

# Homework 9 Solution

## Problem 1

| main.c                                                                                | print.c                                                                                                                                                                                                    |
|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <pre>char *p = "hello";  void print();  int main {     print();     return 0; }</pre> | <pre>#include &lt;stdio.h&gt;  extern char *p;  char *p1 = "world\n";  static char *p2 = "hello moto!"  void print() {     printf("%s %s", p, p1); }  static void print2() {     printf("%s", p2); }</pre> |

Indicate the type of the following symbols, e.g. **defined global, referenced global or local**

| File    | Symbol | Type              |
|---------|--------|-------------------|
| main.c  | p      | defined global    |
|         | print  | referenced global |
| print.c | p      | referenced global |
|         | p1     | defined global    |
|         | p2     | local             |
|         | print  | defined global    |
|         | print2 | local             |

## Problem 2

| Symbol | Location |
|--------|----------|
| c      | .data    |
| arr    | .bss     |
| y      | .data    |
| b      | stack    |
| printf | .text    |

## Problem 3

A.

Relocation entries for the .text section:

```
1  RELOCATION RECORDS FOR [.text]:
2  OFFSET      TYPE          VALUE
3  00000012    R_386_PC32      p3
4  00000019    R_386_32        xp
5  00000021    R_386_PC32      p2
```

B.

Relocation entries for .data section:

```
1  RELOCATION RECORDS FOR [.data]:
2  OFFSET      TYPE          VALUE
3  00000004    R_386_32        x
```