Lab 4: Playing around with Pointers

1. **Identify and explain which of the following expressions are valid and which are not valid as shown with an arrow. 5 pts**

```
char c;
char *ptr;
int f;
ptr = &c;          ←
ptr = &f;          ←
ptr = &'#';        ←
ptr = &500;        ←
ptr = &(f+3);      ←
```

2. **What will be the size of the following pointers? What are their scalar values? Explain with screen shots. 4 pts**

```
int * p;
double *q;
char* r;
float* s;
```

3. **What is wrong with the following program? Explain. How will you fix it?** **1 pt**

```
#include <stdio.h>
int main(){
        int i;
        int *ptr = &i;
        scanf("%d", &ptr);
        printf("The value of i is: %d\n", *ptr);
        return 0;
}
```

4. **Take a look at the code snippet below. What will be the final values of 'c', 'a', and '*p'.**

```
int c, a = 10;
int *p = &a;
c = *p;
*p = *p * *p;
(*p)++;
c = *&a;
```

4 pts

5. **Consider the following piece of code. What will be printed by *ptr and ptr after the lines shown with an arrow? Explain with screenshots.**

```
int a[4] = { 8, 3, 5, 6};
int *ptr = a;   ←
ptr ++;         ←
```

4 pts

6. **What are the differences between the following two declarations? 2 pts**

   char array[] = “Hello World”;

   char *array = “Hello World”;

Submission:

A pdf file containing answers to the questions and output capture wherever necessary.
Name your file with your last name first letter of your first name Lab4.pdf (ex: yasminsLab4.pdf).

Submission deadline is: 11:59 pm, Thursday, October 29. No late submission will be considered.