**1.**

#Make a Dictionary

prices = {'-': 0,

'Oil change': 35,

'Tire rotation': 19,

'Car wash': 7,

'Car wax': 12

}

first\_service = ""

second\_service = ""

total = 0

print("Davy's auto shop services")

print('Oil change -- $35')

print ('Tire rotation -- $19')

print ('Car wash -- $7')

print ('Car wax -- $12\n')

first\_service = input("Select first service: \n")

second\_service = input('\n'"Select second service: \n")

print('\n')

print("Davy's auto shop invoice"'\n')

# Change inputs to dictionary items

if first\_service in prices:

first\_service == first\_service

else:

#No Service must have a numerical value, or it will cause an error

first\_service == '-'

if second\_service in prices:

second\_service == second\_service

else:

second\_service = '-'

if first\_service == 'Oil change':

print('Service 1: Oil change, $35')

elif first\_service == 'Tire rotation':

print('Service 1: Tire rotation, $19')

elif first\_service == 'Car wash':

print('Service 1: Car wash, $7')

elif first\_service == 'Car wax':

print('Service 1: Car wax, $12')

else:

print('Service 1: No service')

if second\_service == 'Oil change':

print('Service 2: Oil change, $35')

elif second\_service == 'Tire rotation':

print('Service 2: Tire rotation, $19')

elif second\_service == 'Car wash':

print('Service 2: Car wash, $7')

elif second\_service == 'Car wax':

print('Service 2: Car wax, $12')

else:

print('Service 2: No service')

# find Sum for the total

total = prices[first\_service] + prices[second\_service]

print('\nTotal: $%d' % (total))

**1A.** The best practices I used were the following:

* In the face of ambiguity, refuse the temptation to guess.
* If the implementation is hard to explain, it’s a bad idea. If the implementation is easy to explain, it’s a good idea.
* Simple is better than complex. Complex is better than complicated.
* Explicit is better than implicit
* Beautiful is better than Ugly.

**1B**. I used the problem-solving pseudocode to help me finish this code. Since I had two services, it helped me make sure I handled the first service and then the second service. I then brought both services together by adding each one’s end value to each other to receive the total for the service. I added comment characters into my algorithm in order to leave notes for some of the major key points of my algorithm.

**1C**: As you can see in my input and output beneath this statement, my algorithm is simple, easy to understand, and it completes the task required. I chose the if and else structure because it allowed the program to be ready for different inputs from the customer and the program had set outputs for each type of input.

INPUT: Oil change

Dragon

OUTPUT:

Davy's auto shop services

Oil change -- $35

Tire rotation -- $19

Car wash -- $7

Car wax -- $12

Select first service:

Select second service:

Davy's auto shop invoice

Service 1: Oil change, $35

Service 2: No service

Total: $35

**2.**

The topic I chose in the beginning of the school year was Cybersecurity because I developed an interest for it due to my current type of work in law enforcement. “Cybersecurity refers to a set of techniques used to protect the integrity of an organization’s security architecture and safeguard its data against attack, damage or unauthorized access” (2). These techniques range from the use of software programs to the physical infrastructure surrounding the data server. A software program like Norton Security is used to protect computer systems from viruses and malware. Programs like this one is frequently given updates for better protection, but, with better protection, brings more stronger cyberattacks in this age of technology. These attacks can obtain a person or business’ sensitive information to be sold on one of the multiple markets of the dark web.

The future of cyber security goes hand in hand with this current age of technology. The current age of technology has forcibly evolved basic appliances in the world by giving these appliances access to the internet and networks. Gaining access to the internet and networks, many items in the world are susceptible to viruses, malware, and hackers. These items will need to be updated with future developments from the world of cyber security to protect these common items from cyber-attacks. An example of this type of cyber-attack was documented on CNN (Cable News Network) in December of 2018. In Houston, a family’s digital baby monitor had its network hacked into by an unknown individual and that individual threated to kidnap the family’s newborn baby. The hacker was able to monitor the family by any wireless camera system connected with the baby monitor (3). The attacks, like the one previously listed, are orchestrated by individuals, who have the knowledge and experience with computer software.

The future development in cyber security needs more people to study and gain experience in computer software. Once completing these studies and experiences, these people could obtain IT jobs from many companies and/or governments. A few types of these jobs are in the following list: Information Security Analyst, Lead Software Security Engineer, Chief Security Information Officer, Security Architect, Penetration Tester, Information Security Crime Investigator (1). Cyber careers are created and paid to individuals to protect digital information and data. Depending on an individual’s skill level and experience, the individual can obtain cyber jobs between entry level to high level positions. An individual can increase their skills and experience in cyber security by getting a degree in a field of computer software, testing to obtain certificates in the cyber security field, and working with computers at prior jobs. The skills to use computers is currently on its way to be a necessity in an individual’s daily life and this necessity will open new high paying jobs for individuals with a background in the computer software field.

**REFERENCES:**

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3. *Couple shaken after baby monitor hacked - CNN Video*. [online] Available at: https://www.cnn.com/videos/us/2018/12/19/baby-monitor-hacked-threat-houston-vpx.hln [Accessed 3 Oct. 2019].