Programming Fundamentals Assignment 1

Question 1

#Declaration Of Variables

```
DECLARE UserName, F_Name, Gender, Email, Password, ShipmentLocation, ShipMeth,
selectedPaymentMethod, ExpDate, orderConfirmed, productName, Confirmation : STRING
DECLARE productPrice : REAL
DECLARE isNewUser : BOOLEAN
DECLARE ContactNum, CardNum, CVC, productID : INTEGER
```

#Initialization Of Variables

```
UserName, F_Name, Gender, Email, Password, ShipmentLocation, ShipMeth,
selectedPaymentMethod, ExpDate, = " "
orderConfirmed = "no"
ContactNum, CardNum, CVC = 0
Confirmation = "no"
```

#Login/Register

```
isNewUser = input("Are you a new user? ")
IF isNewUser = true
        #For new registrations
        print("You are required to register")
        UserName = input("Set your username: ")
        F_Name = input("Please enter your full name: ")
        Gender = input("What is your gender: ")
        ContactNum = input("Enter your mobile number: ") #Assuming no special characters like
"-" are entered.
        Email = input("Enter your email address: ")
        Password = input("Please set a password: ")

ELSE
        #For login
        UserName = input("Enter your username: ")
        Password = input("Enter your password: ")

ENDIF
```

#Cart Review

print(“Item added to your cart is as follows: ” , productID , “ “ , productName , “ “ , productPrice)

#Address Selection

ShipmentLocation = input(“Please enter an address where the item is to be shipped: “)

#Ship Method

ShipMeth = input(“Please select a shipping method: ”)

#Payment Method

selectedPaymentMethod = input(“Please select a payment method: ”)

```
IF selectedPaymentMethod = “credit card”
        print(“You have selected Credit Card Payment”)
        CardNum = input(“Enter your credit card number: ”)
        ExpDate = input(“Enter the expiration date: ”)
        CVC = input(“Enter the CVC number of your credit card: ”)
ELSE
        print(“You have selected Cash Payment”)
ENDIF
```

Confirmation = input(“Are you sure to place the order? Answer in yes or no. ”)

```
IF Confirmation = true
        orderConfirmed = “yes”
        print (“Your order has been placed”)
ELSE
        print(“Order placement canceled”)
ENDIF
```

Question 2

print(“Enter Credit Score(CS) , monthly income (MI), Loan Amount(LA)”)

```
CS = input
MI = input
LA = input

IF CS >= 700
        IF MI >= 500
                IF LA <= 5000
                        LA = “approved”
                        print(“Loan Amount Decision :” , LA)
                ELSE
                        LA = “denied”
        ELSE
                LA = “denied”
ELSE
        LA = “denied”
        print(“Loan Amount Decision :”, LA)
```

Question 3

```
CONST Lays = 30
CONST Juice = 20
```

```
CONST Drink = 100
selectedSnack = “ ”
print(“We have the following available: Lays (Rs. 30) , Juice (Rs. 20), and Drink (Rs. 100)”)
selectedSnack = input(“Please select a snack from lays, juice, or drink”)
userInserted = 0
IF selectedSnack = “lays”
        userInserted = input(“Please insert money to buy snacks”)
        IF userInserted >= Lays
                print(“Dispensing snack”)
        ELSE
                moneyNeeded = Lays - userInserted
                print(“Please insert more money: ” , moneyNeeded)

IF selectedSnack = “juice”
        userInserted = input(“Please insert money to buy snacks”)
        IF userInserted >= Juice
                print(“Dispensing snack”)
        ELSE
                moneyNeeded = Juice - userInserted
                print(“Please insert more money: ” , moneyNeeded)

IF selectedSnack = “drink”
        userInserted = input(“Please insert money to buy snacks”)
        IF userInserted >= Drink
                print(“Dispensing snack”)
        ELSE
                moneyNeeded = Drink - userInserted
                print(“Please insert more money: ” , moneyNeeded)
```

Question 4

```
daysOverdue = 0
lateFee = 0
```

```
daysOverdue = input(“Insert how many days the book has been overdue”)

IF daysOverdue >= 1 AND daysOverdue <=  7
        lateFee = daysOverdue * 0.25

IF daysOverdue >= 8 AND daysOverdue <= 14
        lateFee = (7* 0.25) + ((daysOverdue-7) * 0.50)

IF daysOverdue >= 15 AND daysOverdue <= 30
        lateFee = (7 * 0.25) + (7 * 0.5) + ((daysOverdue - 14) * 1)

IF daysOverdue > 30
        lateFee = (7 * 0.25) + (7 * 0.5) + (7 * 1) + ((daysOverdue - 21) * 2)

print(“Late fee due is: ” , lateFee)
```

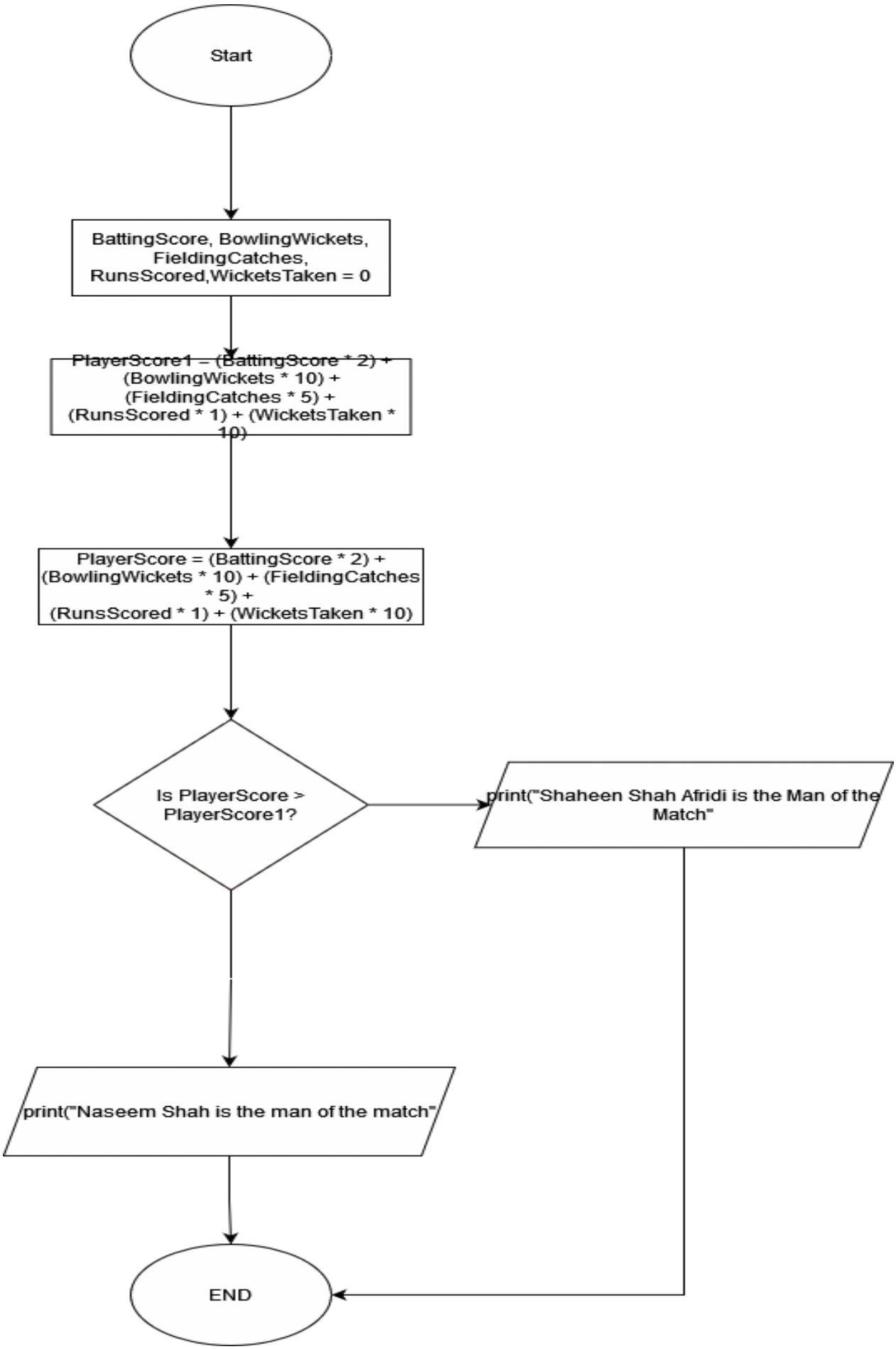
Question 5

```
CONST regBase = 2.00
CONST latteBase = 3.50
```

```
CONST capBase = 4.00
CONST Milk = 0.50
CONST Sugar = 0.25
CONST WhippedCream = 0.75

totalCost = 0.00

typeCoffee = input(“What type of coffee would you like from Regular, Latte or
Cappuccino?”)

IF typeCoffee = “Regular”
        totalCost = totalCost + regBase

IF typeCoffee = “Latte”
        totalCost = totalCost + latteBase

IF typeCoffee = “ Cappuccino”
        totalCost = totalCost + capBase

sizeCoffee = input(“What size coffee would you like?”)

IF sizeCoffee = “Small”
        totalCost = totalCost

IF sizeCoffee = “Medium”
        totalCost = totalCost + 0.50

IF sizeCoffee = “Large”
        totalCost = totalCost + 1.00

decisionAdd = input(“Do you want any add ons?”)
IF decisionAdd = “Yes”
        addOn = input(“Which add on do you want?”)
        IF addOn = “Milk”

                totalCost = totalCost + Milk
```

```
        IF addOn = “Whipped Cream”
                totalCost = totalCost + WhippedCream

        IF addOn = “Sugar”
                totalCost = totalCost + Sugar

print(“The total cost of your coffee is: ”, totalCost)
```

Question 6


Start
BattingScore, BowlingWickets, FieldingCatches, RunsScored,WicketsTaken = 0
PlayerScore1 = (BattingScore * 2) + (BowlingWickets * 10) + (FieldingCatches * 5) + (RunsScored * 1) + (WicketsTaken * 10)
PlayerScore = (BattingScore * 2) + (BowlingWickets * 10) + (FieldingCatches * 5) + (RunsScored * 1) + (WicketsTaken * 10)
Is PlayerScore > PlayerScore1?
print("Shaheen Shah Afridi is the Man of the Match"
print("Naseem Shah is the man of the match"
END

Question 7a

```
a = input("What is the value of a?")
b = input("What is the value of b?")
c = input("What is the value of c?")


IF a = 0
        print("Equation cannot be solved by quadratic formula")

ELSE
        Discrim = (b * b) - (4 * a * c)
        IF Discrim > 0
                print("There are two x values")
                x1 = (-1 * b) + ((b * b) - (4 * a * c)) /( 2 * a)
                x2 = (-1 * b) - ((b * b) - (4 * a * c)) /( 2 * a)
                print("The values are: " , x1 , " and " , x2)

        IF Discrim = 0
                print("There is only one value of x")
                x1 = (-1 * b) + ((b * b) - (4 * a * c)) /( 2 * a)
                print("The value is: " , x1)

        IF Discrim < 0
                print("There are no real x values")
```

Question 7b

```
userWeight = input("What is your weight?")
userHeight = input("What is your height?")

BMI = userWeight / (userHeight * userHeight)
IF BMI < 18.5
        print("You are underweight and your BMI is " , BMI)
```

```
IF BMI >= 18.5 AND BMI <= 24.9
        print(“You are normal weight and your BMI is ” , BMI)

IF BMI >= 25 AND BMI <= 29.9
        print(“You are overweight and your BMI is ” , BMI)

IF BMI >=30
        print(“You are obese and your BMI is ” , BMI)
```

Question 8

```
SharesBought = 900
costInitial = 49.50

paidHassan = SharesBought * costInitial
paidCommission = (paidHassan * (3/100))

SharesSold = 1000
costFinal = 56.90

soldHassan = SharesSold * costFinal
soldCommission = (soldHassan * (1/100))

profit = soldHassan - (paidHassan + paidCommission + soldCommission)

IF profit > 0
        print(“Hassan made a profit of:” , profit)

ELSE
        print(“Hassan lost:” , profit)
```

Question 9

```
cookiesNum = input(“Input the amount of cookies you want to make:”)
sugar = 2
butter = 1
flour = 2.15

print(“For “ , cookiesNum , “ amount of cookies to be made we need:” , cookiesNum * 2 , “ cups of sugar, ” , cookiesNum * 1, “cups of butter and ” , cookiesNum * flour , “ cups of flour”
```

Question 10

```
amountDue = 0
amountIn = input(“Input how much the customer has paid in cents: “)

Dollars = 0
Quarters = 0
Dimes = 0
Nickels = 0
Pennies = 0

IF amountIn >= 100:
        Dollars = Dollars + 1
        amountIn = amountIn - 100
IF amountIn >= 25
        Quarters = Quarters + 1
        amountIn = amountIn - 25
IF amountIn >= 10
        Dimes = Dimes + 1
        amountIn = amountIn - 10
IF amountIn >= 5
        Nickels = Nickels + 1
```

```
        amountIn = amountIn - 5
IF amountIn >= 1 AND amountIn < 5
        Pennies = Pennies + 1
        amountIn = amountIn - 1


print(“The amount to return is:” , Dollars , “ Dollars, ” , Quarters , “ Quarters, “ , Dimes , “ Dimes, “ , Nickels , “ Nickels and, “ Pennies , “ Pennies.”)
```

Question 11

Running 10:

```
dN = 0
bR = “ “
oR = “ “
dN = 10
temp = 10
remainder = 0
character = ‘0’
temp = 5
bR = “ 0”
temp = 5
remainder = 1
character = ‘1’
Temp = 2.5
bR = “ 01”
Temp = 2.5
Remainder = 1
Character = ‘1’
Temp = 1.25
bR = “ 011”
Temp = 1.25
Remainder = 5
```

Character = ‘5’
Temp = 0.625
bR = “ 0115”

Running 60:

dN = 0
bR = “”
oR = “”
Temp = 60
Remainder = 0
Character = ‘0’
Temp = 30
bR = “0”

Temp = 30
Remainder = 0
Character = ‘0’
Temp = 15
bR = “00”

Temp = 15
Remainder = 1
Character = ‘1’
Temp = 15/2
bR = “001”

Running 65:

dN = 0
bR = “”
oR = “”
Temp = 65
Remainder = 1
Character = ‘1’

Temp = 32.5
bR = “1”

Temp = 32.5
Remainder = 1
Characeter = ‘1’
Temp = 16.25
bR = “11”