16.216: ECE Application Programming

Fall 2012

Lecture 3: Key Questions
September 10, 2012

1. What are the four key characteristics of a variable?

2. What rules must be followed when naming variables?

3. Show how variables are declared and how values are assigned to them.

4. **Example:** What values do w, x, y, and z have at the end of this program?

```
int main() {
    int w = 5;
    float x;
    double y;
    char z = 'a';
    x = 8.579;
    y = -0.2;
    w = x;
    y = y + 3;
    z = w – 5;
    return 0;
}
```

5. Describe the use of `printf()` to print numeric values and characters.

6. **Example:** Show the output of each of the following short programs:

a.

```
#include <stdio.h>
void main()
{
     int i=2, j=3, k, m;
     k = j * i;
     m = i + j;
     printf("%d %d %d %d\n", i, j, k, m);
}
```

b.

```
#include <stdio.h>
void main() {
     double f, g;
     f = 1.0 / 4.0;
     g = f * 20;
     printf("f = %lf,\ng = %lf\n", f, g);
}
```

c.

```
#include <stdio.h>
void main(){
    int a = 5, b = 2;
    printf("Output%doesn't%dmake%dsense", a, b, a + b);
}
```