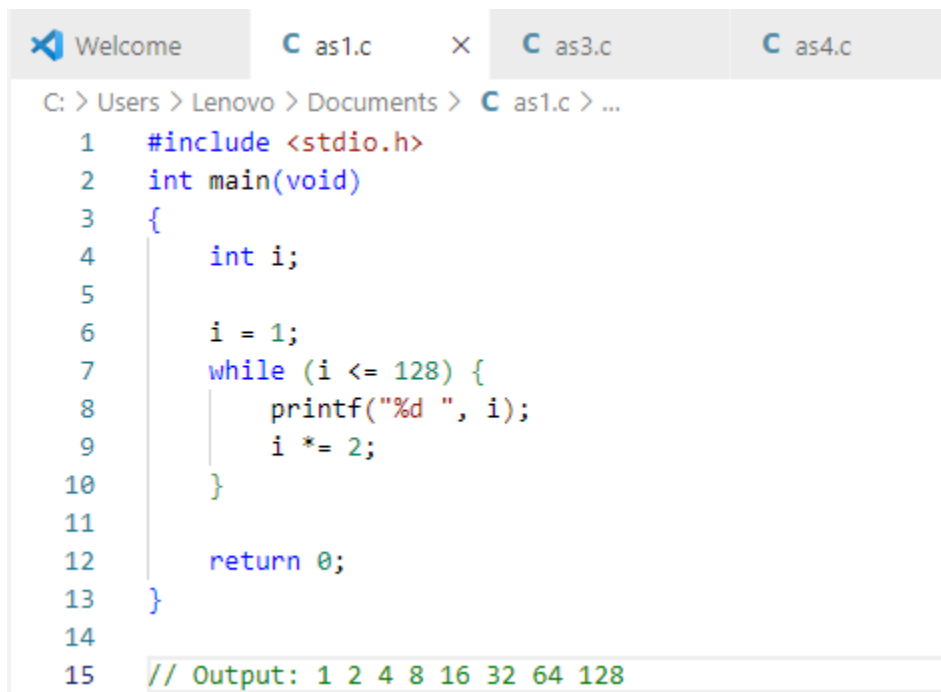


1. Output: 1 2 4 8 16 32 64 128

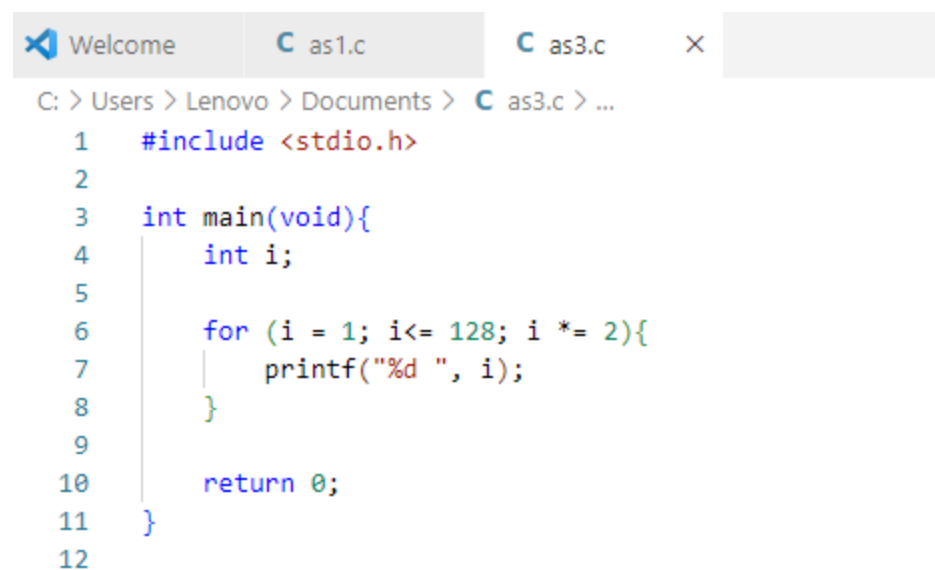


The screenshot shows a code editor with four tabs: 'Welcome', 'as1.c', 'as3.c', and 'as4.c'. The active tab is 'as1.c'. The code in the editor is as follows:

```
C: > Users > Lenovo > Documents > C as1.c > ...
1  #include <stdio.h>
2  int main(void)
3  {
4      int i;
5
6      i = 1;
7      while (i <= 128) {
8          printf("%d ", i);
9          i *= 2;
10     }
11
12     return 0;
13 }
14
15 // Output: 1 2 4 8 16 32 64 128
```

2. b) for (; i < 10;) {...}

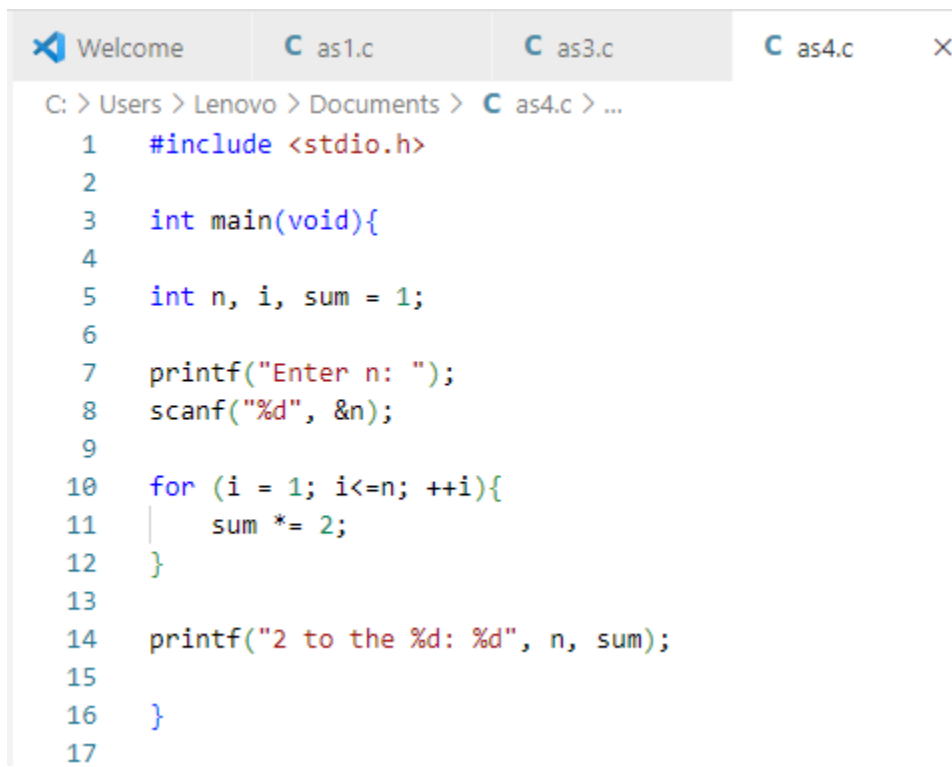
3.



The screenshot shows a code editor with three tabs: 'Welcome', 'as1.c', and 'as3.c'. The active tab is 'as3.c'. The code in the editor is as follows:

```
C: > Users > Lenovo > Documents > 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.



The screenshot shows a code editor with four tabs: 'Welcome', 'as1.c', 'as3.c', and 'as4.c'. The 'as4.c' tab is active. The editor displays the following C code:

```
C: > Users > Lenovo > Documents > C as4.c > ...
1  #include <stdio.h>
2
3  int main(void){
4
5      int n, i, sum = 1;
6
7      printf("Enter n: ");
8      scanf("%d", &n);
9
10     for (i = 1; i<=n; ++i){
11         sum *= 2;
12     }
13
14     printf("2 to the %d: %d", n, sum);
15
16 }
17
```

5.

```
Welcome | C as1.c | C as3.c | C as4.c | C as5.c | X
C: > Users > Lenovo > Documents > C as5.c > ...
1  #include <stdio.h>
2
3  int main(void){
4
5      int i, days, first_day;
6
7
8      printf("Enter number of days in month: ");
9      scanf("%d", &days);
10
11     printf("Enter the starting day of the week (1=Sun, 7=Sat): ");
12     scanf("%d", &first_day);
13
14     printf("\n");
15
16     if (days >= 28 && days <= 31){ //Error Catching: To ensure valid input
17         if (first_day > 1 || first_day < 7){ //Error Catching: To ensure valid input
18             for(i = 1; i < first_day; i++){
19                 printf(" ");
20             }
21
22             for(i = 1; i <= days; i++){
23                 printf("%3d", i);
24                 if((first_day + i - 1) % 7 == 0)
25                     printf("\n");
26             }
27
28         }
29         else{
30             printf("Invalid Input");
31         }
32     }
33
34     else{
35         printf("Invalid Input");
36     }
37
38     return 0;
39 }
```

6.

- a) `bool pathway[8] = {[0] = true, [2] = true};`
- b) `bool pathway[8] = {true, false, true, false};`

7.



Welcome

C as1.c

C as3.c

C as4.c

C as5.c

C: &gt; Users &gt; Lenovo &gt; Documents &gt; C item7\_1.c &gt; ...

```
1  #include <stdio.h>
2
3  int main(void){
4      int road_network [9][9] = {
5          [0][0]=1, [0][1]=1, [0][5]=1,
6          [1][0]=1, [1][1]=1, [1][2]=1,
7          [2][1]=1, [2][2]=1, [2][4]=1, [2][5]=1,
8          [3][3]=1, [3][4]=1, [3][8]=1,
9          [4][3]=1, [4][4]=1,
10         [5][0]=1, [5][2]=1, [5][5]=1,
11         [6][0]=1, [6][3]=1, [6][6]=1,
12         [7][5]=1, [7][7]=1, [7][8]=1,
13         [8][7]=1, [8][8]=1
14     };
15     char road [9] = {'a','b','c','d','e','f','g','h','i'};
16
17     for (int i = 0; i < 9; i++){
18         if (i == 2 || i == 3){
19             printf("[%c] = ", road [i]);
20         }
21         else{
22             printf("%c  = ", road [i]);
23         }
24
25         for (int j = 0; j < 9; j++){
26             printf("%3d", road_network [i][j]);
27         }
28         printf("\n");
29     }
30
31     return 0;
32
33 }
```

```
Welcome  C as1.c  C as3.c  C as4.c  C as5.c  C as7_2.c  X  C as7_1.c
C: > Users > Lenovo > Documents > C as7_2.c > ...
1  #include <stdio.h>
2
3  int main(void){
4
5      int point;
6
7      printf("Which point are you located? 0 - A, 1 - B, 2 - C, 3 - D, 4 - E, 5 - F, 6 - G, 7 - H, 8 - I\n");
8      scanf("%d", &point);
9
10     printf("At point: %d\n", point);
11     if (point == 0 || point == 1 || point == 5){
12         printf("point: C arrived to charging station");
13     }
14     else if(point == 2){
15         printf("point: C is a charging station");
16     }
17     else if(point == 3){
18         printf("point: D is a charging station");
19     }
20     else if(point == 4 || point == 6){
21         printf("point: D arrived to charging station");
22     }
23     else{
24         printf("point: No direct path to charging station");
25     }
26
27 }
```