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 age category.
 */
if ((age_category_code != adult_code) &&
    (age_category_code != child_code)) {

    /*
     * Output the idiotproof error message for the age category.
     */
    printf("ERROR: unknown age category code %d.\n",
            age_category_code);
    /*
     * Exit the program because the age category is invalid.
     */
    exit(program_failure_code);
} /* if ((entree_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.
(2) In the event that the if block has both an if clause and an else clause, but no other clauses:

```c
/*
 * Idiotproof the drink item code.
 */
if (age_category_code == adult_code) {
    /*
     * Idiotproof the drink item code for an adult.
     */
    if ((drink_item_code != no_item_code) &&
        (drink_item_code != coffee_code) &&
        (drink_item_code != ice_tea_code) &&
        (drink_item_code != soda_code)) {
        /*
         * Output the idiotproof error message for the drink item
         * for an adult.
         */
        printf("ERROR: unknown drink item code \%d for an adult.\n",
                drink_item_code);
        /*
         * Exit the program because the drink item is invalid
         * for an adult.
         */
        exit(program_failure_code);
    } /* if ((drink_item_code != no_item_code) && ...) */
} /* if (age_category_code == adult_code) */
else {
    /*
     * Idiotproof the drink item code for a child.
     */
    if ((drink_item_code != no_item_code) &&
        (drink_item_code != soda_code) &&
        (drink_item_code != lemonade_code) &&
        (drink_item_code != milk_code)) {
        /*
         * Output the idiotproof error message for the drink item
         * for a child.
         */
        printf("ERROR: unknown drink item code \%d for a child.\n",
                drink_item_code);
        /*
         * Exit the program because the drink item is invalid
         * for a child.
         */
        exit(program_failure_code);
    } /* if ((drink_item_code != no_item_code) && ...) */
} /* if (age_category_code == adult_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.
(3) In the event that the if block has both an if clause and one or more else if clauses, but no else clause:

```c
/*
 * Determine the side dish price.
 */
if (side_dish_item_code == no_item_code) {
    /*
     * The side dish price is the price of no item (i.e., zero).
     */
    side_dish_price = no_item_price;
} /* if (side_dish_item_code == no_item_code) */
else if (side_dish_item_code == fries_code) {
    /*
     * The side dish price is the price of fries.
     */
    side_dish_price = fries_price;
} /* if (side_dish_item_code == fries_code) */
else if (side_dish_item_code == rice_code) {
    /*
     * The side dish price is the price of rice.
     */
    side_dish_price = rice_price;
} /* if (side_dish_item_code == rice_code) */
else if (side_dish_item_code == onion_rings_code) {
    /*
     * The side dish price is the price of onion rings.
     */
    side_dish_price = onion_rings_price;
} /* if (side_dish_item_code == onion_rings_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:

/*
 * Output the side dish on the bill.
 */
if (side_dish_item_code == fries_code) {
    /*
     * Output that the side dish as fries.
     */
    printf(" Fries: $%5.2f\n", side_dish_price);
} /* if (side_dish_item_code == fries_code) */
else if (side_dish_item_code == rice_code) {
    /*
     * Output that the side dish as rice.
     */
    printf(" Rice: $%5.2f\n", side_dish_price);
} /* if (side_dish_item_code == rice_code) */
else if (side_dish_item_code == onion_rings_code) {
    /*
     * Output that the side dish as onion rings.
     */
    printf(" Onion Rings: $%5.2f\n", side_dish_price);
} /* if (side_dish_item_code == onion_rings_code) */
else {
    /*
     * Output that the default side dish.
     */
    printf(" This wouldn’t actually happen in your code!\n");
} /* if (side_dish_item_code == onion_rings_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.