In a small town, the lines at the local bank were consistently very long. The manager of the bank discussed the problem with her tellers and discovered the reason for the long lines – many students have been saving their spare pennies and have been cashing them in for larger denominations of money. In order to reduce the amount of time the customers spent waiting in line, the tellers requested a user-friendly calculator.

The manager has decided to hire your group to write an application that allows her tellers to enter a number of pennies. The application then calculates the number of dollars, quarters, dimes, nickels, and pennies the customer will receive for cashing in the pennies.

The owner of a local health club added a snack bar to her club. The snack bar offered low-fat items, such as fruit and herbal teas, along with high-fat items, such as pizza, chocolate, and milk shakes. Unfortunately, by noon each day, the snack bar was sold out of all of the high-fat items. To encourage her patrons to eat healthier and to motivate them to exercise more, the owner decided to calculate the fat calories and the fat percentage for each food item that the snack bar sold.

Your group has been hired to create an application that allows the owner to enter a specific food's total calories and grams of fat. The application then calculates and displays the food's fat calories (the number of calories attributed to fat) and its fat percentage (the ratio of the food's fat calories to its total calories). The number of fat calories in a food is determined by multiplying the number of fat grams contained in the food by the number nine, because each gram of fat contains nine calories. To calculate the fat percentage, the food's fat calories are divided by its total calories and the result is multiplied by 100. The message "Low-fat food" should be displayed if the fat percentage is less than or equal to 30 %; otherwise, the message "High-fat food" should be displayed.

"Serving All the Food That's Fit to Eat"

You own a small, intimate, but definitely upscale restaurant in Norfolk called the Shark's Fin. You have ten tables that are arranged in rows of 3, with one ten-top (large table holding ten people). Three of your tables seat 6 people, three sear four, and three seat two only. When people come in, they are assigned a table or told to wait. You get their name, number in the party. They are either assigned a table (you enter the time) or told how long they have to wait (total service time is approximately 45 minutes). Notice that table assignments depend on the number in the party. You don't assign a group of 5 to a table of 6 and you don't assign a group of 2 to a table of 4. You receive bills from the waiters approximately 5 minutes before they leave. The guest pays when you check him/her out at the door. You need to account for 6 types of transactions and/or displays:

1. Arrival of guest
2. Assignment to table (or display of approximate waiting time if none is available).
3. Receipt of bill from waiter
4. Release of table by guest and receipt of payment (displaying the pending bill)
5. Display of waiting list
6. Display of tables (occupied or not occupied) [A diagram would be a nice extra]
7.

Notice that items 1, 2, 4 and 5 will require you to enter the time of day. Notice that item 4 should automatically start up item 2 with the next party of the appropriate size.