

```
/*
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Course: CSCI-135
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Assignment: HW5.6
```

```
Replaces a character of a string at a given position.
@param str the string where the replacement takes place
@param position the position of the character to be replaced
@param replacement the replacement string
@return str with the character at the position changed to
the replacement string, or the original string
if position was not valid.
*/
```

```
// Q1
```

```
double read_double(string prompt){
    cout << prompt << ": ";
    double value;
    cin >> value;
    return value;
}
```

```
int main(){
    double price = read_double("First item");
    price = price + read_double("Next item");
    double rate = read_double("Tax rate in percent");
    double tax = price * rate / 100;
    cout << "Amount due: " << (price + tax) << endl;
}
```

```
// Q2
```

```
string replace_at(string str, int position, string replacement)
{
```

```
    if (position < str.length()) {
        string firstHalf = str.substr(0, position);
        string secondHalf = str.substr(position + 1, str.length() - position - 1);

        string newWord = firstHalf + replacement + secondHalf;

        return newWord;
    }
    else {
        return str;
    }
}
```

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/*
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    TESTING
```

```
    string a = excellent
    replace_at(excellent, 5, p)
    expecting excelpent
    (
```

```
*/
```

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}
```

```
// Q3
```

```
int find_occurrence(string str, string ch, int n)
```

```

{
    int currCount = 0;

    for (int i = 0; i < str.length(); i++) {
        if (str.substr(i, 1) == ch) {
            currCount += 1;
            if (currCount == n) {
                return i;
            }
        }
    }

    return -1;
}

```

// Q4

```

string smart_quotes(string str)
{
    string result = str;
    string left_quote = "\"";
    string right_quote = "\"";
    int num_quotes = 0;

    for (int i = 0; i < str.length(); i++) {
        if (str.substr(i, 1) == "\\") {
            num_quotes += 1;
        }
    }

    if (num_quotes % 2 == 1) {
        num_quotes -= 1;
    }

    for (int i = 1; i <= num_quotes; i++) {
        int pos = find_occurrence(result, "\\\"", 1);
        if (i % 2 == 1) {
            result = replace_at(result, pos, left_quote);
        }
        else {
            result = replace_at(result, pos, right_quote);
        }
    }
    return result;
}

```