

NAME Solutions

1. Show the output of the program using the blocks provided.

```
main()
{
  int    a[6][5], b[8], *p;

  a[2][1] = 1;
  *(a + 13) = 2;
  *(a + 3) = 3;
  *(a + 4*5+3) = 4;
  p = a + 6;
  p[10] = 5;
  p = &(a[3][4]);
  *(p + 8) = 6;
  *a = 7;
  *p = 8;

  b[6] = 9;
  p = b + 1;
  p[2] = 10;
  *(b+2) = 11;
  *(p+3) = 12;
  p = &(b[5]);
  p[0] = 13;
}
```

a

7			3	
	p			
	1		2	
	5			p8
			4	
		6		

b

	p	11	10	12	p ¹³	9	
--	---	----	----	----	-----------------	---	--

2. Write a complete program to read a file of family member names and save the data in a new file using the format below. The input file has the following fields: first name then last name, then number of children maximum 10, then the names of all of the children and finally the name of the wife. See example files below:

Input file 1

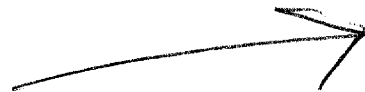
```
Fred Garcia 3 Ted James Tyler Mary
John Smith 2 Donna Jennifer Anna
James Brown 4 Carl Andrew Mike Sara Barbara
```

The output file should list the wife's name after the man's name and the children's names each on its own line. See example below:

```
Fred, Mary          Garcia
  Ted
  James
  Tyler
John, Anna          Smith
  Donna
  Jennifer
James, Barbara      Brown
  Carl
  Andrew
  Mike
  Sara
```

Use the number of children to know when to stop reading children names and read the wife's name. Finally close all files. You can use `fprintf(fp, "%10s", "hi");` This will print hi using 10 spaces for the field.

Use the next page to write on.



```
#include "stdio.h"
```

```
void main()
```

```
{
```

```
FILE *ifp, *ofp;
```

```
char Lastname[80], dad[80], mom[80],  
children[10][80];
```

```
int i, n;
```

```
ifp = fopen("input.dat", "r");
```

```
ofp = fopen("output.dat", "w");
```

```
if (ifp == null || ofp == null)  
return;
```

```
while (!feof(ifp))
```

```
{
```

```
fscanf(ifp, "%s %s %d",  
dad, lastname, &n);
```

```
for (i = 0; i < n; i++)
```

```
fscanf(ifp, "%s", children[i]);
```

```
fscanf(ifp, "%s", mom);
```

```
fprintf(ofp, "%s, %s %s\n",  
dad, mom, lastname);
```

```
for (i=0; i < n; i++)
```

```
    fprintf(ofp, "%s\n", children[i]);
```

```
}
```

```
fclose(ifp);
```

```
fclose(ofp);
```

```
}
```

3. What is the contents of each variable in the following program? There is no output so I can only grade you from the history of each variable.

```

int    w[3] = {1,2,3},
       x[3] = {4,5,6},
       y[2] = {7,8},
       z[2] = {9,10};

int bill(int x[2], int *y, int *p)
{
    int z[3] = {11,12,13};

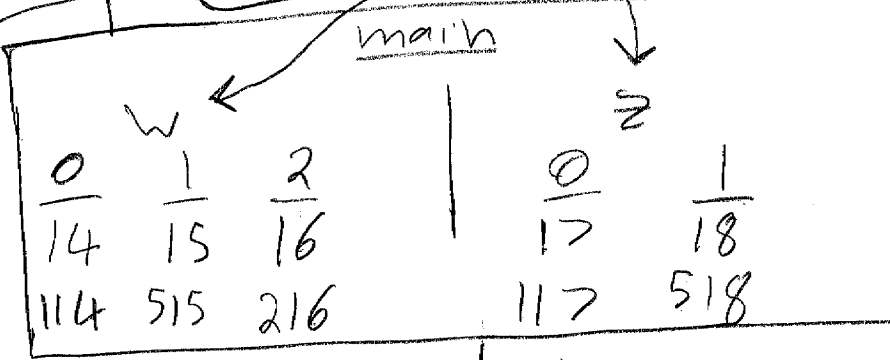
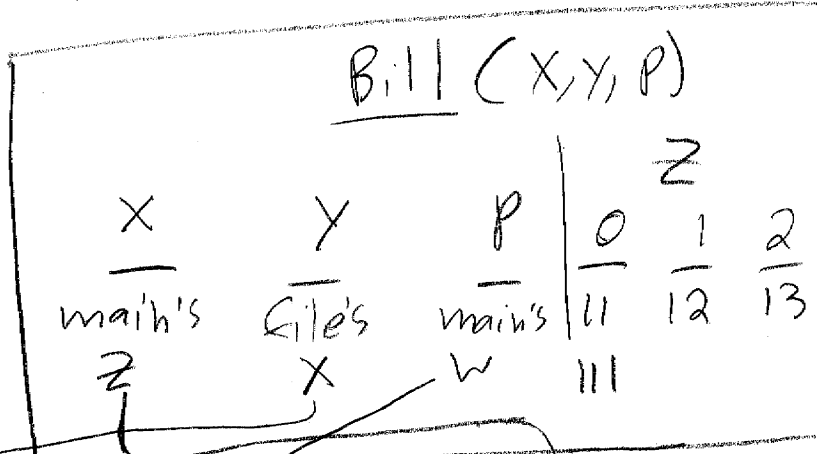
    w[0] = w[0] + 100;
    x[0] = x[0] + 100;
    y[0] = y[0] + 100;
    z[0] = z[0] + 100;
    p[0] = p[0] + 100;
    y[2] = y[2] + 200;
    p[2] = p[2] + 200;
}

void main()
{
    int w[3] = {14,15,16},
        z[2] = {17,18};

    w[1] = w[1] + 500;
    x[1] = x[1] + 500;
    y[1] = y[1] + 500;
    z[1] = z[1] + 500;

    bill(z,x,w);
}

```



file

