

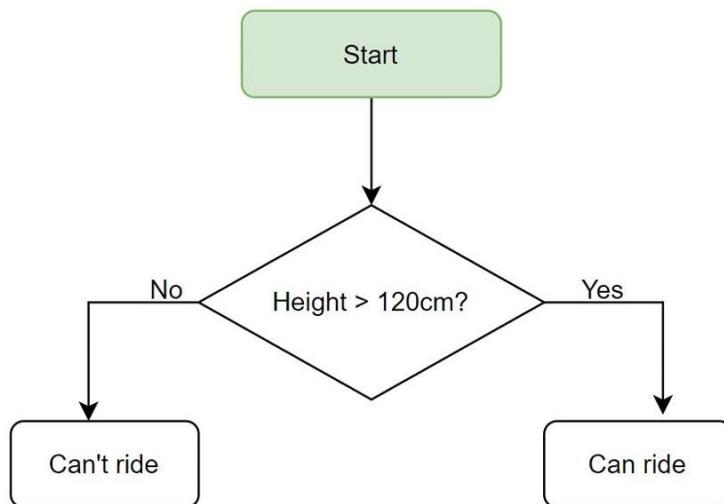
Data Science & AI Fellowship

Instructor/Mentor: Sir Noorullah

Assignment # 02

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Flowchart 01



Python code:

```
height = int(input("Enter your height: "))
if height > 120:
    print('Can ride')
else:
    print("Can't ride")
```

Thonny - C:\Users\Use\Desktop\practice.py @ 19:1

File Edit View Run Tools Help

Program arguments:

Variables

Name	Value
height	110

practice.py * :

```

1 # Flowchart-01
2
3 height = int(input("Enter your height: "))
4 if height > 120:
5     print('Can ride')
6 else:
7     print("Can't ride")
8
9
10
11
12
13
14

```

Shell

```

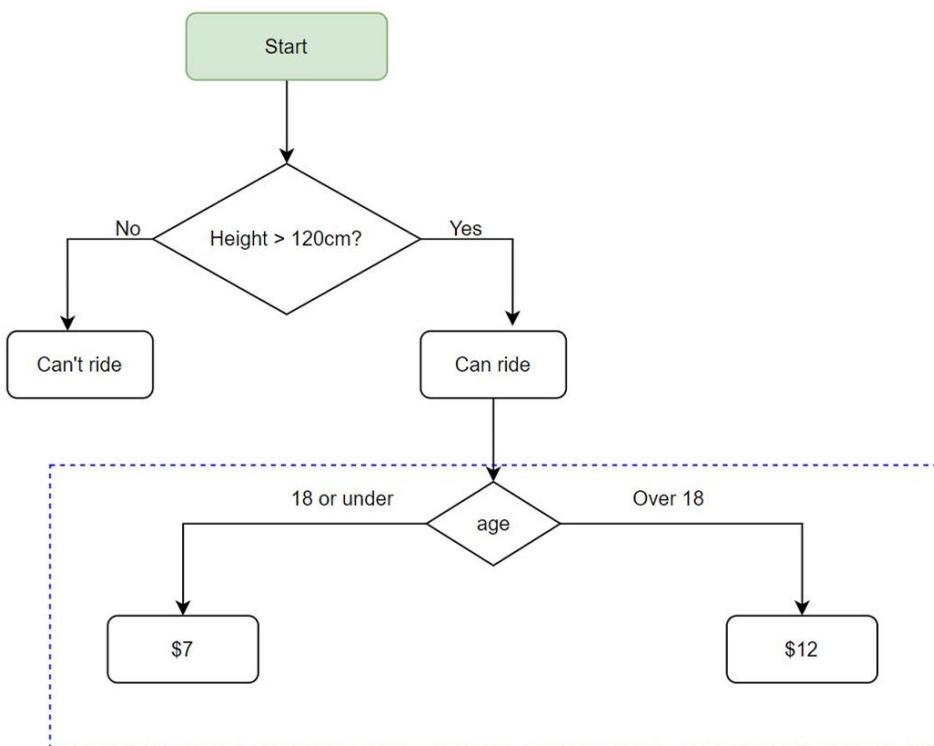
>>> %Run practice.py
Enter your height: 110
Can't ride
>>> |

```

Assistant

The code in [practice.py](#) looks good.
 If it is not working as it should, then consider using some general [debugging techniques](#).
[Was it helpful or confusing?](#)

Flowchart 02



Python code:

```
height = int(input("Enter your height: "))

if height > 120:
    print('Can ride')
    age = int(input("Enter your age: "))

    if age <= 18:
        print('$7')
    elif age > 18:
        print('$12')

else:
    print("Can't ride")
```

The screenshot shows the Thonny Python IDE interface. The code editor displays the script `practice.py` with the following content:

```
8
9 # Flowchart-02
10
11 height = int(input("Enter your height: "))
12
13 if height > 120:
14     print('Can ride')
15     age = int(input("Enter your age: "))
16     if age <= 18:
17         print('$7')
18     elif age > 18:
19         print('$12')
20 else:
21     print("Can't ride")
22
23
24
25
26
27 |
```

The shell window shows the program's output:

```
>>> %Run practice.py
Enter your height: 140
Can ride
Enter your age: 25
$12
>>>
>>>
>>>
>>>
```

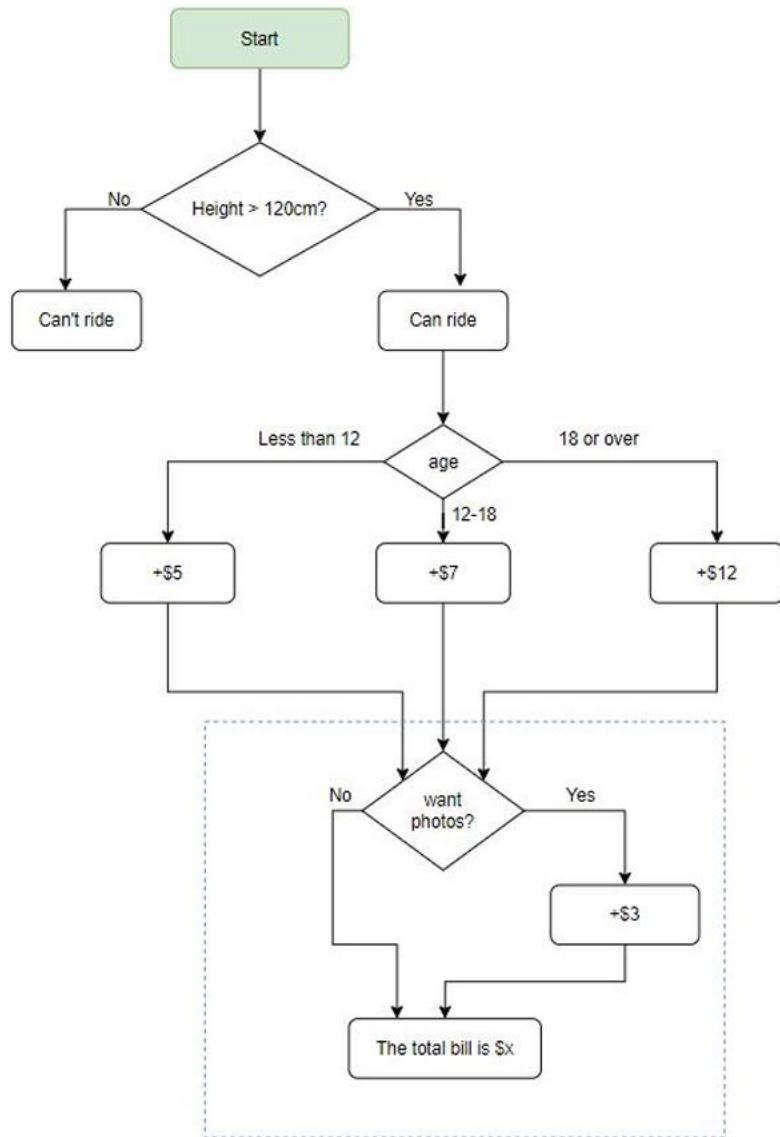
The variables pane shows the current values:

Name	Value
age	25
height	140

The assistant pane provides feedback:

The code in [practice.py](#) looks good.
If it is not working as it should, then consider using some general [debugging techniques](#).
[Was it helpful or confusing?](#)

Flowchart 03



Python code:

```
height = int(input("Enter your height: "))
```

```
if height > 120:  
    print("Can ride")  
    age = int(input("Enter your age: "))  
    bill = 0  
    if age < 12:
```

```

bill += 5
print("+$5")
elif 12 <= age <= 18:
    bill += 7
    print("+$7")
else: # age >= 18
    bill += 12
    print("+$12")
photo = input("Want a photo? yes/no: ")
if photo == "yes":
    bill += 3
    print("+$3")

print(f"The total bill is ${bill}")
else:
    print("Can't ride")

```

The screenshot shows the Thonny IDE interface with the following details:

- Title Bar:** Thonny - C:\Users\Use\Desktop\practice.py @ 53:1
- File Menu:** File, Edit, View, Run, Tools, Help
- Toolbar:** Standard icons for Open, Save, Run, Stop, etc.
- Code Editor:** Shows the Python script `practice.py` with syntax highlighting.
- Variables Panel:** Shows the current variable values:

Name	Value
age	25
bill	15
height	130
photo	'yes'
- Shell Panel:** Shows the terminal output of running the script:


```

>>> %%Run practice.py
Enter your height: 130
Can't ride
Enter your age: 25
+$12
Want a photo? yes/no: yes
+$3
The total bill is $15
>>>
      
```
- Assistant Panel:** Provides feedback about the code:
 - The code in `practice.py` looks good.
 - If it is not working as it should, then consider using some general debugging techniques.
 - [Was it helpful or confusing?](#)

Why we used a bill variable

In the **original code**, the program only printed values like **+\$5 or "The total bill is \$x"**. This does not actually calculate the total amount. In Python, to keep track of the total bill, we need a variable.

Example:

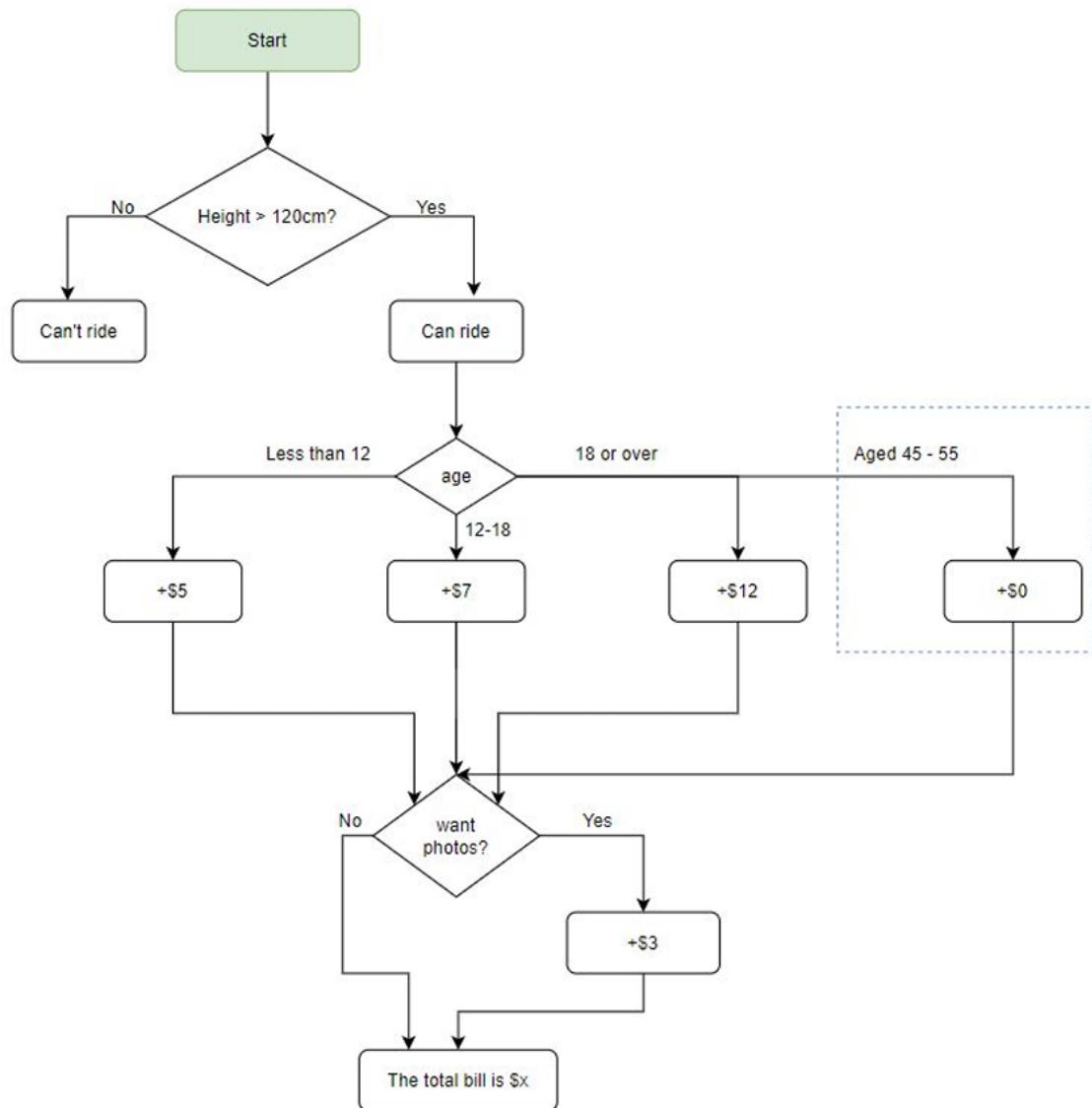
```
bill = 0  
bill += 5 # add child ticket  
bill += 3 # add photo charge  
print(f"The total bill is ${bill}")
```

- The variable bill starts at 0.
- Each charge is added step by step.
- At the end, bill holds the correct total amount, which is **displayed with an f-string**.

This makes the program **accurate and functional**, instead of just printing placeholders.

- We introduced a **bill variable** to **calculate the total amount properly**.
-

Flowchart 04



Python code:

```
height = int(input("Enter your height: "))
```

```
if height > 120:
```

```
print("Can ride")
age = int(input("Enter your age: "))
bill = 0
if age < 12:
    bill += 5
    print("+$5")
elif 12 <= age < 18:
    bill += 7
    print("+$7")
elif 45 <= age <= 55:
    bill += 0
    print("+$0 (Free ride for 45–55)")
else: # age >= 18 but not 45–55
    bill += 12
    print("+$12")

photo = input("Want a photo? yes/no: ")
if photo == "yes":
    bill += 3
    print("+$3")

print(f"The total bill is ${bill}")
else:
    print("Can't ride")
```

```

50 height = int(input("Enter your height: "))
51
52 if height > 120:
53     print("Can ride")
54     age = int(input("Enter your age: "))
55     bill = 0
56
57     if age < 12:
58         bill += 5
59     elif 12 <= age < 18:
60         bill += 3
61     print("+$5")
62     elif 45 <= age < 55:
63         bill += 0
64     print("($0 (free ride for 45-55))")
65     else: # age >= 18 but not 45-55
66         bill += 12
67     print("+$12")
68
69     photo = input("Want a photo? yes/no: ")
70     if photo == "yes":
71         bill += 3
72     print("+$3")
73
74     print(f"The total bill is ${bill}")
75 else:
76     print("Can't ride")
77
78

```

Shell:

```

>>> run practice.py
Enter your height: 150
Can ride
Enter your age: 25
45
Want a photo? yes/no: no
The total bill is $12
>>>

```

Variables:

Name	Value
age	25
bill	12
height	150
photo	'no'

Assistant:

The code in [practice.py](#) looks good.

If it is not working as it should, then consider using some general [debugging techniques](#).

[Was it helpful or confusing?](#)

Why we changed the order of conditions (45–55 special case)

In the **original Flowchart 4 code**:

```

elif age >= 18:
    print("+$12")
elif 45 <= age <= 55:
    print("$0")

```

The age >= 18 condition comes first. For someone aged 50:

- Python checks age >= 18 → True
- It executes +\$12 and **skips all other elif blocks**
- **The special case 45 <= age <= 55 never runs**

This means ages 45–55 were being charged \$12 instead of \$0.

To fix this, we check the **special discount first**:

```

elif 45 <= age <= 55:
    print("$0")
elif age >= 18:
    print("+$12")

```

Now **the discount range (45–55) is correctly applied** before the general adult case.

➤ We **reordered the conditions** so that the **special discount (45–55) is not skipped**.