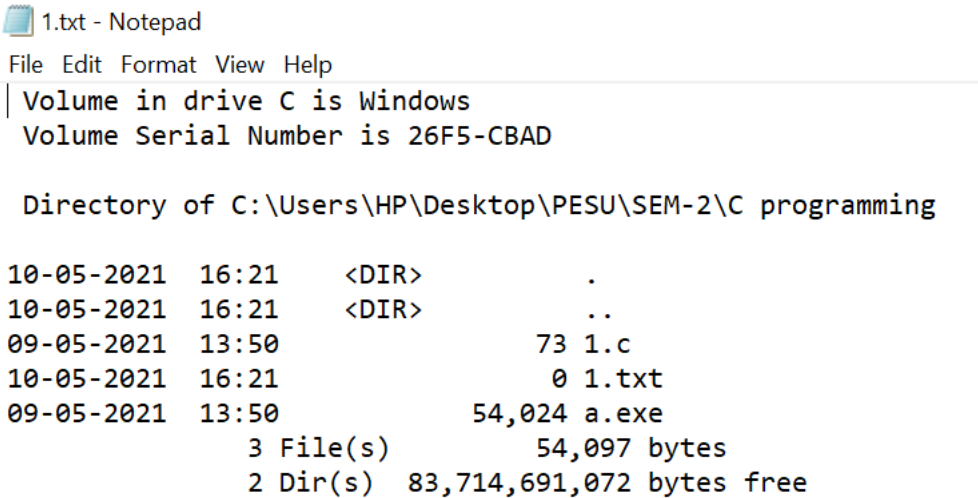# Week 1: File Redirection and gcc compiler options

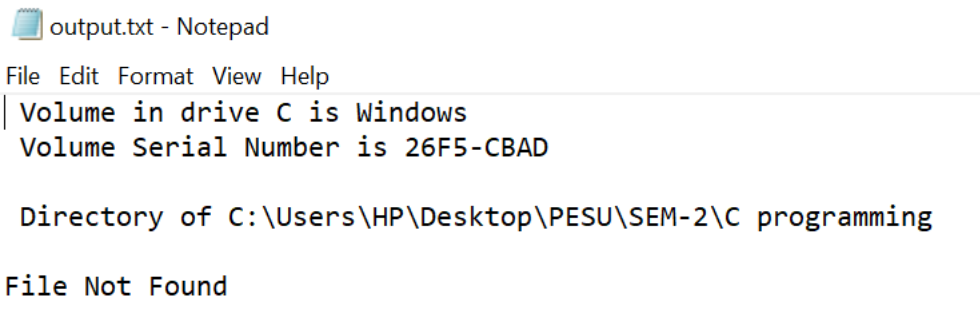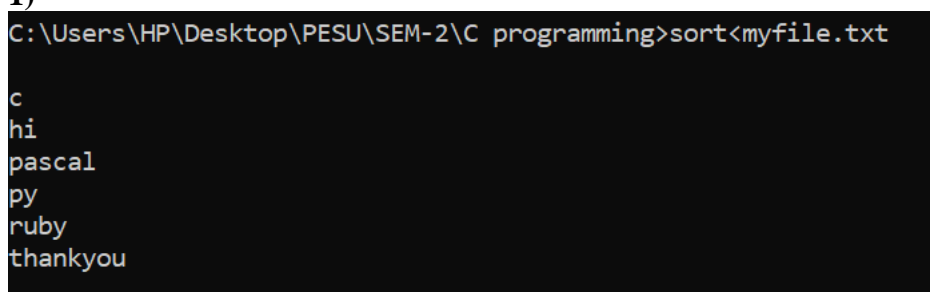| Name: SUNDEEP A	SRN: PES1UG20CS445	Section: O
	Date: 6-05-2021	Week Number: 1

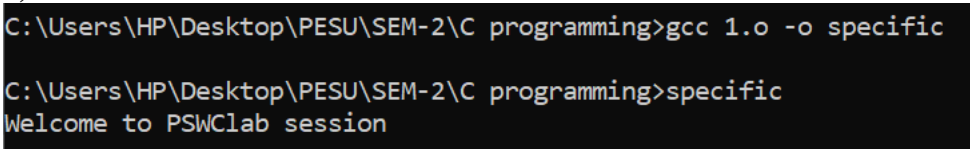| Task 1	**Redirect Standard Output :Write to New File**
	Description: Writes stdout(standard output stream) to a new blank file
	Commands: C:\Users\HP\Desktop\PESU\SEM-2\C programming>dir> 1.txt

	Output Screenshot:
	1.txt - Notepad
	File Edit Format View Help
	<pre>Volume in drive C is Windows
	 Volume Serial Number is 26F5-CBAD
	
	 Directory of C:\Users\HP\Desktop\PESU\SEM-2\C programming
	
	10-05-2021 16:21 <DIR> .
	10-05-2021 16:21 <DIR> ..
	09-05-2021 13:50 73 1.c
	10-05-2021 16:21 0 1.txt
	09-05-2021 13:50 54,024 a.exe
	             3 File(s) 54,097 bytes
	             2 Dir(s) 83,714,691,072 bytes free</pre>

Task 2	**Redirect Standard Output: Writes to the Same File**
	Description: Writes stdout(standard output stream) to a pre-existing file
	Commands: C:\Users\HP\Desktop\PESU\SEM-2\C programming>hostname>>1.txt
	Output Screenshot:

```
1.txt - Notepad
File Edit Format View Help
Volume in drive C is Windows
 Volume Serial Number is 26F5-CBAD

 Directory of C:\Users\HP\Desktop\PESU\SEM-2\C programming

10-05-2021  16:21    <DIR>          .
10-05-2021  16:21    <DIR>          ..
09-05-2021  13:50              73 1.c
10-05-2021  16:21               0 1.txt
09-05-2021  13:50          54,024 a.exe
               3 File(s)         54,097 bytes
               2 Dir(s)  83,714,691,072 bytes free
DESKTOP-0QQM3M7
```

Task 3	**Redirect Standard Error To a File**
	Description: Writes only stderr(Standard error stream) to a new file
	Commands: C:\Users\HP\Desktop\PESU\SEM-2\C programming>dir 2.txt 2> error.txt
	Output Screenshot: error.txt - Notepad File Edit Format View Help File Not Found

| Task 4	**Redirect All Output: Writes to Same File**
	Description: Writes both stdout(Standard output stream) and stderr(Standard error stream) to a new file
	Commands: C:\Users\HP\Desktop\PESU\SEM-2\C programming>dir 2.txt 1> output.txt 2>&1

	Output Screenshot: 📄 output.txt - Notepad File Edit Format View Help Volume in drive C is Windows Volume Serial Number is 26F5-CBAD Directory of C:\Users\HP\Desktop\PESU\SEM-2\C programming File Not Found
Task 5	**Input Redirection-Taking input from file**
	Description: **Takes input from a file and displays required output based on the commands given by the user on the terminal window or even into a new file.**
	Commands: **1)displays on terminal window** **C:\Users\HP\Desktop\PESU\SEM-2\C programming>sort<myfile.txt** **2) the output can be displayed on a new file** **C:\Users\HP\Desktop\PESU\SEM-2\C programming>sort<myfile.txt>sort.txt**
	Output Screenshot: **1)** C:\Users\HP\Desktop\PESU\SEM-2\C programming>sort<myfile.txt c hi pascal py ruby thankyou **2)**

	sort.txt - Notepad File Edit Format View Help c hi pascal py ruby thankyou
Task 6:	**Options in gcc compiler**
	Description: 1)creates an executable(a.exe default) or creating an executable with specified name. 2) To see the output of the pre-processing stage 3)Produce only the pre-processor output with -E command 4)produce only the assembly code using the -S command. 5)Produce only the compiled command using the -C command.

	Commands:
	1)
	
	1.c - Notepad
	
	File Edit Format View Help
	
	``c
	#include<stdio.h>
	int main ()
	{
	        printf("Welcome to PSWClab session \n");
	        return 0;
	}
	``
	
	2) C:\Users\HP\Desktop\PESU\SEM-2\C programming>gcc -save-temps 1.c
	3) C:\Users\HP\Desktop\PESU\SEM-2\C programming>gcc -E 1.c >1.i
	4) C:\Users\HP\Desktop\PESU\SEM-2\C programming>gcc -S 1.c > 1.s
	5) C:\Users\HP\Desktop\PESU\SEM-2\C programming>gcc -C 1.c

	Output Screenshot: **1)** ``` C:\Users\HP\Desktop\PESU\SEM-2\C programming>gcc 1.o -o specific C:\Users\HP\Desktop\PESU\SEM-2\C programming>specific Welcome to PSWClab session ```

2)

☐ 📄 1.c	10-05-2021 04:52 PM	C File	1 KB
📄 1.i	10-05-2021 05:30 PM	I File	54 KB
🅾 1.o	10-05-2021 05:30 PM	O File	1 KB
📄 1.s	10-05-2021 05:30 PM	S File	1 KB
🖼 a.exe	10-05-2021 05:30 PM	Application	53 KB

3)

1.i - Notepad

File   Edit   Format   View   Help

```
# 1 "1.c"
# 1 "<built-in>"
# 1 "<command-line>"
# 1 "1.c"
# 1 "C:/Program Files/MinGW/x86_64-w64-mingw32/include/stdio.h" 1 3
# 9 "C:/Program Files/MinGW/x86_64-w64-mingw32/include/stdio.h" 3
# 1 "C:/Program Files/MinGW/x86_64-w64-mingw32/include/crtdefs.h" 1 3
# 10 "C:/Program Files/MinGW/x86_64-w64-mingw32/include/crtdefs.h" 3
# 1 "C:/Program Files/MinGW/x86_64-w64-mingw32/include/_mingw.h" 1 3
# 12 "C:/Program Files/MinGW/x86_64-w64-mingw32/include/_mingw.h" 3
# 1 "C:/Program Files/MinGW/x86_64-w64-mingw32/include/_mingw_mac.h" 1 3
# 98 "C:/Program Files/MinGW/x86_64-w64-mingw32/include/_mingw_mac.h" 3


# 107 "C:/Program Files/MinGW/x86_64-w64-mingw32/include/_mingw_mac.h" 3


# 13 "C:/Program Files/MinGW/x86_64-w64-mingw32/include/_mingw.h" 2 3
# 1 "C:/Program Files/MinGW/x86_64-w64-mingw32/include/_mingw_secapi.h" 1 3
# 14 "C:/Program Files/MinGW/x86_64-w64-mingw32/include/_mingw.h" 2 3
# 282 "C:/Program Files/MinGW/x86_64-w64-mingw32/include/_mingw.h" 3
# 1 "C:/Program Files/MinGW/x86_64-w64-mingw32/include/vadefs.h" 1 3
# 9 "C:/Program Files/MinGW/x86_64-w64-mingw32/include/vadefs.h" 3
# 1 "C:/Program Files/MinGW/x86_64-w64-mingw32/include/_mingw.h" 1 3
# 578 "C:/Program Files/MinGW/x86_64-w64-mingw32/include/_mingw.h" 3
# 1 "C:/Program Files/MinGW/x86_64-w64-mingw32/include/sdks/_mingw_directx.h" 1 3
# 579 "C:/Program Files/MinGW/x86_64-w64-mingw32/include/_mingw.h" 2 3
# 1 "C:/Program Files/MinGW/x86_64-w64-mingw32/include/sdks/_mingw_ddk.h" 1 3
# 580 "C:/Program Files/MinGW/x86_64-w64-mingw32/include/_mingw.h" 2 3
# 10 "C:/Program Files/MinGW/x86_64-w64-mingw32/include/vadefs.h" 2 3




#pragma pack(push,_CRT_PACKING)
# 24 "C:/Program Files/MinGW/x86_64-w64-mingw32/include/vadefs.h" 3
```

4)

1.s - Notepad

File Edit Format View Help

```
        .file   "1_prog.c"
        .text
        .def    __main; .scl   2;       .type   32;     .endef
        .section .rdata,"dr"
.LC0:
        .ascii "welcome to PSWC lab session \0"
        .text
        .globl  main
        .def    main;   .scl    2;      .type   32;     .endef
        .seh_proc       main
main:
        pushq   %rbp
        .seh_pushreg    %rbp
        movq    %rsp, %rbp
        .seh_setframe   %rbp, 0
        subq    $32, %rsp
        .seh_stackalloc 32
        .seh_endprologue
        call    __main
        leaq    .LC0(%rip), %rcx
        call    puts
        movl    $0, %eax
        addq    $32, %rsp
        popq    %rbp
        ret
        .seh_endproc
        .ident  "GCC: (x86_64-posix-seh-rev0, Built by MinGW-W64 project) 8.1.0"
        .def    puts;   .scl    2;      .type   32;     .endef
```

5)

```
C:\Users\HP\Desktop\PESU\SEM-2\C programming>gcc -C 1.c

C:\Users\HP\Desktop\PESU\SEM-2\C programming>a
Welcome to PSWClab session
```