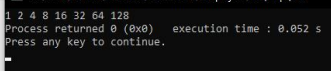


Loop/Repetition Statements

Lecture 4 Assignments

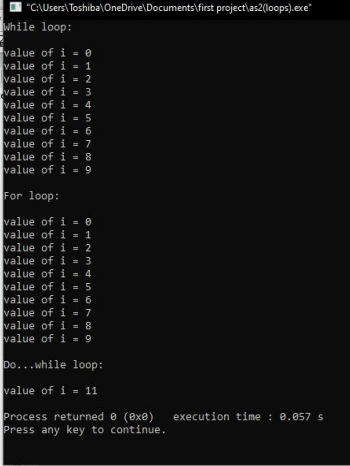
1. What is the output of the following program?

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



2. Which one of the following statements is not equivalent to the other two (assuming that the loop bodies are the same)?

```
1 #include <stdio.h>
2
3 int main() {
4     int i;
5     i = 0;
6
7     printf("While loop:\n\n");
8     while (i < 10) {
9         printf("value of i = %d\n", i);
10        i++;
11    }
12
13    printf("\nFor loop:\n\n");
14    for (i = 0; i < 10; i++) {
15        printf("value of i = %d\n", i);
16    }
17
18    do {
19        i++;
20    } while (i < 10);
21    printf("\nDo...while loop:\n\n");
22    printf("value of i = %d\n", i);
23
24    return 0;
25 }
```



3. Convert item 1 into an equivalent for statement.

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

```

C:\Users\Toshiba\OneDrive\Documents\first project\as3(loops).exe
1 2 4 8 16 32 64 128
Process returned 0 (0x0)   execution time : 0.054 s
Press any key to continue.

```

4. Write a code that computes for the power of two:

```

1  #include<stdio.h>
2
3  int main() {
4
5      long int p;
6      int n;
7
8      printf("\n--- 2 to the n");
9      printf("\n n  2 to the n");
10     printf("\n--- 2 to the n");
11
12     p = 1;
13     for (n = 0; n < 11; ++n) {
14         if (n == 0)
15             p = 1;
16         else
17             p = p * 2;
18         printf("\n%2d %8d", n, p);
19     }
20     printf("\n--- 2 to the n");
21     return 0;
22 }

```

```

C:\Users\Toshiba\OneDrive\Documents\first project\as4(loops).exe
n  2 to the n
---
0      1
1      2
2      4
3      8
4     16
5     32
6     64
7    128
8    256
9    512
10   1024
---
Process returned 0 (0x0)   execution time : 0.098 s
Press any key to continue.

```

5. Write a program that displays a one-month calendar.

```

1  #include<stdio.h>
2
3  int main() {
4
5      int i, num_of_days;
6      int first;
7
8      printf("Enter number of days in a month: ");
9      scanf("%d", &num_of_days);
10
11     if (num_of_days <= 27) {
12         printf("Invalid input.");
13     }
14
15     else if (num_of_days >= 32) {
16         printf("Invalid input.");
17     }
18
19     else {
20
21         printf("Enter first day in a month: ");
22         scanf("%d", &first);
23
24         for(i = 1; i < first; i++)
25             printf("");
26
27         for(i = 1; i <= num_of_days; i++){
28             printf("%3d", i);
29
30             if((first + i - 1) % 7 == 0)
31                 printf("\n");
32         }
33
34         return 0;
35     }
36 }

```

```

C:\Users\Toshiba\OneDrive\Documents\first project\as5(loops).exe
Enter number of days in a month: 30
Enter first day in a month: 1
 1  2  3  4  5  6  7
 8  9 10 11 12 13 14
15 16 17 18 19 20 21
22 23 24 25 26 27 28
29 30
Process returned 0 (0x0)   execution time : 3.955 s
Press any key to continue.

```