

LAB 1_1

```
/*-----  
--  
-                                     SE 185 Lab 01  
-       Developed for 185-Rursch by T.Tran and K.Wang  
-       Name: James Mechikoff  
-       Section: C  
-       NetID: 726219551  
-       Date: 8/28/  
-----  
*/  
  
/*  
    Here is a block comment  
    These lines don't run  
*/  
  
/*-----  
--  
-                                     Includes  
-----  
*/  
#include <stdio.h>  
  
/*-----  
--  
-  
Implementation  
-----  
*/  
int main()  
{  
  
    // This is a C comment, this line doesn't run in the program  
  
    printf("Howdy"); // Modify this line  
    printf("\n"); // This prints a newline character  
  
    return 0; // This is a return statement  
}
```

```

jamesm47@C02018-23 /cygdrive/u/se185/lab1
$ gcc -o lab1 lab1_1.c

jamesm47@C02018-23 /cygdrive/u/se185/lab1
$ ./lab1
-bash: ./lab1: No such file or directory

jamesm47@C02018-23 /cygdrive/u/se185/lab1
$ ./lab1.exe
-bash: ./lab1.exe: No such file or directory

jamesm47@C02018-23 /cygdrive/u/se185/lab1
$ ls
lab1.exe  lab1_1.c  'new 1.txt'

jamesm47@C02018-23 /cygdrive/u/se185/lab1
$ ./lab1.exe
-bash: ./lab1.exe: No such file or directory

jamesm47@C02018-23 /cygdrive/u/se185/lab1
$ ./lab1.exe
Howdy

```

```

/*-----
--
-                               SE 185 Lab 01
-       Developed for 185-Rursch by T.Tran and K.Wang
-       Name: James Mechikoff
-       Section: C
-       NetID: 726219551
-       Date: 8/28/2018
-----
*/

/*-----
--
-                               Includes
-----
*/
#include <stdio.h>

/*-----
--
-                               Implementation
-----
*/
int main()
{
    int num = 666; // Change the zero to a different number

    printf("%d", num);
    printf("\n");

    printf("726219551"); // Change this to your netID
    printf("\n");
}

```

```
    return 0;
}
```

```
jamesm47@C02018-23 /cygdrive/u/se185/lab1
$ gcc -o lab1output lab1_output.c

jamesm47@C02018-23 /cygdrive/u/se185/lab1
$ ./lab1output.exe
0
YOUR NETID HERE

jamesm47@C02018-23 /cygdrive/u/se185/lab1
$ gcc -o lab1output lab1_output.c

jamesm47@C02018-23 /cygdrive/u/se185/lab1
$ ./lab1output.exe
666
726219551
```

```
/*-----
--
--                                     SE 185 Lab 01
--       Developed for 185-Rursch by T.Tran and K.Wang
--       Name:      James Mechikoff
--       Section:   C
--       NetID:     726219551
--       Date:      8/28/2018
--
*/

/*-----
--
--                                     Includes
--
*/
#include <stdio.h>
#include <stdlib.h>

/*-----
--
--                                     Implementation
--
*/
int main()
{
    /* DO NOT EDIT THIS FILE */
    char id [1000];

    int num = 0;
```

```

printf("Value before input: %d\n", num);

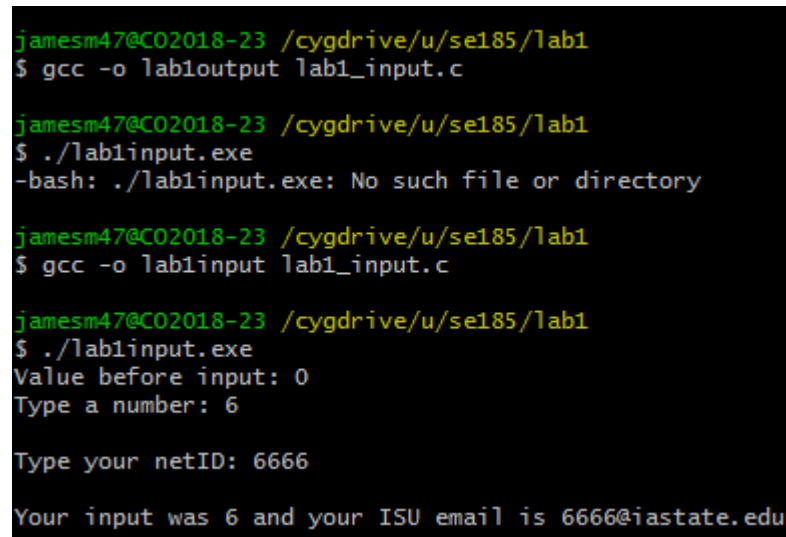
printf("Type a number: ");
scanf("%d", &num);
printf("\n");

printf("Type your netID: ");
scanf("%s", id);
printf("\n");

printf("Your input was %d ", num);
printf("and your ISU email is %s@iastate.edu\n", id);

return 0;
}

```



```

jamesm47@C02018-23 /cygdrive/u/se185/lab1
$ gcc -o lab1output lab1_input.c

jamesm47@C02018-23 /cygdrive/u/se185/lab1
$ ./lab1input.exe
-bash: ./lab1input.exe: No such file or directory

jamesm47@C02018-23 /cygdrive/u/se185/lab1
$ gcc -o lab1input lab1_input.c

jamesm47@C02018-23 /cygdrive/u/se185/lab1
$ ./lab1input.exe
Value before input: 0
Type a number: 6

Type your netID: 6666

Your input was 6 and your ISU email is 6666@iastate.edu

```

Piping Practice

```
jamesm47@C02018-23 /cygdrive/u/se185/lab1
$ ./output.exe | ./input.exe > 726219551.txt
-bash: ./output.exe: No such file or directory
-bash: ./input.exe: No such file or directory

jamesm47@C02018-23 /cygdrive/u/se185/lab1
$ ls
726219551.txt  lab1_1.c      lab1_output.c  lab1output.exe
lab1.exe      lab1_input.c  lab1input.exe  'new 1.txt'
```

726219551.txt - Notepad

File Edit Format View Help

Value before input: 0Type a number: Type your netID: Your input was 666 and your ISU email is 726219551@iastate.edu

Companion Homework

They are on the next two pages.

Decimal → Binary

1 → 1

1 is the same.

10 → 1010

1010
↓ ↓
8 + 2 = 10

42 → 101010

101010
↓ ↓ ↓ ↓
32 + 8 + 2 = 42

255 → 11111111

11111111
↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓
128 + 64 + 32 + 16 + 8 + 4 + 2 + 1 = 255

Decimal → Hexadecimal

1 → 1

1 is the same

10 → A

After 9 you use
letters A to F. F being
15.

42 → 2A

The closest multiple of
16 to 42 is 32. This is 20 in hex
Add 10 in hex to get there

255 → FF

Highest multiple is 240. 240 is F.
Add 15 to get there. FF

Decimal → Octal

1 → 1

1 is the same

10 → 12

lowest divisible is 8
remainder of 2.

42 → 52.

Closest divisible is 5,
remainder 2.

255 → 377

Closest is 384 remainder
30

Hexadecimal → Decimal

F → 15.

F is the last before
reset

DF → 223

16 · 13 (D) = 208 + 15

81 → 129

8 · 16 + 1

04 → 4

Just like F, only
far under 16

Hex → Binary

F → 1111

Convert to Decimal then
to Binary. 8 + 4 + 2 + 1

DF → 11011111

Convert to Decimal then
to Binary 11011111

128 + 64 + 16 + 12 + 4 + 2 + 1 = 223

81 → 1000001

To Decimal the Binary

1000001
128 + 1 = 129

04 → 100

Hex → Dec → Binary

Binary 10010011 1111

Hex to Octal

F → 17

Convert to Decimal

15 3 8 remainder 7

0F → 337

Hex → Decimal → Octal

Closest to 223

$$\begin{array}{r} 223 \div 8 \\ -216 \quad 24 \quad 3 \\ \hline 7 \quad 24 \quad 3 \\ \hline 3 \end{array}$$

←

01 → 201

Hex → Decimal → Octal

$$\begin{array}{r} 201 \div 8 \\ -128 \quad 16 \quad 8 \\ \hline 1 \quad 16 \quad 8 \\ \hline 0 \end{array}$$

04 → 4

Both use 4

Binary to Decimal

10010011 → 147

256 - 211 = 147

111111 → 63

256 - 84 - 2 = 63

Binary to Octal

10010011 → 223

Convert to decimal

$$\begin{array}{r} 127 \div 8 \\ -144 \quad 16 \quad 0 \\ \hline 3 \quad 16 \quad 0 \\ \hline 3 \end{array}$$

111111 → 777

Convert to decimal

$$\begin{array}{r} 63 \div 8 \\ -56 \quad 7 \quad 1 \\ \hline 7 \end{array}$$

Binary to Hex

100 10011

1001 0011

43

1111

0011

1111

3F

3

F