

## Junior Knights Week #3 Python Homework: If Statement

### **Part A: Beach Trip**

Your parents will let you go to the beach with your friends if you have written 1500 or more words for your term project. Write a program that asks the user how many words they have written and then prints out one of the two following messages, based on the result:

Great, you've done your homework. Enjoy the beach!

Sorry, you must stay home and work on your term paper.

### **Sample Program Run**

How many words have you written for your term paper?

**1200**

Sorry, you must stay home and work on your term paper.

### **Part B: Chore Bonus**

Your parents pay you \$3 for each trash bag full of leaves you rake. If you can fill more than 10 bags in a month, they give you a bonus of \$20. Write a program that asks the user how many bags of leaves they filled in the past month and prints out the total amount of money they made. For example, if someone fills 8 bags in a month, they would get \$24. But, if they fill 11 bags in a month, they would get  $11 \times \$3 + \$20 = \$53$ .

### **Sample Program Run**

How many bags of leaves did you fill this month?

**20**

Great, you made \$80.

### **Part C: Video Game System**

Your parents have promised to buy you a game system depending on your grade point average (GPA). If your GPA is in between 3.0 and 3.5, inclusive, then you will get a Wii. If your GPA is greater than 3.5 but less than or equal to 3.8, you will get a Kinect. If your GPA is greater than 3.8, you will get a Playstation 3. Write a program that prompts the user for their GPA and prints out which game system, if any, they will get.

### **Sample Program Run #1**

What is your GPA?

**2.8**

Sorry, you do not get a game system.

### **Sample Program Run #2**

What is your GPA?

**3.6**

Great, you will get a Kinect for your good grades!

### **Part D: Field Trip**

You only get to go on your field trip if you bring back a signed permission slip. If you get to go on the field trip, you get to choose between going to the history museum and the art museum. In your program, ask the user if they've brought back a signed permission slip. If they have, then ask them a history question. If they get it right, then tell them that they are going to the history museum. If they get it wrong, tell them they are going to the art museum. If the user doesn't bring back a signed permission slip, tell them they can't go on the field trip.

#### **Sample Program Run #1**

Did you bring back your signed permission slip(yes/no)?

**no**

Sorry, you aren't allowed to go on the field trip.

#### **Sample Program Run #2**

Did you bring back your signed permission slip(yes/no)?

**yes**

Which number amendment allowed women to vote in the US?

**19**

You will get to go to the history museum!

#### **Sample Program Run #3**

Did you bring back your signed permission slip(yes/no)?

**yes**

Which number amendment allowed women to vote in the US?

**18**

You will get to go to the art museum!

**Note: Please make up your own history question instead of using the one from the sample for your program.**

### **Part E: Scholarship**

You are applying for a scholarship. In order to qualify, you need to have at least a 3.0 GPA and a 1100 SAT score. Write a program that determines if the user qualifies for the scholarship or not.

#### **Sample Program Run #1**

What is your SAT score?

**1140**

What is your GPA?

**3.7**

Great, you qualify for the scholarship!

#### **Sample Program Run #2**

What is your SAT score?

**1140**

What is your GPA?

**2.9**

Sorry, you don't qualify for the scholarship.

### **Part F: Honors Diploma**

Students Qualify for the Honors Diploma if their GPA is 3.6 or higher, OR their SAT score is 1250 or higher. Write a program that asks the user for their GPA and SAT score and determines whether or not they qualify for the Honors Diploma.

#### **Sample Program Run #1**

What is your SAT score?

**1140**

What is your GPA?

**3.7**

Great, you qualify for the Honors Diploma!

#### **Sample Program Run #2**

What is your SAT score?

**1140**

What is your GPA?

**3.5**

Sorry, you don't qualify for Honors Diploma.

### **Part G: Track Meet**

Write a program that asks the user to enter the names and times (in seconds) for 3 people entered in the 100 meter dash. Your program should print out the name of the winner. You are guaranteed that no one will tie with anyone else, so that there will always be a clear winner.

#### **Sample Program Run**

Runner #1, what is your name?

**Johanna**

What was your time?

**11.4**

Runner #2, what is your name?

**Robbie**

What was your time?

**12.2**

Runner #3, what is your name?

**Eva**

What was your time?

**10.9**

The winner of the race was Eva!

### **Part H: Worker Pay**

Write a program that asks the user to enter their name, pay rate (in \$/hr) and the number of hours the employee worked this week and outputs the amount of money the employee made that week. The standard work week is 40 hours. If an employee works more than 40 hours, they are paid time and a half for the hours they work over 40. For example, an employee making \$10/hour who works 50 hours in a week makes  $40 \times \$10 = \$400$  for the regular 40 hours they worked, plus  $10 \times \$15 = \$150$  for the 10 overtime hours they worked. (Note that \$15/hour is 50% more than the standard rate of \$10/hour.) Output should be a sentence with the employee's name and how much they got paid for the week.

### **Sample Program Run**

What is the employee's name?

**Dan**

What is the employee's pay rate (\$/hr)?

**6**

How many hours did the employee work this week?

**44**

Dan gets paid \$276.0 this week.