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**Section: G**

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| Program 1 | Create a program that has two parameters namely name and their age. Print out a message addressed to them that tells them the year that they will turn 100 years old. |
|  | **Algorithm:**  **Step1: Start**  **Step2: Read the values of name**  **Step3: Read the value of age**  **Step4: Calculate year the person turns 100 using the formula**  **year=2020+(100-age)**  **Step5: Print the value of year**  **Step6: End** |
|  | **Program with appropriate Comments** |
|  | **Out Put Screen shot:** |
| Program 2 | N students take K apples and distribute them among each other evenly. The remaining (the undivisible) part remains in the basket. How many apples will each single student get? How many apples will remain in the basket?The program reads the numbers N and K. It should print the two answers for the questions above. |
|  | **Algorithm:**  **Step1: Start**  **Step2: Read the value of number of students in n**  **Step3: Read the value of number of apples in k**  **Step4: Calculate number of apples each student gets using the formula**  **v= k / n**  **Step5: Calculate the remaining number of apples if any, using the formula**  **r= k % n**  **Step6: Print the value of v-number of apples each student gets**  **Step7: Print the value of r-number of remaining apples**  **Step7: End** |
|  | **Program with appropriate Comments:** |
|  | **Out Put Screen shot:** |
| Program 3 | Write a program to calculate the distance between two points. |
|  | **Algorithm:**  **Step1: Start**  **Step2: Read the x and y coordinates for point 1**  **Step3: Read the x and y coordinates for point 2**  **Step4: Calculate distance using the distance formula**  **Step5: Print the value of distance**  **Step6: End** |
|  | **Program with appropriate Comments:** |
|  | **Out Put Screen shot:** |
| Program 4 | Given two timestamps of the same day: a number of hours, minutes and seconds for both of the timestamps. The moment of the first timestamp happened before the moment of the second one. Calculate how many seconds passed between them. |
|  | **Algorithm:**  **Step1: Start**  **Step2: Read the value of hours, minutes, seconds for timestamp1**  **Step3: Read the value of hours, minutes, seconds for timestamp2**  **Step4: Convert hours and minutes into seconds for both timestamps**  **Step5: Find the difference between both the timestamps in seconds**  **Step6: Print the difference**  **Step7: End** |
|  | **Program with appropriate Comments:** |
|  | **Out Put Screen shot:** |
| Program 5 | Given a 4-digit integer number, display the individual digits & also compute the sum of digits. |
|  | **Algorithm:**  **Step1: Start**  **Step2: Read a four digit number in num**  **Step3: Divide num by 10, remainder gives the fourth digit. Store value in fourthdigit**  **Step4: Divide num by 10, store the quotient in num**  **Step5: Repeat Step3 and Step4 for third digit, second digit, and first digit**  **Step6: Calculate the sum of all digits**  **Step7: Print all digits**  **Step8: Print sum**  **Step9: End** |
|  | **Program with appropriate Comments:** |
|  | **Out Put Screen shot:** |
| Program 6 | Swap the contents of two memory locations   1. using temporary variable. 2. without using temporary variable. |
|  | **Algorithm for swapping two numbers using a temporary variable**  **Step1: Start**  **Step2: Read two values and store it in variables x and y**  **Step3: Print the value of x and y before swapping**  **Step4: Store value of x in temporary variable, temp**  **Step5: Store value of y in variable x**  **Step6: Store value of temp in y**  **Step7: Print the value of x and y after swapping**  **Step8: End**  **Algorithm for swapping two numbers without using a temporary variable**  **Step1: Start**  **Step2: Read two values and store it in variables x and y**  **Step3: Print the value of x and y before swapping**  **Step4: x = x - y**  **Step5: y = x + y**  **Step6: x = y - x**  **Step7: Print the value of x and y after swapping**  **Step8: End** |
|  | **Program with appropriate Comments:** |
|  | **Out Put Screen shot:** |
| Program 7 | Program to   1. Convert temperature in celsius to fahrenheit 2. Convert temperature in fahrenheit to celsius |
|  | **Algorithm:**  **Step1: Start**  **Step2: Read the value of temperature in Celsius in c**  **Step3: Convert to Fahrenheit using the formula and store it in variable f**  **f=(c\*9/5) + 32**  **Step4: Print the value of temperature in degree Fahrenheit**  **Step5: Read the value of temperature in Fahrenheit in f**  **Step6: Convert to Celsius using the formula and store it in variable c**  **c= (f-32) \* 5/9**  **Step7: Print the value of temperature in degree Celsius**  **Step8: End** |
|  | **Program with appropriate Comments:** |
|  | **Out Put Screen shot:** |
| Program 8 | Given the distance between 2 cities in kilometers. Write a Python program convert it into meters, centimeters, feet and inches and display the result. |
|  | **Algorithm:**  **Step1: Start**  **Step2: Read the value of distance between the two cities in kilometers in distance**  **Step3: Convert distance into meter by multiplying distance with 1000 and store in meters**  **Step4: Convert distance into centimeter by multiplying meter with 100 and store in centimeters**  **Step5: Convert distance into feet by multiplying meter with 3.2808399 and store in feet**  **Step6: Convert distance into inches by multiplying meter with 39.3700787 and store in inches**  **Step7: Print the distance between two cities in meters, centimeters, feet and inches**  **Step8: End** |
|  | **Program with appropriate Comments:** |
|  | **Out Put Screen shot:** |
| Program 9 | A school decided to replace the desks in three classrooms. Each desk sits two students. Given the number of students in each class, print the smallest possible number of desks that can be purchased.The program should read three integers: the number of students in each of the three classes, a, b and c respectively.In the first test there are three groups. The first group has 20 students and thus needs 10 desks. The second group has 21 students, so they can get by with no fewer than 11 desks. 11 desks is also enough for the third group of 22 students. So we need 32 desks in total. |
|  | **Algorithm:**  **Step1: Start**  **Step2: Read the value of number of students in three sections in a, b and c**  **Step3: numa= (a//2) + (a%2)**  **Step4: Repeat step 3 for section b and c**  **Step5: Print the number of benches in each section, a, b and c**  **Step6: End** |
|  | **Program with appropriate Comments:** |
|  | **Out Put Screen shot:** |
| Program 10 | [Given the integer N - the number of seconds that is passed since midnight - how many full hours and full minutes are passed since midnight? The program should print two numbers: the number of hours (between 0 and 23) and the number of minutes (between 0 and 1339). For example, if N = 3900, then 3900 seconds have passed since midnight. Therefore, the time now is 1:05am. So the program should print 1 65 - 1 full hour is passed since midnight, 65 full minutes passed since midnight.](https://github.com/sivaaninraj/37DaysOfCoding-Python/blob/master/Day006.md) |
|  | **Algorithm:**  **Step1: Start**  **Step2: Read the value of seconds passed since midnight in t**  **Step3: Calculate number of hours, hours = t/3600**  **Step4: Calculate the number of minutes from remaining t (taking remainder of t/3600)**  **Step5: Calculate the number of seconds from remaining minutes (taking remainder of t/ (3600\*60))**  **Step6: Print the number of hours, minutes and seconds**  **Step7: End** |
|  | **Program with appropriate Comments:** |
|  | **Out Put Screen shot:** |