

**Scenario**

India Accelerator is a Start-up Accelerator that helps start-ups to expand exponentially from the early stage by equipping them with the knowledge, tools, and connections needed for their next stage of growth. The organization has engaged you to help code a few Python programs as handy tools to solve several problems at hand.

**Task 1 - Classify Start-ups (40%)**

In this task, you will write a Python program to help the organization classify Start-ups based on certain factors to help the organization in the selection process.

India Accelerator considers the following factors to classify the Start-ups into Priority 1, Priority 2 Priority 3 and Rejected categories:

Factor Number	Factor	Weighting
1	Founder	30%
2	Industry	30%
3	Traction	35%
4	Gut	5%

Each factor is rated on a scale of 5 and the rating for each assessment may be a decimal number with at most two decimal points (e.g., 4, or 4.5, or 4.75). The final rating of a Start-up is the weighted sum of all 4 factors. For example, A Start-up received the rating of 4/5, 4.25/5, 3.75/5 and 4/5 for factors 1, 2, 3 & 4 respectively. Their final rating would 3.98.

$$4 \times 30\% + 4.25 \times 30\% + 3.75 \times 35\% + 4 \times 5\% = 3.98$$

For simplicity, in this Task, we will use a bracket that consists of 4 numbers to denote the ratings of a start-up's four factors in order. For example, (4, 4.25, 3.75, 4) denotes a Start-up that received 4/5 for the first factor, 4.25 for the second, 3.75/5 for the third and 4/5 for the fourth.

The final rating is used to classify the start-ups into P1, P2, P3 and R categories. The classification method of India accelerator stipulates the following rules for determining the. The range in the Final mark column includes the numbers on both ends.

Final Rating	Classification	Description
4.0 - 5.0	P1	High Potential, growth stage, pre-funded start-ups
2.5 – 4.0	P2	Early revenues
1.0 – 2.5	P3	Seed stage start-ups, no product-market fit
0 – 1.0	R	Rejected after Screening

The organization has asked you to develop a Python program that can classify the Start-ups into P1, P2, P3 and R categories given the rating for all the factors based on the business rules described above.

Your program should allow organization to type in a Start-up's name and ratings separated by a comma. Your program will then output the correct classification for that Start-up. In this task, you need to allow the organization to type in the ratings for another Start-up.

You will be provided with a number of funding applications which have 4 Factor rating already given.

Here are some sample inputs and outputs India Accelerator expects to see when running your program. All the green lines are your program outputs, all the red lines are users' input.

#### Sample input and output 1:

```
>>> Enter a Start-up's factor ratings (separated by comma):  
>>> FiveFour Inc,4, 4.5, 3.5, 4  
>>> P1
```

#### Sample input and output 2:

```
>>> Enter a Start-up's factor ratings (separated by comma):  
>>> Acme corp,1, 1.5, 1.25, 3  
>>> P3
```

Implement your program in a Python script file and name it `task1.py`. You need to submit this file as part of the Assessment 2 submission.

## Task 2 – Vertical wise sourcing statistics (60%)

This task is built upon Task 1. You may want to make a copy of `task1.py`, and name it `task2.py`, and you may want to use the logic you implemented for Task 1. **DO NOT** override `task1.py`.

Though domain agnostic, India Accelerator provides industry specific support to Start-ups as different industries demand distinct support in terms of competencies, strategies, mentorships, and fund raising. The performance of Start-up sourcing for each vertical is based on the quality of Start-up's that are accepted & onboarded into the program.

Your program should help India Accelerator measure the performance of Start-up sourcing for each vertical to help the organization in improving the sourcing activities of underperforming verticals.

### Input

The vertical head may type in as many Start-up's factor rating as they wish. Each line of input represents a Start-up's 4 factor ratings. The only way they signal to the program that they are done with inputting is to type in a letter for example 'N'.

>>> Enter a Start-up's factor ratings (separated by comma), type in letter N to finish:

>>> FiveFour Inc,4,3,5,2

>>> Enter a Start-up's factor ratings (separated by comma), type in letter N to finish:

>>> Rural Distillery, 3,2.5,4.35

>>> Enter a Start-up's factor ratings (separated by comma), type in letter N to finish:

>>> N

*(input finishes)*

Each line of input represents a Start-up's funding application's 4 factor ratings. The only way they signal to the program that they are done with inputting is to type in a letter N.

### Output

After input finishes, your program will then output the following vertical sourcing performance statistics:

- **Number of Start-ups:** This number shows the total number of Start that the user typed in.
- **Start-up Progression Rate:** The percentage of start-up's that received a classification of P1, P2 and P3 for further consideration

$$\frac{\#P1 + \#P2 + \#P3}{\#Startups}$$

#P1 represents the number of Start-ups that were classified into P1. #Startups represents the total number of Start-ups screened. Rounded to two decimal points.

- **Average rating for Factor 1:** the average rating for factor 1 with two decimal points.
- **Average rating for Factor 2:** the average rating for factor 2 with two decimal points.
- **Average rating for Factor 3:** the average rating for factor 3 with two decimal points.
- **Average rating for Factor 4:** the average rating for factor 4 with two decimal points.
- **Average final rating:** the average final rating for classification with two decimal points.
- **Number of P1s:** the number of Start-ups in P1 category.
- **Number of P2s:** the number of Start-ups in P2 category
- **Number of P3s:** the number of Start-ups in P3 category.
- **Number of Rs:** the number of Start-ups rejected after initial screening.

For example,

```
>>> Enter a start-up's factor rating (separated by comma), type in letter N to finish:
```

```
>>> FiveFour Inc,3,4,2,2
```

```
>>> Enter a start-up's factor rating (separated by comma), type in letter N to finish:
```

```
>>> Rural Distillery,2,0,1,.5
```

```
>>> Enter a start-up's factor rating (separated by comma), type in letter N to finish:
```

```
>>> Acme corp,3,4,3.5,4.5
```

```
>>> Enter a start-up's factor rating (separated by comma), type in letter N to finish:
```

```
>>> N
```

```
>>> Number of Start-ups: 3
```

```
>>> Start-up progression rate: 67%
```

```
>>> Average rating for factor 1: 2.67
```

```
>>> Average rating for factor 2: 2.67
```

```
>>> Average rating for factor 3: 2.17
```

```
>>> Average rating for factor 4: 2.33
```

```
>>> Number of P1s: 0
```

```
>>> Number of P2s: 2, FiveFour Inc, Acme corp
```

```
>>> Number of P3s: 0
```

```
>>> Number of Rs: 1, Rural Distillery
```

Implement your program in a Python script file and name it `task2.py`. You need to submit this file as part of the Assessment 2 submission.

### Task 3:Using data from Task 2

Display a menu with following options:

1. Select to present all P1 classification Company with names.
2. Select to present all P2 classification Company with names.
3. Select to present all P3 classification Company with names.
4. Select to present all R classification Company with names.
5. How many businesses do you want to invest in? Depending on the number of businesses the user/investor wants to invest , pick Businesses from Top category first. If there are no businesses in say P1 then pick from P2 and so on.
6. Exit

Example input and output :

1. Present all P1
2. Present all P2
3. Present all P3
4. Present all R
5. How many businesses do you want to invest in
6. Terminate

**Which option do you want to see: 1**

>>> No startup satisfied requirement for P1 ratings.

1. Present all P1
2. Present all P2
3. Present all P3
4. Present all R
5. How many businesses do you want to invest in
6. Terminate

**Which option do you want to see: 2**

>>> FiveFour Inc

>>> Acme corp

1. Present all P1
2. Present all P2
3. Present all P3
4. Present all R
5. How many businesses do you want to invest in
6. Terminate

**Which option do you want to see: 3**  
**No startup satisfied requirement for P3 ratings.**

1. Present all P1
2. Present all P2
3. Present all P3
4. Present all R
5. How many businesses do you want to invest in
6. Terminate

**Which option do you want to see: 4**

>>> Rural Distillery

1. Present all P1
2. Present all P2
3. Present all P3
4. Present all R
5. How many businesses do you want to invest in
6. Terminate

**Which option do you want to see: 5**

>>> How many businesses do you want to invest in:2

>>> FiveFour Inc,P2

>>> Acme corp,P2

1. Present all P1
2. Present all P2
3. Present all P3
4. Present all R
5. How many businesses do you want to invest in
6. Terminate

**Which option do you want to see: 6**

**Note: The participants can be creative in displaying their data and make the program as user friendly as possible, including handling incorrect inputs.**

## **Outcomes and Applications for India Accelerator**

### **Task 1 - Classify Start-ups (40%)**

- Standardized Start-up classification across all verticals i.e., Cybersecurity, Fin-tech, SME, Health-tech etc.
- Quicker and more efficient application screening.

## **Task 2 - Vertical wise sourcing statistics (60%)**

This task will help India accelerator gain insights into its sourcing activities including the following:

- What sourcing channels are working the best for each vertical. For example, if Start-ups coming from source X for a particular vertical are being rejected, the vertical head can focus on other channels that are bringing better quality applications, making the sourcing process more efficient and effective.
- Insights into key trends related to the four factors considered before accepting a start-up in with respect to each vertical. For example, a particular vertical shows a low average rating for 'Traction' as a factor, this could mean that the industry is very new, or very competitive and that Start-ups would need more support with business development.
- Measure the overall performance of each vertical with respect to the sourcing of high-quality Start-ups.
- Help India Accelerator maintain key statistics that can help the organization take informed decisions while altering its screening and selection processes.