Lab Sheet – 4

1. 5+10+15+- - - - - - - - - +100

2. 1 + 2 + 4 + - - - - - - - - - + 1024

3. 1 + 4 + 9 + 16- - - - - - - - - + n^2

4. 1 ^3 + 2^3 + 3^ 3 + 4^3 + - - - - - - - - - + n^3

5. 1^ 3 + 3 ^3 + 5^ 3 + 7^3 + - - - - - - - - - + n^3

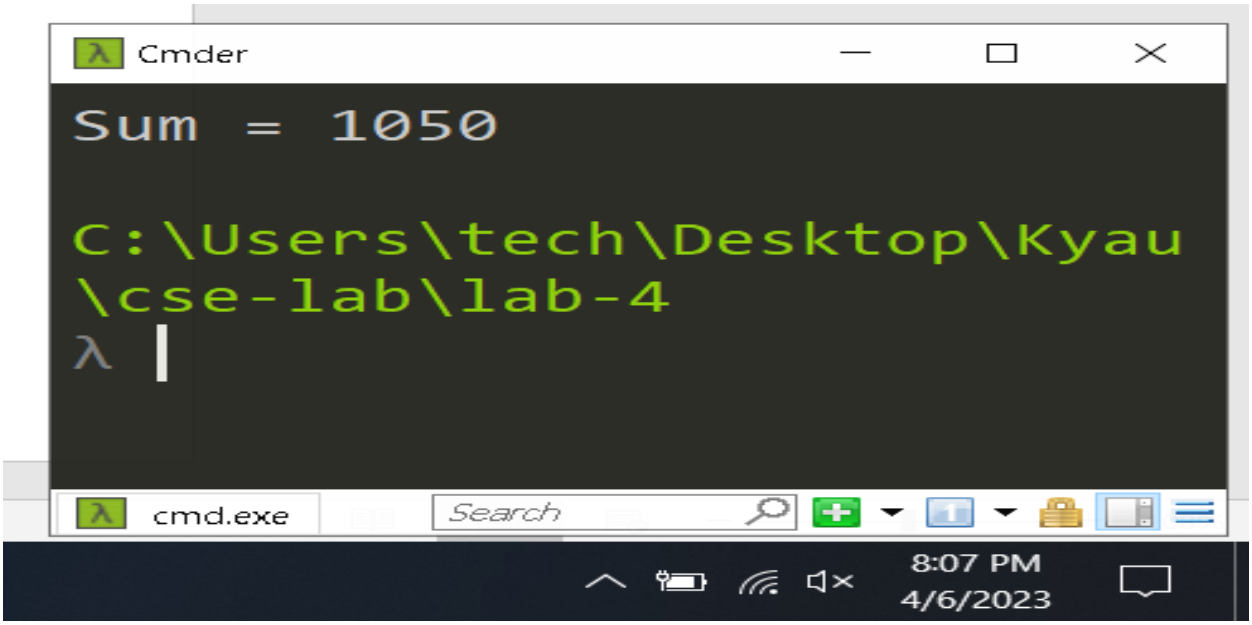
6. 1 + 2 ^2 + 3^ 3 + 4^4 + - - - - - - - - - + n^n

Problem 1: **5+10+15+- - - - - - - - - +100**

Code:

```
#include <stdio.h>

int main(){

int n = 100, sum = 0;

for (int i = 5; i <= n; i += 5){

sum += i;

}

printf("Sum = %d\n", sum);

return 0;

}
```

Output:

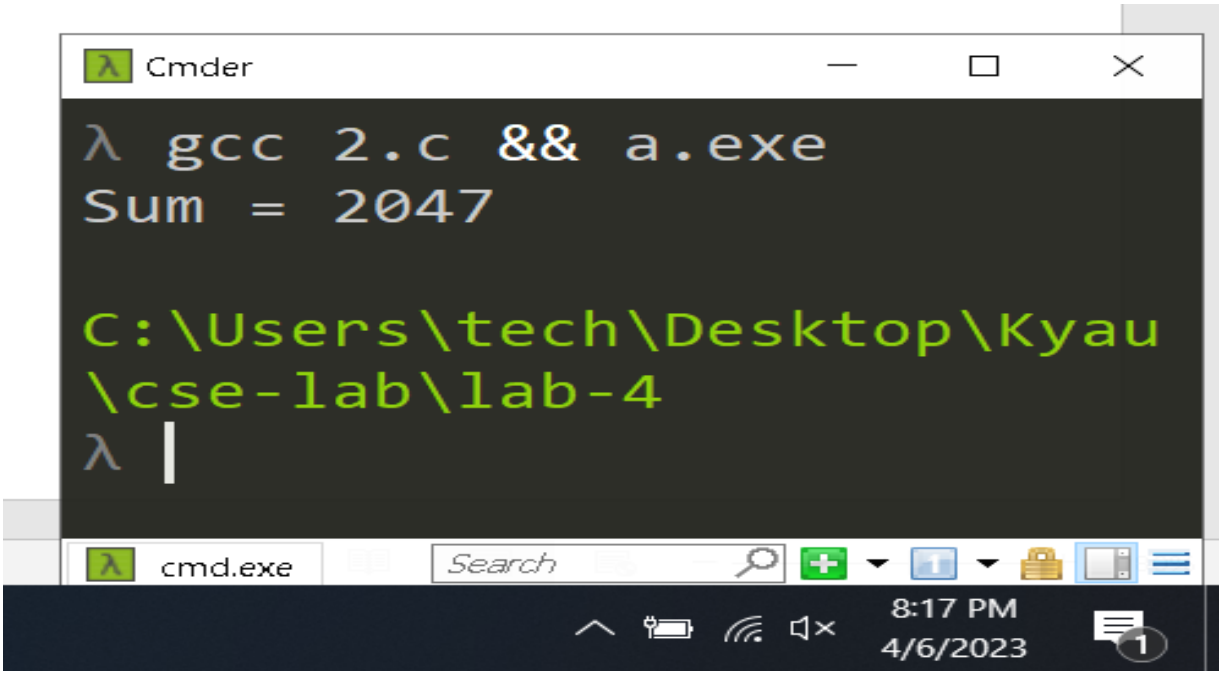


Problem 2: 1 + 2 + 4 + - - - - - - - - - + 1024

Code:

```
#include <stdio.h>

int main(){

    int n = 1024, sum = 0;

    for (int i = 1; i <= n; i *= 2){

        sum += i;

    } printf("Sum = %d\n", sum);

    return 0;

}
```

Output:

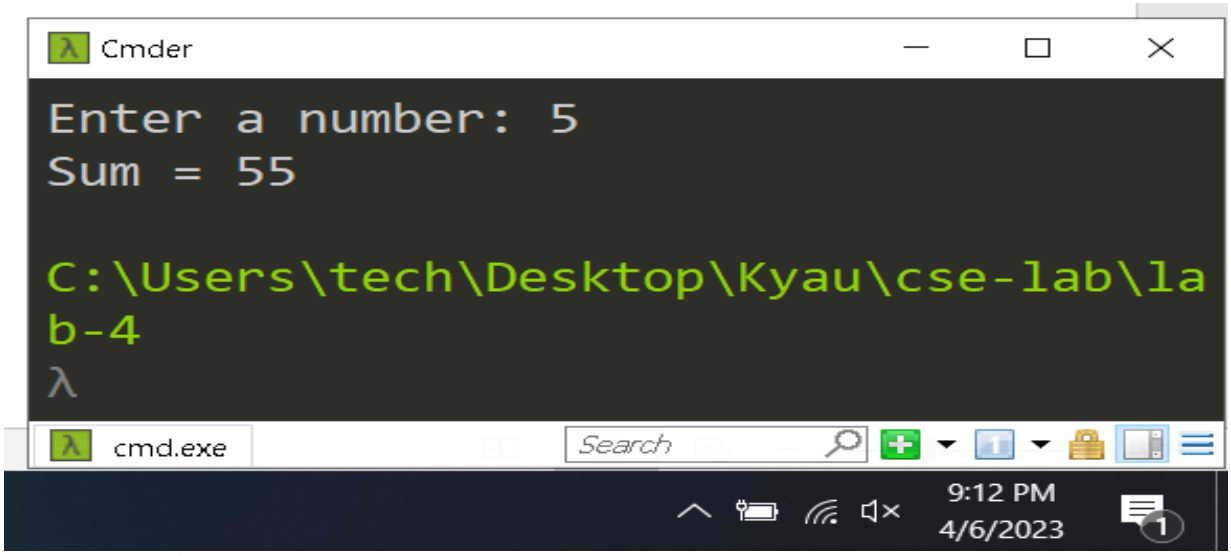


Problem 3: 1 + 4 + 9 + 16- - - - - - - - - + n^2

Code:

```
#include <stdio.h>

#include <math.h>

int main(){

   int n, sum = 0;

   printf("Enter a number: ");

   scanf("%d", &n);

   for (int i = 1; i <= n; i++){

      sum += pow(i, 2);

   }

   printf("Sum = %d\n", sum);

   return 0;

}
```

Output:

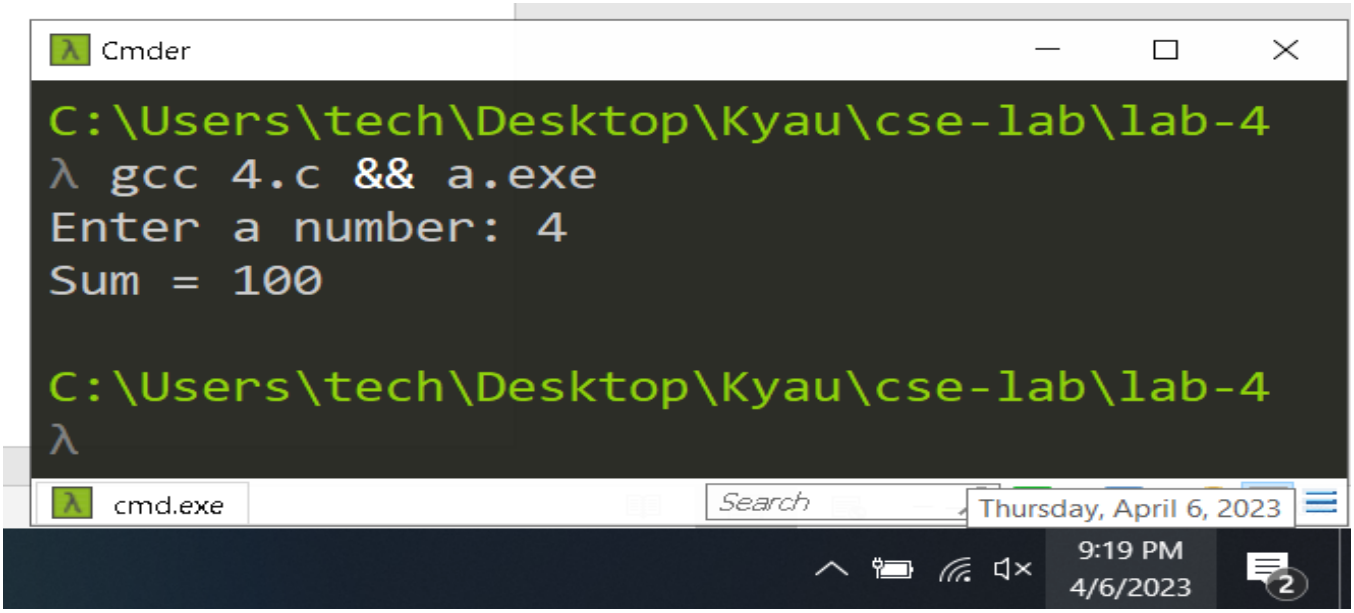


Problem 4: 1 ^3 + 2^3 + 3^ 3 + 4^3 + - - - - - - - - - + n^3

Code:

```
#include <stdio.h>

int main(){

   int n, sum = 0;

   printf("Enter a number: ");

   scanf("%d", &n);

   for (int i = 1; i <= n; i++){

      sum += i * i * i;

   }

   printf("Sum = %d\n", sum);

   return 0;

}
```

Output:

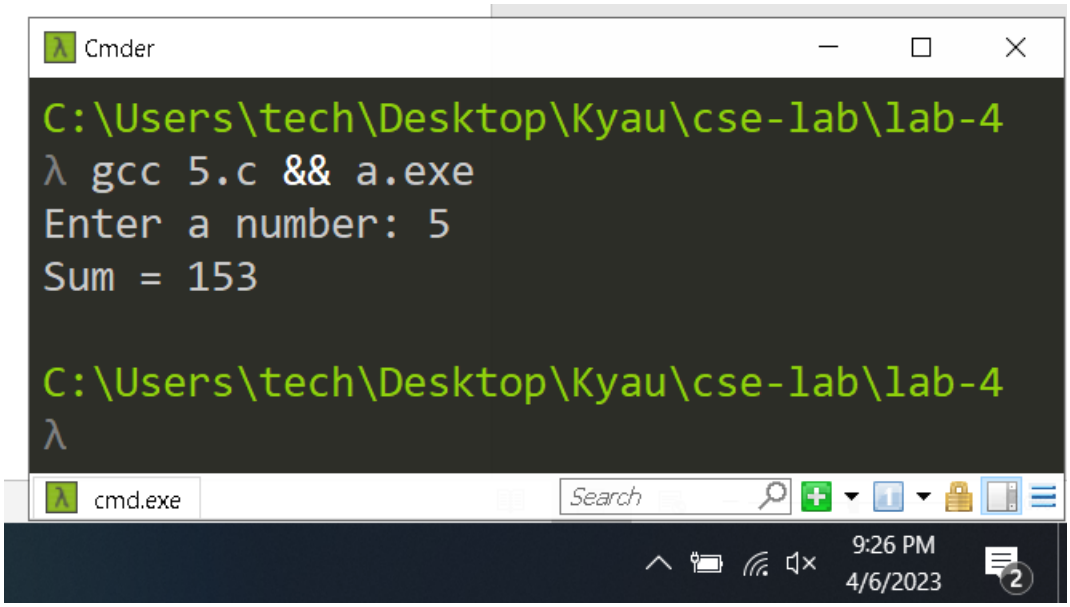


Problem 5: 1^ 3 + 3 ^3 + 5^ 3 + 7^3 + - - - - - - - - - + n^3

Code:

```
#include <stdio.h>

int main(){

   int n, sum = 0;

   printf("Enter a number: ");

   scanf("%d", &n);

   for (int i = 1; i <= n; i++){

      if (i % 2 != 0)

         sum += i * i * i;

   }

   printf("Sum = %d\n", sum);

   return 0;

}
```

Output:



Problem 6: 1 + 2 ^2 + 3^ 3 + 4^4 + - - - - - - - - - + n^n

Code:

```
#include <stdio.h>

#include <math.h>

int main(){

   int n;

   long long int sum = 0;

   printf("Enter a number: ");

   scanf("%d", &n);

   for (int i = 1; i <= n; i++){

      sum += pow(i, i);

   }

         printf("Sum = %lld\n", sum);

   return 0;

}
```

Output: