NAME: AMAN RANGARI
MIS NO: 642303017

SUBJECT: PPL
ASSIGNMENT NO:-02

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PROGRAM:

```
void function()
 {
 char buff[5];
 char buff1[16];
 }

 int function1(){
 return 1;
 }

 int main()
 {
 int a=1, b=5, c=6;
 function();
 function1();
 return 0;
 }
```

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OUTPUT:

i) objdump -f:

```
student@cc-91:~/om ppl/expt2$ objdump a-expt2.o -f

a-expt2.o:     file format elf64-x86-64
architecture: i386:x86-64, flags 0x00000011:
HAS_RELOC, HAS_SYMS
start address 0x0000000000000000

student@cc-91:~/om ppl/expt2$
```

ii) objdump -x

```
student@cc-91:~/om ppl/expt2$ objdump a-expt2.o -x

a-expt2.o:     file format elf64-x86-64
a-expt2.o
architecture: i386:x86-64, flags 0x00000011:
HAS_RELOC, HAS_SYMS
start address 0x0000000000000000

Sections:
Idx Name          Size      VMA               LMA               File off  Algn
  0 .text         0000007d  0000000000000000  0000000000000000  00000040  2**0
                  CONTENTS, ALLOC, LOAD, RELOC, READONLY, CODE
  1 .data         00000000  0000000000000000  0000000000000000  000000bd  2**0
                  CONTENTS, ALLOC, LOAD, DATA
  2 .bss          00000000  0000000000000000  0000000000000000  000000bd  2**0
                  ALLOC
  3 .comment      0000002c  0000000000000000  0000000000000000  000000bd  2**0
                  CONTENTS, READONLY
  4 .note.GNU-stack 00000000  0000000000000000  0000000000000000  000000e9  2**0
                  CONTENTS, READONLY
  5 .note.gnu.property 00000020  0000000000000000  0000000000000000  000000f0  2*
                  CONTENTS, ALLOC, LOAD, READONLY, DATA
  6 .eh_frame     00000078  0000000000000000  0000000000000000  00000110  2**3
                  CONTENTS, ALLOC, LOAD, RELOC, READONLY, DATA
SYMBOL TABLE:
0000000000000000 l    df *ABS*  0000000000000000 expt2.c
0000000000000000 l    d  .text  0000000000000000 .text
0000000000000000 g     F .text  0000000000000032 function
0000000000000000         *UND*  0000000000000000 __stack_chk_fail
0000000000000032 g     F .text  000000000000000f function1
0000000000000041 g     F .text  000000000000003c main


RELOCATION RECORDS FOR [.text]:
OFFSET           TYPE              VALUE
000000000000002c R_X86_64_PLT32    __stack_chk_fail-0x0000000000000004
0000000000000068 R_X86_64_PLT32    function-0x0000000000000004
0000000000000072 R_X86_64_PLT32    function1-0x0000000000000004


RELOCATION RECORDS FOR [.eh_frame]:
OFFSET           TYPE              VALUE
0000000000000020 R_X86_64_PC32     .text
0000000000000040 R_X86_64_PC32     .text+0x0000000000000032
0000000000000060 R_X86_64_PC32     .text+0x0000000000000041


student@cc-91:~/om ppl/expt2$
```

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iii) objdump --disassemble-all

```
student@cc-91:~/om ppl/expt2$ objdump a-expt2.o --disassemble-all

a-expt2.o:     file format elf64-x86-64


Disassembly of section .text:

0000000000000000 <function>:
   0:   f3 0f 1e fa             endbr64
   4:   55                      push   %rbp
   5:   48 89 e5                mov    %rsp,%rbp
   8:   48 83 ec 20             sub    $0x20,%rsp
   c:   64 48 8b 04 25 28 00    mov    %fs:0x28,%rax
  13:   00 00
  15:   48 89 45 f8             mov    %rax,-0x8(%rbp)
  19:   31 c0                   xor    %eax,%eax
  1b:   90                      nop
  1c:   48 8b 45 f8             mov    -0x8(%rbp),%rax
  20:   64 48 2b 04 25 28 00    sub    %fs:0x28,%rax
  27:   00 00
  29:   74 05                   je     30 <function+0x30>
  2b:   e8 00 00 00 00          call   30 <function+0x30>
  30:   c9                      leave
  31:   c3                      ret

0000000000000032 <function1>:
  32:   f3 0f 1e fa             endbr64
  36:   55                      push   %rbp
  37:   48 89 e5                mov    %rsp,%rbp
  3a:   b8 01 00 00 00          mov    $0x1,%eax
  3f:   5d                      pop    %rbp
  40:   c3                      ret

0000000000000041 <main>:
  41:   f3 0f 1e fa             endbr64
  45:   55                      push   %rbp
  46:   48 89 e5                mov    %rsp,%rbp
  49:   48 83 ec 10             sub    $0x10,%rsp
  4d:   c7 45 f4 01 00 00 00    movl   $0x1,-0xc(%rbp)
  54:   c7 45 f8 05 00 00 00    movl   $0x5,-0x8(%rbp)
  5b:   c7 45 fc 06 00 00 00    movl   $0x6,-0x4(%rbp)
  62:   b8 00 00 00 00          mov    $0x0,%eax
  67:   e8 00 00 00 00          call   6c <main+0x2b>
  6c:   b8 00 00 00 00          mov    $0x0,%eax
  71:   e8 00 00 00 00          call   76 <main+0x35>
  76:   b8 00 00 00 00          mov    $0x0,%eax
  7b:   c9                      leave
  7c:   c3                      ret
```

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Disassembly of section .comment:

0000000000000000 <.comment>:
   0:   00 47 43                add    %al,0x43(%rdi)
   3:   43 3a 20                rex.XB cmp (%r8),%spl
   6:   28 55 62                sub    %dl,0x62(%rbp)
   9:   75 6e                   jne    79 <main+0x38>
   b:   74 75                   je     82 <main+0x41>
   d:   20 31                   and    %dh,(%rcx)
   f:   31 2e                   xor    %ebp,(%rsi)
  11:   34 2e                   xor    $0x2e,%al
  13:   30 2d 31 75 62 75       xor    %ch,0x75627531(%rip)        # 7562754a <main+0x75627509>
  19:   6e                      outsb  %ds:(%rsi),(%dx)
  1a:   74 75                   je     91 <main+0x50>
  1c:   31 7e 32                xor    %edi,0x32(%rsi)
  1f:   32 2e                   xor    (%rsi),%ch
  21:   30 34 29                xor    %dh,(%rcx,%rbp,1)
  24:   20 31                   and    %dh,(%rcx)
  26:   31 2e                   xor    %ebp,(%rsi)
  28:   34 2e                   xor    $0x2e,%al
  2a:   30 00                   xor    %al,(%rax)

Disassembly of section .note.gnu.property:

0000000000000000 <.note.gnu.property>:
   0:   04 00                   add    $0x0,%al
   2:   00 00                   add    %al,(%rax)
   4:   10 00                   adc    %al,(%rax)
   6:   00 00                   add    %al,(%rax)
   8:   05 00 00 00 47          add    $0x47000000,%eax
   d:   4e 55                   rex.WRX push %rbp
   f:   00 02                   add    %al,(%rdx)
  11:   00 00                   add    %al,(%rax)
  13:   c0 04 00 00             rolb   $0x0,(%rax,%rax,1)
  17:   00 03                   add    %al,(%rbx)
  19:   00 00                   add    %al,(%rax)
  1b:   00 00                   add    %al,(%rax)
  1d:   00 00                   add    %al,(%rax)
        ...
```

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Disassembly of section .eh_frame:

0000000000000000 <.eh_frame>:
   0:   14 00                   adc    $0x0,%al
   2:   00 00                   add    %al,(%rax)
   4:   00 00                   add    %al,(%rax)
   6:   00 00                   add    %al,(%rax)
   8:   01 7a 52                add    %edi,0x52(%rdx)
   b:   00 01                   add    %al,(%rcx)
   d:   78 10                   js     1f <.eh_frame+0x1f>
   f:   01 1b                   add    %ebx,(%rbx)
  11:   0c 07                   or     $0x7,%al
  13:   08 90 01 00 00 1c       or     %dl,0x1c000001(%rax)
  19:   00 00                   add    %al,(%rax)
  1b:   00 1c 00                add    %bl,(%rax,%rax,1)
  1e:   00 00                   add    %al,(%rax)
  20:   00 00                   add    %al,(%rax)
  22:   00 00                   add    %al,(%rax)
  24:   32 00                   xor    (%rax),%al
  26:   00 00                   add    %al,(%rax)
  28:   00 45 0e                add    %al,0xe(%rbp)
  2b:   10 86 02 43 0d 06       adc    %al,0x60d4302(%rsi)
  31:   69 0c 07 08 00 00 00    imul   $0x8,(%rdi,%rax,1),%ecx
  38:   1c 00                   sbb    $0x0,%al
  3a:   00 00                   add    %al,(%rax)
  3c:   3c 00                   cmp    $0x0,%al
  3e:   00 00                   add    %al,(%rax)
  40:   00 00                   add    %al,(%rax)
  42:   00 00                   add    %al,(%rax)
  44:   0f 00 00                sldt   (%rax)
  47:   00 00                   add    %al,(%rax)
  49:   45 0e                   rex.RB (bad)
  4b:   10 86 02 43 0d 06       adc    %al,0x60d4302(%rsi)
  51:   46 0c 07                rex.RX or $0x7,%al
  54:   08 00                   or     %al,(%rax)
  56:   00 00                   add    %al,(%rax)
  58:   1c 00                   sbb    $0x0,%al
  5a:   00 00                   add    %al,(%rax)
  5c:   5c                      pop    %rsp
  5d:   00 00                   add    %al,(%rax)
  5f:   00 00                   add    %al,(%rax)
  61:   00 00                   add    %al,(%rax)
  63:   00 3c 00                add    %bh,(%rax,%rax,1)
  66:   00 00                   add    %al,(%rax)
  68:   00 45 0e                add    %al,0xe(%rbp)
  6b:   10 86 02 43 0d 06       adc    %al,0x60d4302(%rsi)
  71:   73 0c                   jae    7f <main+0x3e>
  73:   07                      (bad)
  74:   08 00                   or     %al,(%rax)
        ...
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```