**Answers to Lab Programming Problems**

**Programming 1**

# Initialize variables for bugs and

# total number of bugs collected.

bugs = 0

total = 0

# Get number of bugs collected each day

for day in range(5):

bugs = int(input('Enter the number of bugs collected today: '))

total += bugs

# Display the total number of bugs collected.

print ('Total bugs collected: ', total)

**Programming 2**

# Initialize variables for bugs and

# total number of bugs collected.

bugs = 0

total = 0

numdays = 0

daycount = 0

# Get number of bugs collected each day

numdays = int(input('For how many days do you want to enter bug count? '))

for day in range(numdays):

daycount = daycount + 1

print('Get the bug count for day: ',daycount)

bugs = int(input('Enter the number of bugs collected '))

total += bugs

# Display the total number of bugs collected.

print ('Total bugs collected: ', total)

**Programming 3**

# Declare and initialize a variable

# for the calories burned per minute.

caloriesPerMinute = 4.2

# Declare variables for the number of calories burned,

# and the number of minutes.

caloriesBurned = 0.0

minutes = 0

print ('Minutes\t\tCalories Burned')

print ('-------------------------------')

# Execute the for loop to display calories burned.

for minutes in range(10, 31, 5):

caloriesBurned = caloriesPerMinute \* minutes

print (minutes, "\t\t", caloriesBurned)

**Programming 4**

# Constants for the increase in tuition per year,

# and the starting tuition amount.

INCREASE\_PER\_YEAR = 0.03

STARTING\_AMOUNT = 30000.0

# Declare a variable to store the tuition.

tuition = STARTING\_AMOUNT

# Calculate and print amount of increase each year.

print ('Year\t Projected Tuition (per Semester)')

print ('------------------------------------------')

for year in range(5):

tuition += (tuition \* INCREASE\_PER\_YEAR)

print ((year + 1), '\t', '$', \

format(tuition, '.2f'))

**Programming 5**

# Get the person's age.

age = int(input('Enter age: '))

# Determine if the person is an infant, child,

# teenager, or adult, and display the result.

if age <= 1:

print('Infant')

elif age > 1 and age < 13:

print('Child')

elif age > 13 and age < 20:

print('Teenager')

else:

print ('Adult')

**Programming 6**

# Declare variables to store the budget amount,

# amount spent, difference, and total.

budget = 0.0

difference = 0.0

spent = 1.0 #initialize for while loop

total = 0.0

# Get the budgeted amount from the user.

budget = float(input('Enter amount budgeted for the month: '))

# Get the total amount spent from the user.

while spent != 0:

spent = float(input('Enter an amount spent(0 to quit): '))

#add to total

total += spent

# Determine whether the user is over or under budget,

# and display the result.

print ('Budgeted: $', format(budget, '.2f'))

print ('Spent: $', format(total, '.2f'))

if budget > total:

difference = budget - total

print ('You are $', format(difference, '.2f'), \

'under budget. WELL DONE!')

elif budget < total:

difference = total - budget

print ('You are $', format(difference, '.2f'), \

'over budget. PLAN BETTER NEXT TIME!')

else:

print ('Spending matches budget. GOOD PLANNING!')

**Programming 7**

number = 7

guess = -1

count = 0

**print**("Guess the number!")

**while** guess != number:

guess = int(input("Is it... "))

count = count + 1

**if** guess == number:

**print**("Hooray! You guessed it right!")

**elif** guess < number:

**print**("It's bigger...")

**elif** guess > number:

**print**("It's not so big.")

**if** count > 3:

**print**("That must have been complicated.")

**else**:

**print**("Good job!")