Software Development Method
1. Specify the problem requirements
2. Analyze the problem
3. Design the algorithm to solve the problem
4. Implement the algorithm
5. Test and verify the completed program
6. Maintain and update the program

Algorithms
• Step-by-step procedure for solving a problem
• Be as specific as possible – include all steps
• Example – doing your laundry

Calculate Tax on an Item
• Problem
• Analysis
• Algorithm design
• Implementation
• Testing
• Maintenance

#A program to calculate tax and total cost for an item.
#determine rate of taxation
#ask user for the cost of the item
#calculate the tax
#calculate total cost
#display the results
# Name: Sami Rollins
# A program to calculate tax and total cost for an item.

# determine rate of taxation
TAX_RATE = .0825

# ask user for the cost of the item
cost = input("Enter item cost: ")

# calculate the tax
tax = cost*TAX_RATE

# calculate total cost
total = cost+tax

# display the results
print "Cost: ", cost
print "Tax : ", tax
print "Total: ", total
Output

```python
#display the results
print "Cost: ", cost
print "Tax : ", tax
print "Total: ", total
```

• Display the results for the user

Exercises

1. Write the algorithm for a program that takes as input the number of miles a car has traveled and the number of gallons of gas the car has consumed and calculates the number of miles the car can travel on one gallon of gas

2. Write the program for the algorithm you just generated using the tax program as a template