CSC 209 Review 5 Solution

August 21, 2020
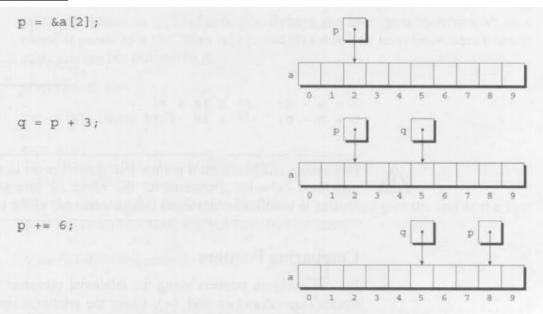
1. a) 14

   b) 34

   c) 4

   d) true

   e) false

   Notes

   - **Pointer Arithematic**
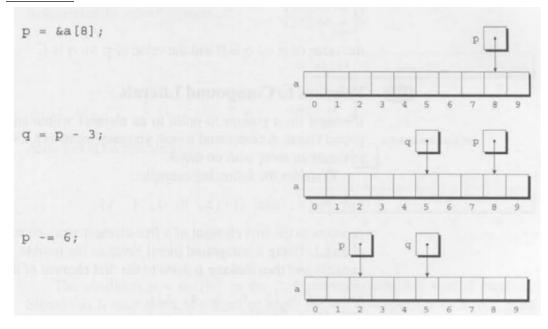   - Adding an integer to a pointer

     Example

– Subtracting an integer from a pointer

Example


```
p = &a[8];
```

```
q = p - 3;
```

```
p -= 6;
```

– Subtracting one pointer from another

Example


```
p = &a[5];
q = &a[1];
```

```
i = p - q;    /* i is 4 */
i = q - p;    /* i is -4 */
```

• **Comparing pointers**

  – Can compare pointers using relational operators (i.e. $<, <=, >, >=$) and the equality operators (i.e. $==, !=$)
  – Returns 1 if `true` and 0 if `false`

  Example

  ```
  p = &a[5];
  q = &a[1];
  ```

  p $<=$ q is 0 and p $>=$ q is 1

2. `low` and `high` are memory addresses.

   So, `low` + `high` is out of bound, and it could potentially point to an undesirable or wrong value.

   To fix this, we subtract the from high value to the low value:

$$\texttt{middle} = \frac{\texttt{low} + \texttt{high}}{2} \tag{1}$$