

CSC 209 Review 4

August 19, 2020

1. **K.K. 11.1:** If i is a variable and p points to i , which of the following expressions are aliases for i ?
 - a) `*p`
 - b) `*&p`
 - c) `*i`
 - d) `*&i`
 - e) `&p`
 - f) `&*p`
 - g) `&i`
 - h) `&*i`
2. **K.K 11.2:** If i is an `int` variable and p and q are pointers to `int` which of the following assignments are legal?
 - a) `p = i;`
 - b) `*p = &i;`
 - c) `&p = q;`
 - d) `p = &q;`
 - e) `p = *&q;`
 - f) `p = q;`
 - g) `p = *q;`
 - h) `*p = q;`
 - i) `*p = *q;`
3. **K.K.11.3:** The following function supposedly computes the sum and average of the numbers in the array `a`, which has length `n`. `avg` and `sum` point to variables that the function should modify. Unfortunately, the function contains several errors; find and correct them

```
1 void avg_sum(double a[], int n, double *avg, double *sum)
2 {
3     int i;
4
5     sum = 0.0;
6     for (i = 0; i < n; i++)
7         sum += a[i];
8     avg = sum / n;
9 }
```

4. **K.K.11.4:** Write the following function

```
void swap(int *p, int *q);
```

When passed the addresses of two variables, **swap** should exchange the values of the variables:

```
swap(&i, &j); /* Exchanges values of i and j */
```

5. **K.K.11.5:** Write the following function

```
void split_time(long total_sec, int *hr, int *min, int *sec);
```

total_sec is a time represented as the number of seconds since midnight. **hr**, **min** and **sec** are pointers to variables in which the function will store the equivalent time in hours (0-23), minutes (0-59) and seconds (0-59), respectively.