```
Script started on 2024-04-23 20:24:18-05:00 [TERM="xterm-256color" TTY="/dev/pts/0" COLUMNS="159" LINES="49"]
[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Projects/Project_8[01;32mjovyan@jupyter-
tes4j[00m:[01;34m~/CS2/Projects/Project_8[00m$ pwd
[?2004l
/home/jovyan/CS2/Projects/Project_8
[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Projects/Project_8[01;32mjovyan@jupyter-
tes4j[00m:[01;34m~/CS2/Projects/Project_8[00m$ ls -la
[?2004l
total 24
drwxr-sr-x  3 jovyan users 4096 Apr 23 20:24 [0m[01;34m.[0m
drwxr-sr-x 10 jovyan users 4096 Apr 23 19:48 [01;34m..[0m
-rw-r--r--  1 jovyan users  368 Apr 23 20:23 Circle.cpp
-rw-r--r--  1 jovyan users  171 Apr 23 20:03 Circle.h
-rw-r--r--  1 jovyan users  670 Apr 23 20:24 finalpractice.cpp
drwxr-sr-x  2 jovyan users 4096 Apr 23 20:22 [01;34m.ipynb_checkpoints[0m
-rw-r--r--  1 jovyan users    0 Apr 23 20:24 Sabin_Project_8.log
[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Projects/Project_8[01;32mjovyan@jupyter-
tes4j[00m:[01;34m~/CS2/Projects/Project_8[00m$ cat -n Circle.h
[?2004l
     1  #ifndef CIRCLE_H
     2  #define CIRCLE_H
     3
     4
     5  class Circle{
     6
     7  private:
     8      int radius{};
     9
    10  public:
    11      void set_radius(int value){radius = value;}
    12      void print_values();
    13
    14  };
    15
    16  #endif[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Projects/Project_8[01;32mjovyan@jupyter-
tes4j[00m:[01;34m~/CS2/Projects/Project_8[00m$ cat -n Circle.cpp
[?2004l
     1  #include "Circle.h"
     2  #include <iostream>
     3  #include <cmath>
     4
     5  //Display the values
     6  void Circle::print_values(){
     7      //Set diameter
     8      int diameter = radius * 2;
     9      //Set area
    10      double area = M_PI * pow(radius,2);
    11      //Print out contents
    12      std::cout << "The circle with radius " << radius << " has a diameter of " << diameter << " and an area of " <<
area << '\n';
    13  }[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Projects/Project_8[01;32mjovyan@jupyter-
tes4j[00m:[01;34m~/CS2/Projects/Project_8[00m$ cat -n finalpractice.cpp
[?2004l
     1  /*
     2  Tyler Sabin
     3  Section 004
     4  Project 8
     5  In this project we will recapp working with classes
     6  */
     7
     8  #include "Circle.h"
     9  #include <iostream>
    10  #include <array>
    11
    12  int main(){
    13
    14      //Set variables for array, num of circs, and the class object
    15      std::array<int,20> radius{};
    16      int numCircs{};
    17      Circle circles;
    18
    19      do{
    20          std::cout << "Input the number of circles to create between 1 and 20: ";
    21          std::cin >> numCircs;
    22      }while(numCircs <= 0 || numCircs > 20);
    23
    24      for(int i{0}; i < numCircs; i++){
    25          radius[i] = i +1;
    26      }
    27      for(int i{0}; i < numCircs; i++){
    28          circles.set_radius(radius[i]);
    29          circles.print_values();
    30      }
```

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    31
    32
    33      return 0;
    34  }[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Projects/Project_8[01;32mjovyan@jupyter-
tes4j[00m:[01;34m~/CS2/Projects/Project_8[00m$ g++ -Wall -Wextra -Wa[Kerror Circle.cpp finalpractice.cpp
[?2004l
[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Projects/Project_8[01;32mjovyan@jupyter-
tes4j[00m:[01;34m~/CS2/Projects/Project_8[00m$ g++ -Wall -Wextra -Werror Circle.cpp finalpractice.cpp -o final
[?2004l
[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Projects/Project_8[01;32mjovyan@jupyter-
tes4j[00m:[01;34m~/CS2/Projects/Project_8[00m$ ./final
[?2004l
Input the number of circles to create between 1 and 20: 0
Input the number of circles to create between 1 and 20: 25
Input the number of circles to create between 1 and 20: 30
Input the number of circles to create between 1 and 20: 20
The circle with radius 1 has a diameter of 2 and an area of 3.14159
The circle with radius 2 has a diameter of 4 and an area of 12.5664
The circle with radius 3 has a diameter of 6 and an area of 28.2743
The circle with radius 4 has a diameter of 8 and an area of 50.2655
The circle with radius 5 has a diameter of 10 and an area of 78.5398
The circle with radius 6 has a diameter of 12 and an area of 113.097
The circle with radius 7 has a diameter of 14 and an area of 153.938
The circle with radius 8 has a diameter of 16 and an area of 201.062
The circle with radius 9 has a diameter of 18 and an area of 254.469
The circle with radius 10 has a diameter of 20 and an area of 314.159
The circle with radius 11 has a diameter of 22 and an area of 380.133
The circle with radius 12 has a diameter of 24 and an area of 452.389
The circle with radius 13 has a diameter of 26 and an area of 530.929
The circle with radius 14 has a diameter of 28 and an area of 615.752
The circle with radius 15 has a diameter of 30 and an area of 706.858
The circle with radius 16 has a diameter of 32 and an area of 804.248
The circle with radius 17 has a diameter of 34 and an area of 907.92
The circle with radius 18 has a diameter of 36 and an area of 1017.88
The circle with radius 19 has a diameter of 38 and an area of 1134.11
The circle with radius 20 has a diameter of 40 and an area of 1256.64
[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Projects/Project_8[01;32mjovyan@jupyter-
tes4j[00m:[01;34m~/CS2/Projects/Project_8[00m$ ./final
[?2004l
Input the number of circles to create between 1 and 20: 10
The circle with radius 1 has a diameter of 2 and an area of 3.14159
The circle with radius 2 has a diameter of 4 and an area of 12.5664
The circle with radius 3 has a diameter of 6 and an area of 28.2743
The circle with radius 4 has a diameter of 8 and an area of 50.2655
The circle with radius 5 has a diameter of 10 and an area of 78.5398
The circle with radius 6 has a diameter of 12 and an area of 113.097
The circle with radius 7 has a diameter of 14 and an area of 153.938
The circle with radius 8 has a diameter of 16 and an area of 201.062
The circle with radius 9 has a diameter of 18 and an area of 254.469
The circle with radius 10 has a diameter of 20 and an area of 314.159
[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Projects/Project_8[01;32mjovyan@jupyter-
tes4j[00m:[01;34m~/CS2/Projects/Project_8[00m$ ./final
[?2004l
Input the number of circles to create between 1 and 20: 5
The circle with radius 1 has a diameter of 2 and an area of 3.14159
The circle with radius 2 has a diameter of 4 and an area of 12.5664
The circle with radius 3 has a diameter of 6 and an area of 28.2743
The circle with radius 4 has a diameter of 8 and an area of 50.2655
The circle with radius 5 has a diameter of 10 and an area of 78.5398
[?2004h(base) ]0;jovyan@jupyter-tes4j: ~/CS2/Projects/Project_8[01;32mjovyan@jupyter-
tes4j[00m:[01;34m~/CS2/Projects/Project_8[00m$ exit
[?2004l
exit

Script done on 2024-04-23 20:25:38-05:00 [COMMAND_EXIT_CODE="0"]
```