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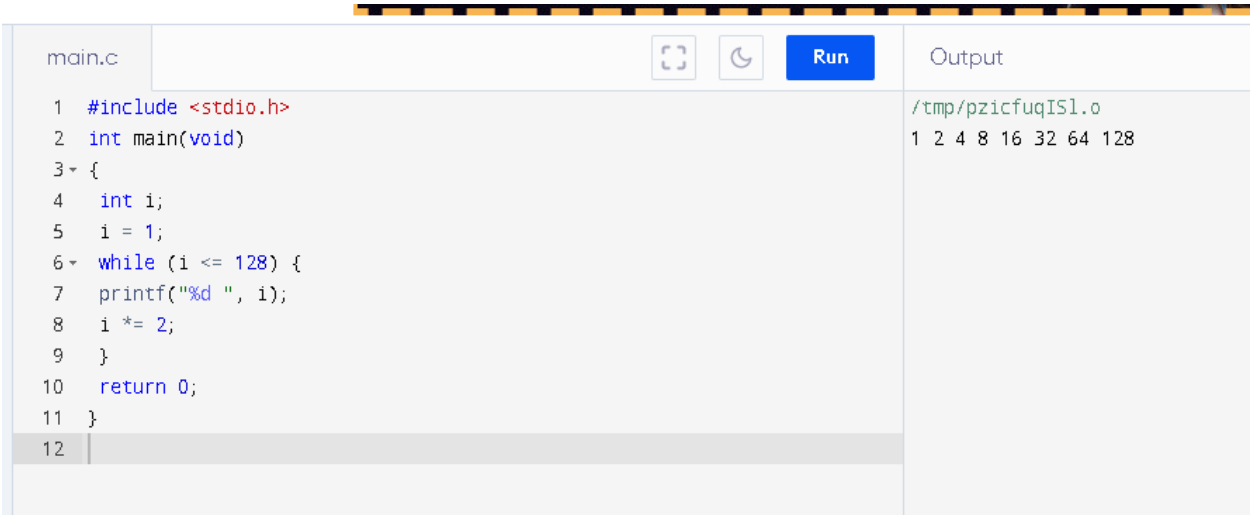
Github link:
https://github.com/JosaiahBorres/CMSC21/tree/main/Lecture%204/Assignment

1. What is the output of the following program?

```
#include
int main(void)
{
int i;
i = 1;
 while (i <= 128)
{ printf("%d ", i);
 i *= 2;
 }
return 0;
 }
```

Save your code as as1.c

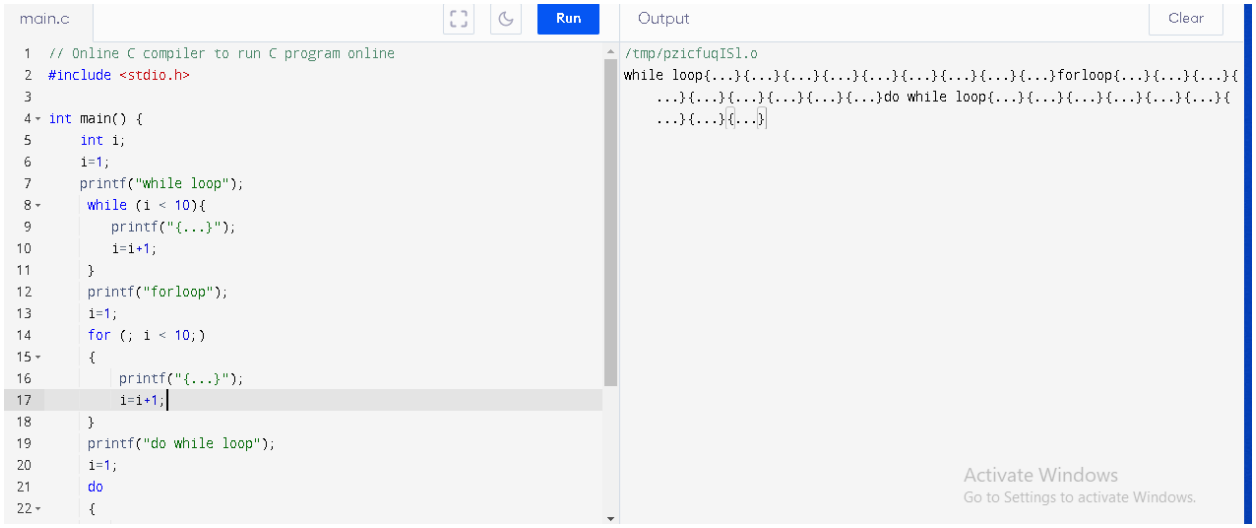
The output from the program above are the set of numbers from 1 to 128 wherein the first number is multiplied by 2, to be specific the program will result in a geometric sequence of 2 starting from number 1 and ends with a number equal or less than 128.



2. Which one of the following statements is not equivalent to the other two (assuming that the loop bodies are the same)?
3. a) while (i < 10) {...}
4. b) for (; i < 10;) {...}
5. c) do {...} while (i < 10);

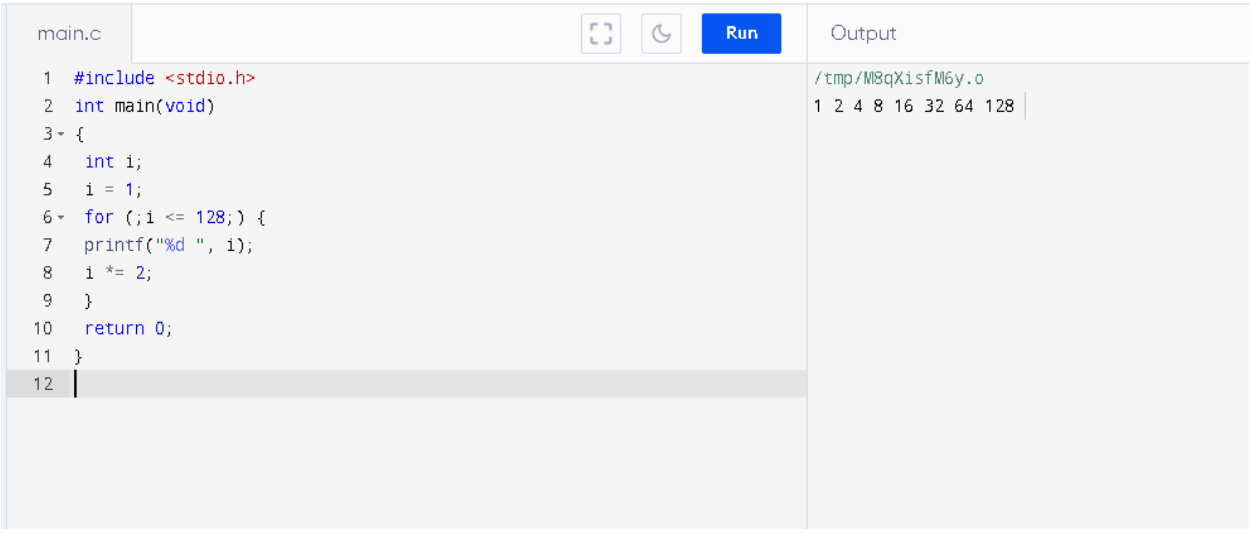
Save your code as as2.c

They are more or less the same, based on the code that I have created they function the same and the output is also the same



3. Convert item 1 into an equivalent for statement. You can validate your answer by checking if the produced outputs by both the while and for statements are similar.

For loop and while loop are fundamentally the same thus the only thing i changed is the loop statement; thus the while loop have been changed to for loop.



4. 4. Write a code that computes for the power of two: Save your code as as4.c

main.c

Run

Output

```c
#include <stdio.h>
int main() {
    int choice, power; //variable used to store the inputted value and the output
    power=1;
    printf("Enter the power ");
    scanf("%d", &choice);//user prompt for the input

    while (choice > 0) { // while statement so thet if the power inputted is greater than 0 then the program will keep multiplying the answer by 2 until it reaches 0
        power = power*2;
        choice=choice-1; // everytime the loop was run 1 is subtracted to the input until it becomes 0
    }
    printf("Answer = %d", power);
    return 0;
}
```

```
/tmp/GfoEAvYwwu.o
Enter the power 10
Answer = 1024
```

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

main.c

Run

Output

```c
#include<stdio.h>
int main(){
    int days, startingday;
    int firstday;
    printf("enter no of days in a month:\n");
    scanf("%d",&days); // scans the number of days in a month
     if (days <28 || days> 31) { // if statement to determine if the inputted value is correct, if the inputted value is less than the least number of days and most number of days in a month then it is invalid
        printf("invalid number");
    }
     else{
    printf("enter first day in a month:\n");
    scanf("%d",&firstday);
    if (firstday <1) { // if firstday is negative then it is an invalid number
        printf("invalid number");
    }
    else{
    for(startingday=1;startingday<firstday;startingday++) // algorithm for the calendar
```

```
/tmp/509rjE6she.o
enter no of days in a month:
31
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 31
```