

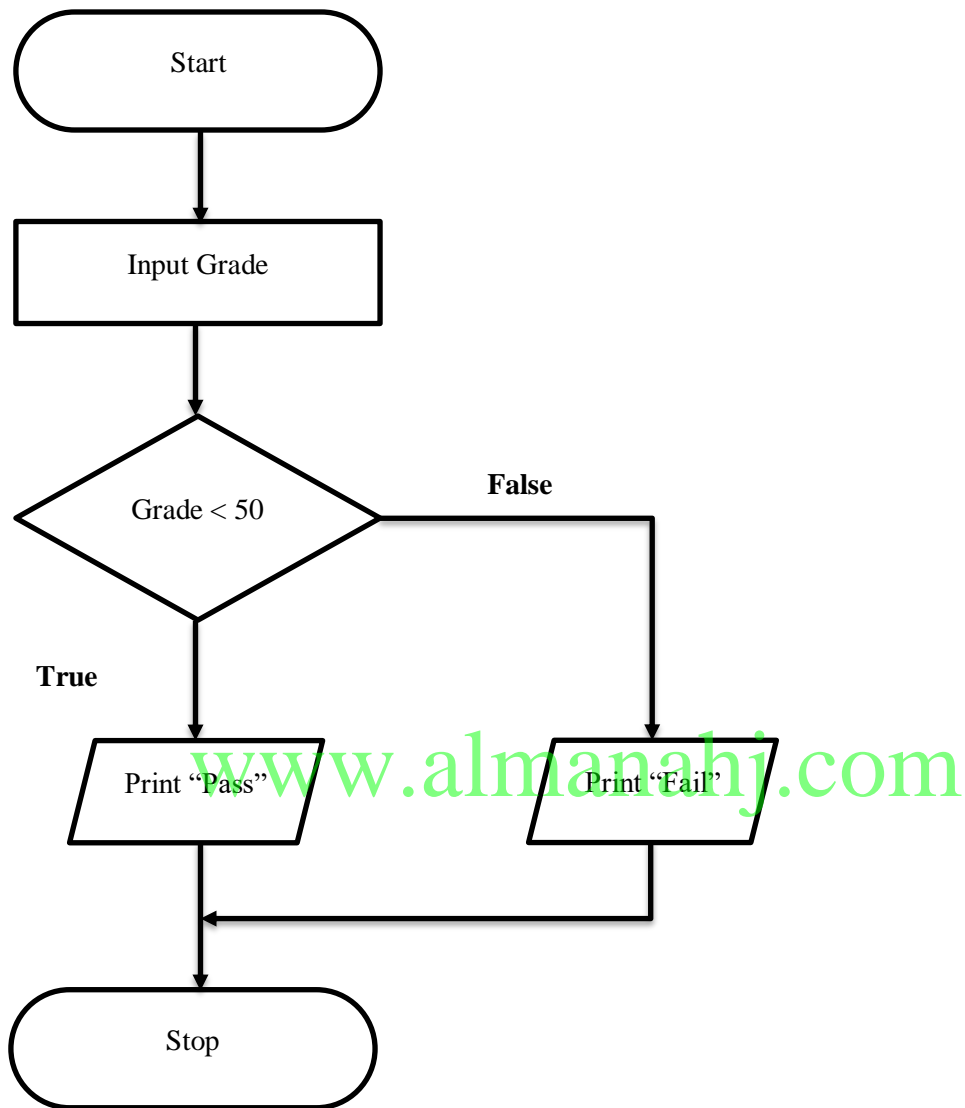
# Grade 11 – Unit 1 - Solution

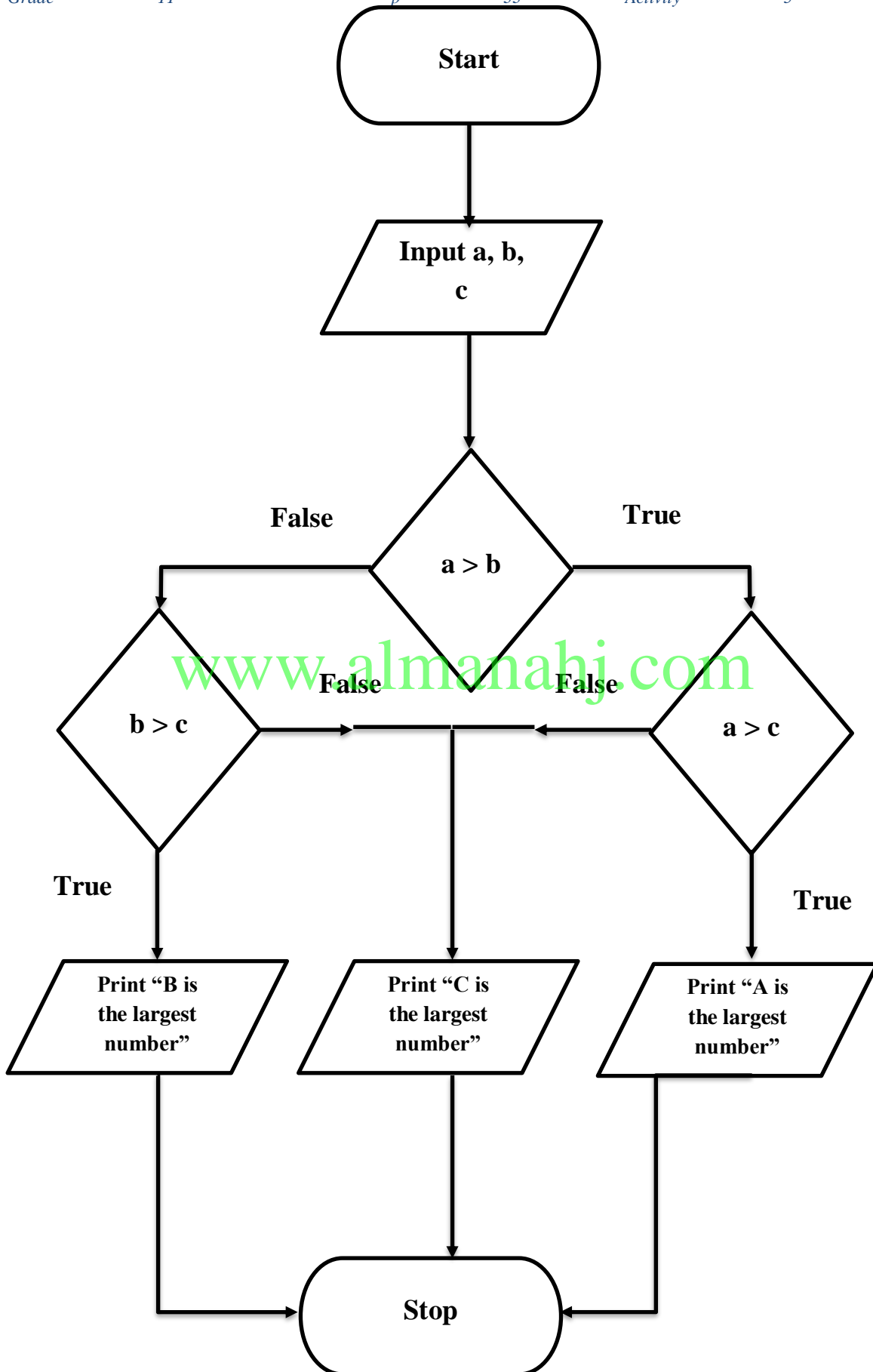
Grade 11 – p 21 – Activity 3

Term	Description
Autonomous vehicle	A vehicle that to drive itself using computers.
Internet of Things	The Internet of Things (IoT) is a system of interrelated computing devices, mechanical and digital machines, objects, animals or people that are provided with unique identifiers and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction.
3-D printing	3D printing or additive manufacturing is a process of making three dimensional solid objects from a digital file.
Quantum computing	Make use of the behaviour of atomic and subatomic particles where the classical laws of physics do not apply. They use qubits rather than bits. Bits are can only exist in a binary state. Qubits can exist in more than two states. Quantum computers will be able to store huge amounts of data and the processors will be much faster.
Nanobots	Miniature robots designed to carry out tasks at the subatomic level.
Biological computers	Are made up of RNA, DNA and proteins and perform calculations.

Grade 11 – p 31 - Activity 5 (a)

Computing the average of two numbers





Assignment	List of variables	List of values stored in the variables
points = 27	points	27
goals = 17	goals	17
g = 9.8	g	9.8
year = 2018	year	2018
side = 2	side	2
areaSquare = side ** 2	areaSquare, side	side ** 2
nextYear = year + 1	nextYear, year	year + 1
name = ""	name	none
47	none	none

A = 27

B = 16

C = -11

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Problem description	Assignment statements	Value stored in the variable
A bag of rice in a supermarket costs 340 AED. How would you store this cost in a variable?	<i>bagOfRice = 340</i>	340
A marathon runner uses an app on her smartwatch to track the distance she has run and how long it has taken her. She has covered 23 km in 1 hour 30 minutes in the Dubai marathon. How would you store the distance and time and how fast she is running in the app?	<i>distance = 23</i> <i>time = 1.5</i> <i>speed = distance / time</i>	23 1.5 <i>distance/time</i>
Mohammed has just bought a laptop for 1900 AED and two SSDs for 389 AED. Use variables	<i>laptop = 1900</i> <i>sdd = 389</i> <i>total = laptop + (sdd * 2)</i>	1900 389 2678

to calculate and store the total amount of money Mohammed will pay.		
Store the total number of Grade 11 students in a school in a variable. There are 28.	<i>grade11 = 28</i>	28
A variable to store the number of laps a Formula 1 car does during the Abu Dhabi Grand Prix.	<i>laps = 55</i>	55
A variable to store the room temperature in a program that controls an air conditioning unit.	<i>temperature = 23</i>	23
A variable to store the floor number a guest wants to go to in a program that controls an elevator.	<i>floor = 3</i>	3
A variable to store a user's name entered from a keyboard.	<i>name = input("Enter your username")</i>	<i>The value that the user inputs</i>

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Grade -11 - p 39 - Activity 7 (a)

Data	Data type
2034	<b>integer</b>
- 22	<i>integer</i>
3006.0	<i>float</i>
The result of 15 x 200	<i>integer</i>
The result of 17 x 0.1	<i>float</i>
The result of 34.11 x 23.78	<i>float</i>
100.21	<b>float</b>
Data type to store the age of a Grade 11 student	<i>integer</i>
Data type to store the height of a Grade 11 student in m	<i>float</i>

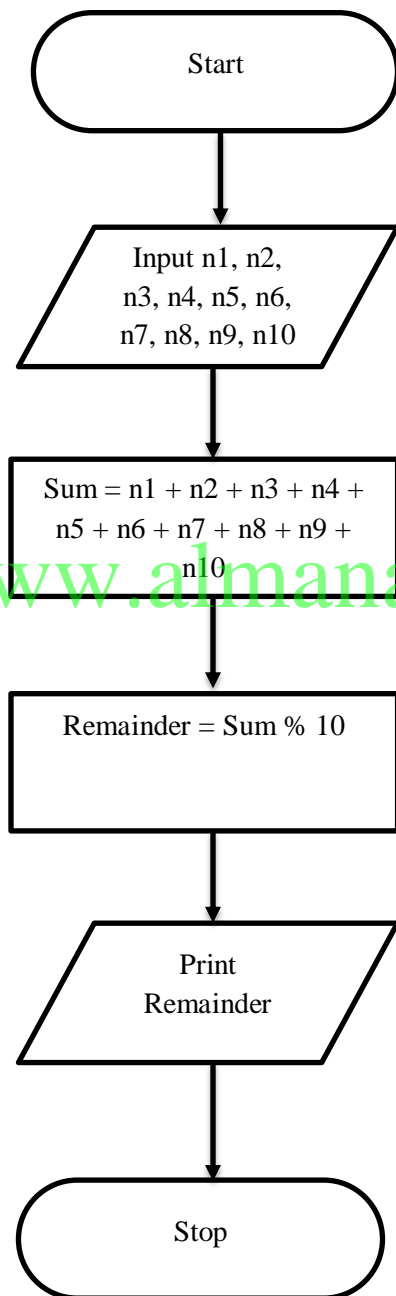
Description	Line numbers
Where string data types are used	2, 4, 8
Where a string is assigned to a variable	2, 4
An integer is assigned to a variable	5
A string is changed into an integer data type	5
A string is changed into a floating-point data type	3

```
1 #Program to print a welcome message
2 name = input("Enter your name: ")
3 print("Hello,", name)
```

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```
1 #Program to print the sum and product of two whole numbers
2 number1 = input("Enter the first number: ")
3 number2 = input("Enter the second number: ")
4
5 number1 = int(number1)
6 number2 = int(number2)
7
8 product = number1 * number2
9
10 print("The product is: ", product)
11
12
```

Data types are used to classify the data used in a computer program. Int, float and string are examples of datatypes.



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Grade 11 – p 43 – Activity End of unit (c)

Variables: length, width, perimeter

Operators: =, \*, +

Data types: float, string

Grade 11 – p 43 – Activity End of unit (d))

```
1 #Program to print the volume of a cube
2
3 #Variable assigned to value of pi
4 pi = 22/7
5
6 #Assign variable to user input
7 height = input('Height of cylinder: ')
8 #Convert variable to float
9 height = float(height)
10
11 radian = float('Radius of cylinder: ')
12 radian = float(radian)
13
14 #Formula for volume of a cylinder
15 volume = pi * radian * radian * height
16 print("Volume is: ", volume)
```