ID: 102827175

Name: Duncan Macdonald

**Selection in Python**

**If statement**

If condition :

Statement

Statement

Statement

**Relational operators**

> Greater than

< less than

>= greater than or equal to

<= less than or equal to

== equal to

Boolean expressions

A > B is A greater than B ( True or false)

A < B is A less than B ( True or false)

A >= B is A greater than or equal to B ( True or false)

A <= B is A less than or equal to B ( True or false)

A == B is A equal to B ( True or false)

A != B is A not equal to B

A = 1

B = 3

C = 1

A < B True

A > B False

A == C True

B > C True

B >= C True

A != C False

**Boolean variables**

It has two values, True or false.

Example

hungry=True

sleepy=False

example

if sales = 3000:

sales\_quota\_met=True

else:

sales\_quote\_met=False

We can test the flag using the statement

if sales\_quota\_met:

print (“Your sales quota is met”)

**example of if statement**

temperature=float(input('What is the temperature? '))

**if** temperature>20:

print('Wear shorts and short sleeve t shirt')

**else**:

print('Wear long pants.')

print('Get some exercise outside.')

Q 1

1. Write an if statement that assigns 9 to x is y equals 20  
   ***if y == 20:*** ***x = 9***
2. Write an if statement that assigns a value of 20 to x and if y is greater than 100. it gives a value of 40 to X.  
   ***x = 20  
   if y > 100:  
    x = 40***

Q2. Write a program that asks the user for three scores out of 100. It then calculates the average. If the average is greater than 90, congratulate the user.

***sum = int(input("Enter score 1: "))***

***sum += int(input("Enter score 2: "))***

***sum += int(input("Enter score 3: "))***

***average = sum / 3***

***print("Average score is " + str(average))***

***if average > 90:***

***print("Congratulations!")***

Q3. Write a program to compare two strings. Get a password from the user. If the password is “Rela238#” accept the password. Otherwise inform the user that the password is incorrect. Set the password using a variable at the start of the program.  
***password = "Rela238#"***

***password\_input = input("Enter password: ")***

***if password\_input == password:***

***print("Password accepted!")***

***else:***

***print("Password incorrect!")***

Q4. Strings are compared using the ASCII values A to Z are represented by numbers 65 to 90. A to z are represented by 97 to 122. Digits 0 to 9 are stored in memory as characters by numbers 48 to 57. Blank space by 32

What will be the output of this code?

if ‘z’ < ‘a’:

print (‘ z is less than a”)

else :

print(‘ z is not less than a’)

***“z is not less than a” – because ‘a’ is 97 and ‘z’ is 122 in the ASCII table.***

Q5. Write a program that asks the user for the salary and the time in the job. The minimum salary for the sanction of a bank loan is an annual salary of $50000 and the person has to be on the current job for at least 3 years. The program should decide whether the person can be given a loan. Use nested if statement with else.

***salary = float(input("Enter your salary: "))***

***years = int(input("How many years have you been in this job? "))***

***if salary >= 50000.0:***

***if years >= 3:***

***print("Congratulations, you qualify for a loan!")***

***else:***

***print("Sorry, you have not been at this job long enough.")***

***else:***

***print(“Sorry, your salary is too low.”)***

Q6. Convert the code to if-elif-else statement

If number == 10:

print(‘ten’)

else:

if number == 11:

print(‘Eleven’)

else:

if number == 12:

print(‘Twelve’)

else:

print(“ the number is unknown”)

***if number == 10:***

***print('ten')***

***elif number == 11:***

***print('eleven')***

***elif number == 12:***

***print('twelve')***

***else:***

***print('the number is unknown')***

Q7.

Here is a code with many nested –if staements. The indendation is not correct. Rewrite the code such that the program works.

if score >= A\_score:

print(“your grade is A”)

else:

if score >= B\_score

print(‘Your grade is B’)

else:

if score >= C\_score:

print(‘your grade is C’)

else:

if score >= D\_score:

print(‘Your grade is D’)

else:

print(‘your grade is F’)

***if score >= A\_score:***

***print("your grade is A")***

***else:***

***if score >= B\_score:***

***print("Your grade is B")***

***else:***

***if score >= C\_score:***

***print("your grade is C")***

***else:***

***if score >= D\_score:***

***print("Your grade is D")***

***else:***

***print("your grade is F")***

Q8

Modify this program with the value for the different scores

A\_score = 90

B\_score = 80

C\_score = 70

D\_score = 60

Anything below 60 is F (fail)

**Reference: Starting out with Python : Third edition *Tony Gaddis*: Pearson**