Commenting compound statements such as if blocks is somewhat more complicated than commenting simple statements such as printf statements.

(1) In the event that the if block has only an if clause, and no other clauses, then this is an example of the appropriate form:

```c
/*
 * Idiotproof the appetizer item code.
 */
if ((appetizer_item_code != no_item_code) &&
    (appetizer_item_code != antipasto_item_code) &&
    (appetizer_item_code != tomato_bruschetta_item_code) &&
    (appetizer_item_code != cheese_crostini_item_code)) {

    /*
    * Output the idiotproof error message for
    * the appetizer item code.
    */
    printf("ERROR: unknown appetizer item code %d.\n",
            appetizer_item_code);

    /*
    * Exit the program because the appetizer item code is
    * invalid.
    */
    exit(program_failure_code);
} /* if ((appetizer_item_code != no_item_code) && ...) */
```

Notice:

- The comment preceding the entire if block describes the purpose of the if block as a whole.
- The block close of the if block is immediately followed, on the same line, by:
  - a single space, followed by
  - the comment open delimiter, followed by
  - a single space, followed by
  - the entire if statement, EXCLUDING the block open, followed by
  - the comment close delimiter.
- The comment on the same line as the block close is **ABSOLUTELY FORBIDDEN** to continue on to the next line.
- In the event that the if condition is very long, then in the comment on the associated block close line, you can use the first part of the condition, followed by an ellipsis (three periods).
- The comments for the statements inside the if clause are indented farther, so that the asterisk at the beginning of each line of the comment lines up with the statement that the comment describes.
- There is no comment immediately preceding each block close, because block closes are not statements.
In the event that the if block has both an if clause and an else clause, but no others:

```c
/*
 * The entree price is based on the entree item and the entree size.
 */
if (entree_item_code == no_item_code) {
    /*
     * The customer bought no entree.
     */
    entree_price = no_item_price;
} /* if (entree_item_code == no_item_code) */
else if (entree_item_code == beef_pho_code) {
    /*
     * The beef rigatoni price is based on which meal this is.
     */
    if (meal_code == lunch_code) {
        /*
         * The entree price is the beef rigatoni lunch price.
         */
        entree_price = beef_rigatoni_lunch_price;
    } /* if (meal_code == lunch_code) */
    else {
        /*
         * The entree price is the beef rigatoni dinner price.
         */
        entree_price = beef_rigatoni_dinner_price;
    } /* if (meal_code == lunch_code)...else */
} /* if (entree_item_code == beef_rigatoni_code) */
else if (entree_item_code == chicken_parmigiani_code) {
    /*
     * The chicken parmigiani price is based on which meal this is.
     */
    if (meal_code == lunch_code) {
        /*
         * The entree price is the chicken parmigiani lunch price.
         */
        entree_price = chicken_parmigiani_lunch_price;
    } /* if (meal_code == lunch_code) */
    else {
        /*
         * The entree price is the chicken parmigiani dinner price.
         */
        entree_price = chicken_parmigiani_dinner_price;
    } /* if (meal_code == lunch_code)...else */
} /* if (entree_item_code == chicken_parmigiani_code) */
else if (entree_item_code == vegetarian_lasagna_code) {
    /*
     * The vegetarian lasagna price is based on which meal this is.
     */
    if (meal_code == lunch_code) {
        /*
         * The entree price is the vegetarian lasagna lunch price.
         */
        entree_price = vegetarian_lasagna_lunch_price;
    } /* if (meal_code == lunch_code) */
    else {
        /*
         * The entree price is the vegetarian lasagna dinner price.
         */
        entree_price = vegetarian_lasagna_dinner_price;
    } /* if (meal_code == lunch_code)...else */
} /* if (entree_item_code == vegetarian_lasagna_code) */
else if (entree_item_code == linguini_and_clams_item_code) {
    /*
     * The entree price is the linguini and clams dinner price.
     */
    entree_price = linguini_and_clams_dinner_price;
} /* if (entree_item_code == linguini_and_clams_item_code) */
```
Notice that, in addition to the properties of just an if clause, above:

- The comment preceding the entire if block describes the purpose of the if block as a whole, not just the purpose of the if clause.
- There is no comment immediately preceding the else statement.
- The else statement is immediately followed, on the same line, only by a blank space and then the block open.
- The block close for the else statement is immediately followed, on the same line, by:
  - a single space, followed by
  - the comment open delimiter, followed by
  - a single space, followed by
  - the entire if statement, EXCLUDING the block open, followed by
  - three periods (that is, an ellipsis), followed by
  - the keyword else, to indicate that this is the end of the else clause, followed by
  - the comment close delimiter.
- Again, the comment on the same line as the block close is ABSOLUTELY FORBIDDEN to continue on to the next line.
- Again, in the event that the if condition is very long, then in the comment on the associated block close line of the else clause (that is, the final block close of that if block), you can use the first part of the condition, followed by an ellipsis (three periods).
- Again, the comments for the statements inside the else clause are indented farther, so that the asterisk at the beginning of each line of the comment lines up with the statement that the comment describes.
- Again, there is no comment immediately preceding each block close, because block closes are not statements.
In the event that the if block has both an if clause and one or more else if clauses, but no else clause:

```c
/*
 * Output the appetizer name and price.
 */
if (appetizer_item_code == antipasto_code) {
    /*
     * Output the antipasto name and price.
     */
    printf(" Antipasto: $%5.2f\n", appetizer_price);
} /* if (appetizer_item_code == antipasto_code) */
else if (appetizer_item_code == tomato_bruschetta_code) {
    /*
     * Output the tomato bruschetta name and price.
     */
    printf(" Tomato Bruschetta: $%5.2f\n", appetizer_price);
} /* if (appetizer_item_code == tomato_bruschetta_code) */
else if (appetizer_item_code == cheese_crostini_code) {
    /*
     * Output the cheese crostini name and price.
     */
    printf(" Cheese Crostini: $%5.2f\n", appetizer_price);
} /* if (appetizer_item_code == cheese_crostini_code) */
```

Notice that, in addition to the properties of just an if clause, above:

- Again, the comment preceding the entire if block describes the purpose of the if block as a whole, not just the purpose of one of the if block’s individual clauses.
- There is no comment immediately preceding any of the else if statements.
- The condition in the comment immediately following and on the same line as each else if clause’s block close is the condition of the associated else if statement.
- The comment following, and on the same line as, each clause’s block close **DOESN’T** include the keyword else.
- Again, the comment on the same line as the block close is **ABSOLUTELY FORBIDDEN** to continue on to the next line.
- Again, in the event that the if condition or an else if condition is very long, then in the comment on the associated block close line of that clause, you can use the first part of the condition, followed by an ellipsis (three periods).
- Again, the comments for the statements inside the else if clause are indented farther, so that the asterisk at the beginning of each line of the comment lines up with the statement that the comment describes.
- Again, there is no comment immediately preceding each block close, because block closes are not statements.
(4) In the event that the if block has an if clause, one or more else if clauses, as well as an else clause:

```c
/*
 * Output the drink on the bill.
 */
if (drink_item_code == coffee_code) {
    /*
     * Output coffee as the drink.
     */
    printf(" Coffee: $%5.2f\n",
            drink_price);
} /* if (drink_item_code == coffee_code) */
else if (drink_item_code == soda_code) {
    /*
     * Output soda as the drink.
     */
    printf(" Soda: $%5.2f\n",
            drink_price);
} /* if (drink_item_code == soda_code) */
else {
    /*
     * Output tea as the drink.
     */
    printf(" Tea: $%5.2f\n",
            drink_price);
} /* if (drink_item_code == ice_tea_code)...else */
```

Notice that, in addition to the properties of all of the previous cases:

- The comment preceding the entire if block describes the purpose of the if block as a whole, not just the purpose of the if clause.
- The condition in the comment immediately following and on the same line as the else clause’s block close is the condition of the final else if clause, followed by an ellipsis and the keyword else.