

# Phase 2 Engine Documentation

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ST1506: DSDA FINAL YEAR PROJECT

COMPANY PROFILING TEXT MINING

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# Synopsis

The purpose of this documentation is to demonstrate the steps a user should take to successfully use the Engine. This documentation is for any potential user of the Engine.

**This engine uses the BERT-uncased model.**

## Technical Terms

- **OPTIONAL** : These are usually denoted beside the steps bulleted points. When labelled beside a numbered list, users may omit that step depending on the conditions/scenarios further explained with an amber warning box.

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# Running The Engine – GPU

## Checking folder items



**Note: The model weights were trained with GPU. Therefore, we advise users to use anaconda, which has the necessary CUDA files.**



**Note: This guide is based on Windows OS. Not all steps may be the same on other operating systems.**

1. Download and unzip the project zip file “*fyp\_code\_vX*” in your C Drive (C:), where *vX* is the version number.
2. Please ensure that the folder structure is as follows or contains:

```
C:\FYP_CODE_V2
├── engine
│   ├── files
│   ├── weights
│   │   ├── bert
│   │   └── variables
│   └── __pycache__
└── training
```

Alternatively, you may wish to replicate the following commands to do a quick check in your powershell. Assuming that “*fyp\_code\_vX*” is located in your C Drive (C:),

```
cd fyp_code_vX
tree .
```

## Activating Conda Environment



**Note: Before further reading, please ensure that Anaconda has been installed in your device, and that your device has a recognised NVIDIA GPU.**

1. Firstly, in the windows search bar, search for “**Anaconda Powershell Prompt (anaconda3)**”.

Select “**Run as Administrator**”.

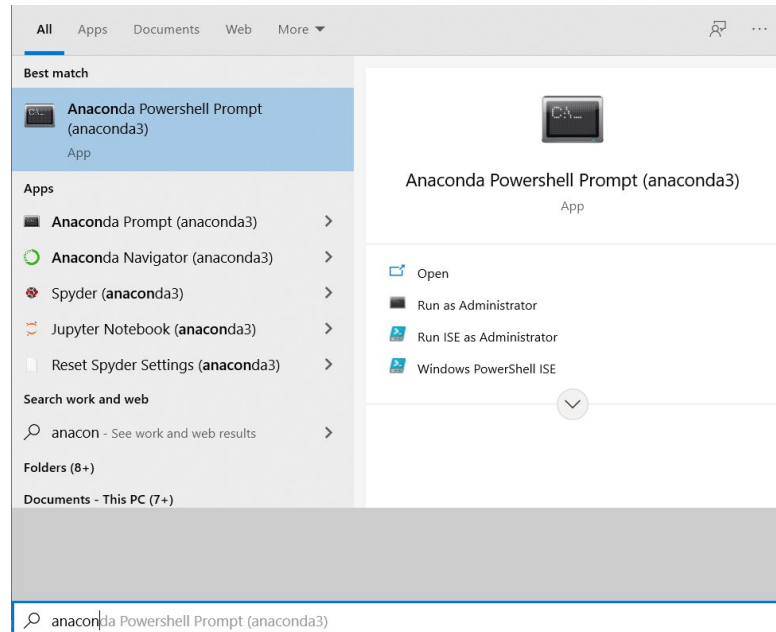


Figure 1: Search for Anaconda Powershell Prompt (anaconda3)

2. Once done, assuming you have saved the folder earlier on in the root directory of the C Drive (C:), cd to the folder such that the directory is **C:\FYP\_CODE\_VX**.
3. To ensure that the current working directory is clean, run  
**conda create -n fypEngine python -y**  
to create a fresh conda environment, so that your default anaconda environment is not contaminated with the libraries required to run the code.

```
Anaconda Powershell Prompt (anaconda3)
(base) PS C:\fyp_code_v2> conda create -n fypEngine python -y
Collecting package metadata (current_repodata.json): done
Solving environment: done

## Package Plan ##

  environment location: C:\Users\zhankang\anaconda3\envs\fypEngine
  added / updated specs:
    - python

The following NEW packages will be INSTALLED:

ca-certificates pkgs/main/win-64::ca-certificates-2021.7.5-haa95532_1
certifi          pkgs/main/win-64::certifi-2021.5.30-py39haa95532_0
openssl         pkgs/main/win-64::openssl-1.1.1k-h2bbff1b_0
pip             pkgs/main/win-64::pip-21.2.2-py39haa95532_0
python          pkgs/main/win-64::python-3.9.6-h6244533_0
setuptools      pkgs/main/win-64::setuptools-52.0.0-py39haa95532_0
sqlite          pkgs/main/win-64::sqlite-3.36.0-h2bbff1b_0
tzdata          pkgs/main/noarch::tzdata-2021a-h52ac0ba_0
vc              pkgs/main/win-64::vc-14.2-h21ff451_1
vs2015_runtime  pkgs/main/win-64::vs2015_runtime-14.27.29016-h5e58377_2
wheel           pkgs/main/noarch::wheel-0.36.2-pyhd3eb1b0_0
wincertstore    pkgs/main/win-64::wincertstore-0.2-py39h2bbff1b_0

Preparing transaction: done
Verifying transaction: done
```

Figure 2: Snippet of the creation of the environment

- Once done, run **conda activate fypEngine** to activate the environment you have just created. Notice that once done execution, the bracketed text content beside the final command line will change to “fypEngine”.

```
(base) PS C:\fyp_code_v2> conda activate fypEngine
(fypEngine) PS C:\fyp_code_v2> █
```

Figure 3: Notice the bracketed text changes from base to fypEngine upon activation of the environment



**Note: The following steps are the methods to install the CUDNN libraries. If you have the libraries included, please omit the bulleted points marked as OPTIONAL.**

- OPTIONAL:** Run **conda install -c conda-forge cudnn -y** to install libraries required for GPU usage. Wait for installation to complete.

```

Anaconda Powershell Prompt (anaconda3)
(fypEngine) PS C:\fyp_code_v2> conda install -c conda-forge cudnn -y
Collecting package metadata (current_repodata.json): done
Solving environment: done

==> WARNING: A newer version of conda exists. <==
  current version: 4.9.0
  latest version: 4.10.3

Please update conda by running

  $ conda update -n base conda

## Package Plan ##

  environment location: C:\Users\zhankang\anaconda3\envs\fypEngine

  added / updated specs:
    - cudnn

The following packages will be downloaded:



| package                   | build          | size     | channel     |
|---------------------------|----------------|----------|-------------|
| ca-certificates-2021.5.30 | h5b45459_0     | 171 KB   | conda-forge |
| certifi-2021.5.30         | py39hcbf5309_0 | 142 KB   | conda-forge |
| cuda-toolkit-11.2.2       | h933977f_8     | 880.1 MB | conda-forge |


```

Figure 4: Snippet of installing the CUDNN packages

- Once done, run the following command to ensure that the latest conda version is being used.

**conda update -n base conda -y**

- Once done, run the following command to make a new python virtual environment. This is to ensure that the install python libraries do not dirty your python environment , and that there are no conflict with existing packages that may cause the engine to fail.

**python -m venv env**  
**.\env\Scripts\activate**

You should now see that a green bracketed “env” should be beside the bracketed “fypEngine” also.

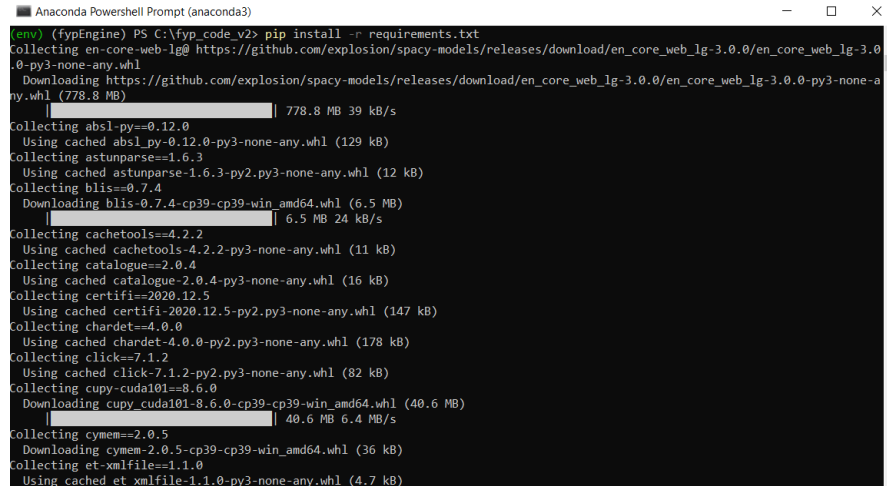
```
(fypEngine) PS C:\fyp_code_v2> python -m venv env
(fypEngine) PS C:\fyp_code_v2> .\env\Scripts\activate
(env) (fypEngine) PS C:\fyp_code_v2>
```

Figure 5: A new green env icon has been added

## Preparing libraries and dataset

1. In order to install the required libraries that is necessary to run the engine, we will have to install the libraries declared in the requirements.txt file. To do so, run the following command and wait for it to complete.

**pip install -r requirements.txt**



```
(env) (fypEngine) PS C:\fyp_code_v2> pip install -r requirements.txt
Collecting en-core-web-lg@ https://github.com/explosion/spacy-models/releases/download/en_core_web_lg-3.0.0/en_core_web_lg-3.0.0-py3-none-any.whl
  Downloading https://github.com/explosion/spacy-models/releases/download/en_core_web_lg-3.0.0/en_core_web_lg-3.0.0-py3-none-any.whl (778.8 MB)
 778.8 MB 39 kB/s
Collecting absl-py==0.12.0
  Using cached absl_py-0.12.0-py3-none-any.whl (129 kB)
Collecting astunparse==1.6.3
  Using cached astunparse-1.6.3-py2.py3-none-any.whl (12 kB)
Collecting blis==0.7.4
  Downloading blis-0.7.4-cp39-cp39-win_amd64.whl (6.5 MB)
 6.5 MB 24 kB/s
Collecting cachetools==4.2.2
  Using cached cachetools-4.2.2-py3-none-any.whl (11 kB)
Collecting catalogue==2.0.4
  Using cached catalogue-2.0.4-py3-none-any.whl (16 kB)
Collecting certifi==2020.12.5
  Using cached certifi-2020.12.5-py2.py3-none-any.whl (147 kB)
Collecting chardet==4.0.0
  Using cached chardet-4.0.0-py2.py3-none-any.whl (178 kB)
Collecting click==7.1.2
  Using cached click-7.1.2-py2.py3-none-any.whl (82 kB)
Collecting cupy-cuda101==8.6.0
  Downloading cupy_cuda101-8.6.0-cp39-cp39-win_amd64.whl (40.6 MB)
 40.6 MB 6.4 MB/s
Collecting cymem==2.0.5
  Downloading cymem-2.0.5-cp39-cp39-win_amd64.whl (36 kB)
Collecting et-xmlfile==1.1.0
  Using cached et_xmlfile-1.1.0-py3-none-any.whl (4.7 kB)
```

Figure 6: Snippet of installing libraries defined in requirements.txt



**Note:** If you encounter a OS error similar to this: `Could not install packages due to an EnvironmentError: [Errno 2] No such file or directory`, please refer to Appendix A.

2. Once done install the required libraries, ensure that there is an “input.xlsx” file in the folder **fyp\_code\_vX/engine/files** in the project folder.

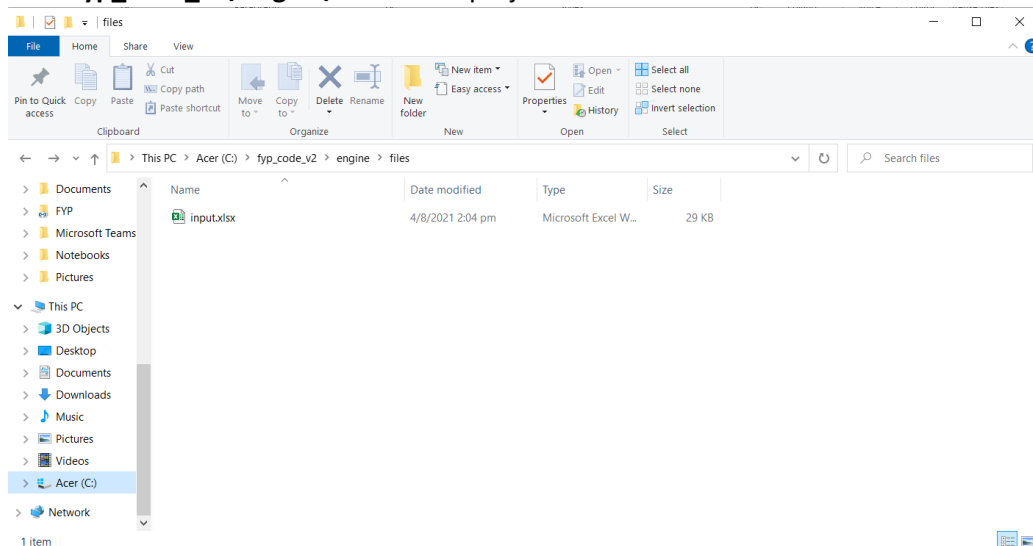


Figure 7: Example of where the input.xlsx should be at

Please also ensure that there is a “sector\_master\_definintion.xlsx” file in the folder **fyp\_code\_vX/engine** in the project folder.

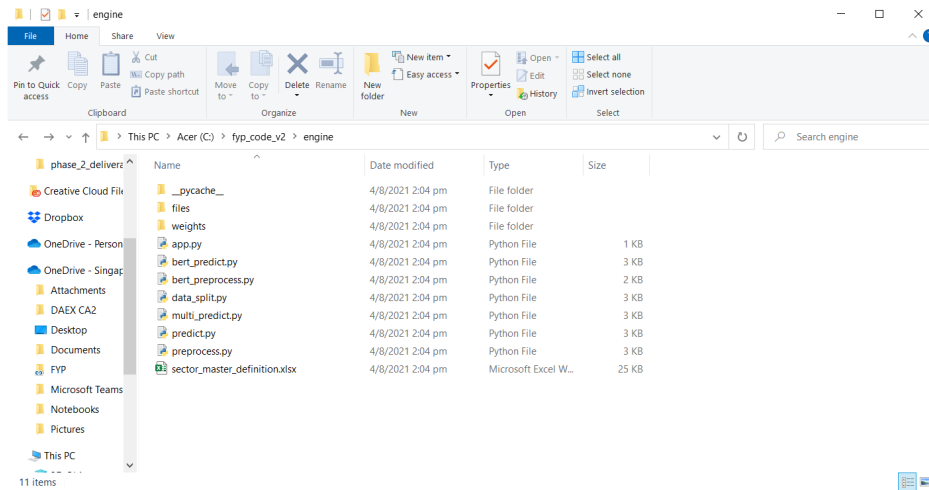


Figure 8: Example of where the sector\_master\_definition.xlsx should be at

**Note:** The following step number 3 is optional. This is valid for users who wish to create a custom input file.

- OPTIONAL:** If the user wishes to create a custom input file, do follow format of the already existing *“input.xlsx”* file, and make sure that the custom file is in the directory **fyp\_code\_vX/engine/files** .

Do note that if the file contains invalid entries, it will be automatically removed and will not show up in the *“output.xlsx”* file.

Company ID	Company	Country	EC	Service	Subservice	Archetype	Telephone	Website	Company Profile Information	Remarks
3.33996-138	CLARK DECO PTE. LTD.	SINGAPORE						<a href="http://www.clarkdeco.com/">http://www.clarkdeco.com/</a>	Public Deco Pte Ltd is an interior contractor based in Singapore. Incorporated in March 2006 and with a current strength of 35, we provide professional services for interior fit-out and construction works for residential, offices and retail spaces. We also offer a complete custom make carpentry and joinery services right from our in-house workshop.	
4.89165-138	UTIMACH CORPORATION PTE. LTD.	SINGAPORE						<a href="http://utimach.com.sg/utimach/index.php?lang=en">http://utimach.com.sg/utimach/index.php?lang=en</a>	The company provides civil engineering services and on-site post-tensioning products. Covered services in a variety of construction & supply, mapping, design, research and development, manufacturing and marketing. Our products are wholesale markets via a direct sale.	
5.10438-138	GUANRONG OVERLAND CRANES CO., LTD.	SINGAPORE						<a href="http://www.guanrongcranes.com/">http://www.guanrongcranes.com/</a>	GRCC is a joint venture between Riglogix (Pty) Ltd (Singapore) and the local management. The company brings together the expertise of a leading international construction group (Riglogix) and the local knowledge of some of the best project managers focusing on the Singapore market. In April 2013, GRCC was awarded by Tembus Group Development the design and build contract for the Phase 1 of the City Centre II, a government residential estate featuring 4,800 apartments, car parks and commercial facilities located along the edge near the waterfront of Singapore. In December 2014, GRCC was also awarded the 2nd phase of the City Centre II. The development will be composed of 4 residential towers, including three residential units, as well as a 20,000 sq park, located around the periphery of the site over two levels, providing a 1.4M sq park spaces, with more than 3,500 employees. GRCC will serve as the leading construction company in Singapore.	
5.44335-138	RYVA PTE LTD	SINGAPORE						<a href="http://www.ryva.com.sg/ryva/ryva-home.html">http://www.ryva.com.sg/ryva/ryva-home.html</a>	RYVA has experience and expertise in providing integrated design and engineering, procurement of machinery & equipment, and construction (integrated EPC) of business projects for industrial and process plants, mainly in energy, petrochemical, chemical and power industries.	
6.40465-138	TTL MALAYSIA SDN. BHD.	MALAYSIA						<a href="http://www.ttl.com.my/about-us/about-us-and-who-we-are.html">http://www.ttl.com.my/about-us/about-us-and-who-we-are.html</a>	ryva infocampus is a Technology Services & IT Consulting Company, headquartered in Singapore with offices in Kuala Lumpur, Malaysia and Singapore.	
4.51365-138	LYRA INFORMATION PTE. LTD.	SINGAPORE						<a href="http://www.lyra.com.sg/lyra/lyra-home.html">http://www.lyra.com.sg/lyra/lyra-home.html</a>	ryva infocampus is a Technology Services & IT Consulting Company, headquartered in Singapore with offices in Kuala Lumpur, Malaysia and Singapore.	
2.28920-138	KRYVIAN CONSTRUCTION PTE. LTD.	SINGAPORE						<a href="http://www.kryvia.com.sg/kryvia/kryvia-home.html">http://www.kryvia.com.sg/kryvia/kryvia-home.html</a>	ryva infocampus is a Technology Services & IT Consulting Company, headquartered in Singapore with offices in Kuala Lumpur, Malaysia and Singapore.	
8.91620-138	HAULUM HAULDRIGH SDN. BHD.	MALAYSIA						<a href="http://www.haulum.com.my/haulum/haulum-home.html">http://www.haulum.com.my/haulum/haulum-home.html</a>	ryva infocampus is a Technology Services & IT Consulting Company, headquartered in Singapore with offices in Kuala Lumpur, Malaysia and Singapore.	
3.89620-138	SINGAPORE RADIO & INDUSTRY PTE LTD	SINGAPORE						<a href="http://www.singapore-radio.com.sg/singapore-radio/home.html">http://www.singapore-radio.com.sg/singapore-radio/home.html</a>	ryva infocampus is a Technology Services & IT Consulting Company, headquartered in Singapore with offices in Kuala Lumpur, Malaysia and Singapore.	
3.84961-138	INTECART CONSTRUCTION SDN. BHD.	MALAYSIA						<a href="http://www.intecart.com.my/intecart/intecart-home.html">http://www.intecart.com.my/intecart/intecart-home.html</a>	ryva infocampus is a Technology Services & IT Consulting Company, headquartered in Singapore with offices in Kuala Lumpur, Malaysia and Singapore.	
2.77617-138	PET ENGINEERING PTE LTD	SINGAPORE						<a href="http://www.pet-engineering.com.sg/pet-engineering/home.html">http://www.pet-engineering.com.sg/pet-engineering/home.html</a>	ryva infocampus is a Technology Services & IT Consulting Company, headquartered in Singapore with offices in Kuala Lumpur, Malaysia and Singapore.	
6.02086-138	SOHTEO (SINGAPORE) PTE. LTD.	SINGAPORE						<a href="http://www.sohteo.com.sg/sohteo/sohteo-home.html">http://www.sohteo.com.sg/sohteo/sohteo-home.html</a>	ryva infocampus is a Technology Services & IT Consulting Company, headquartered in Singapore with offices in Kuala Lumpur, Malaysia and Singapore.	
2.83490-138	CONTINUAU SDN BHD	MALAYSIA						<a href="http://www.continuau.com.my/continuau/continuau-home.html">http://www.continuau.com.my/continuau/continuau-home.html</a>	ryva infocampus is a Technology Services & IT Consulting Company, headquartered in Singapore with offices in Kuala Lumpur, Malaysia and Singapore.	
4.23627-138	OK ARCHITECTS PTE LTD	SINGAPORE						<a href="http://www.okarchitects.com.sg/okarchitects/okarchitects-home.html">http://www.okarchitects.com.sg/okarchitects/okarchitects-home.html</a>	ryva infocampus is a Technology Services & IT Consulting Company, headquartered in Singapore with offices in Kuala Lumpur, Malaysia and Singapore.	
1.00105-138	SP ECOVAMERSE (MALAYSIA) SDN. BHD.	MALAYSIA						<a href="http://www.sp-ecovamerse.com.my/sp-ecovamerse/home.html">http://www.sp-ecovamerse.com.my/sp-ecovamerse/home.html</a>	ryva infocampus is a Technology Services & IT Consulting Company, headquartered in Singapore with offices in Kuala Lumpur, Malaysia and Singapore.	

Figure 9: Snippet example of input.xlsx



## Execution Of Engine

1. To run the Engine, simply run the following code in powershell terminal setup previously  
**cd engine**  
**python app.py**

The code may take long to run as the model is predicting.

2. Once done, the program will end in the terminal. Below is an example of what should be reflected on the terminal once the program has run finish.

```
Anaconda Powershell Prompt (anaconda3)
(env) (fypEngine) PS C:\fyp_code_v2> cd engine
(env) (fypEngine) PS C:\fyp_code_v2\engine> python app.py

Loading Labels... Done!
Processing Labels... Done!
Building Labels... Done!
Loading input... Done!
Preprocessing input... Done!
Performing prediction... Done!
Processing predictions... Done!
Writing predictions... Done!

32/33 rows predicted. Row(s) 24 dropped as they were invalid.
(env) (fypEngine) PS C:\fyp_code_v2\engine>
```

Figure 10: Screenshot of the execution of the program once completed.

The result of the program will be an output file labelled as “*output.xlsx*”. The file can be found in the directory **fyp\_code\_vX/engine/files**. The output file will include the filled values for the respective columns: Sector, Subsector, Archetype and Valuechain.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
Company	Company	Country	PIC	Sector	Subsector	Archetype	Valuechain	Websites	Profile	Inf	Remarks											
3.34E+18	CUBIC DEK SINGAPORE	CNI		buildings & buildings	MIDSTREA	https://www.Cubic-Decs-Pte-Ltd-is-an-interior-contractor-based-in-Singapore-Incorporated-in-March-2005-and-with-a-current-strength-of-30-we-provide-professional services																
4.87E+18	UTRACON SINGAPORE	CNI		buildings & buildings	MIDSTREA	https://utr.The-Company-provides-civil-engineering-services-and-on-site-post-tensioning products																
9.11E+18	GUANGDC SINGAPORE	CNI		building m	building m	MIDSTREA	https://www.Overland-Ceramics-is-a-ceramic-tile-manufacturer-supplier-integrating design-research-and-development-manufacturing-and-marketing-Our products are															
1.44E+18	BYMA PTE SINGAPORE	CNI		buildings & buildings	MIDSTREA	https://rei.BYMA-is-a-joint-venture-between-Bouygues-Batiment-International-and-SPA-Project-Management-The-company-brings-together-the-expertise-of-a leading int																
8.6E+18	TTCL MAL MALAYSIA	CNI		utilities	cnl_services	MIDSTREA	https://www.TTCL-has-experiences-and-expertises-in-providing-integrated design-and-engineering-procurement-of-machinery-equipment-and-construction Integrated Ef															
4.53E+18	LYRA INFOS SINGAPORE	TMT		it_services	mec oem	MIDSTREA	https://rei.Lyra-Infosystems-is-a-Technology-Services-&IT-Consulting-Company-headquartered-in-Bangalore-with-offices-in-Delhi-Mumbai-and-Singapore															
1.27E+18	WNYUAN SINGAPORE	CNI		buildings & buildings	MIDSTREA	https://lsg.We-are-a-rapidly-growing-development-&construction company																
8.92E+18	HARUM M MALAYSIA	CNI		buildings & buildings	MIDSTREA	https://www.TRAIDING-OF-BUILDING-MATERIALS-SPECIALISES-IN-MECHANICAL-&ELECTRICAL-ENGINEERING-AND-CIVIL-ENGINEERING WORKS																
3.86E+18	SINGAPOR SINGAPORE	TMT		consumer	consumer	DOWNSTR	https://www.Importers-and-exporters-of-gas-cookers-and-dealers-in-electrical appliances															
3.95E+18	MEC JATI MALAYSIA	CNI		buildings & buildings	MIDSTREA	https://mei.MEC-JATI-CONSORTIUM-SDN-BHD-479906-A-is-a-Malaysian-Bumiputera status company-G7-that-is-incorporated-on-26th-March-1999-with-an objective of																
3.28E+18	181 ENGI SINGAPORE	CNI		buildings & buildings	MIDSTREA	https://www.Engineering-services-undertaken-by-PBT-include-Sub-Structure-Super-Structure-Civil-Architecture-&Interior-Decoration																
6.05E+18	SOHETO S SINGAPORE	TMT		consumer	consumer	DOWNSTR	http://sch.Soheto-Services-is-the-Authorized-Agent-and-Service-Center-for-Sony-Professional-Products-as-well-as-Fujifilm-Digital-Cameras-in-Cambodia-We have been in															
1.81E+18	CONTAMAJ MALAYSIA	CNI		buildings & buildings	MIDSTREA	https://www.Contamaju-Sdn-Bhd-is-an-enterprise-in-Malaysia-with-the-main office-in-Kuala-Lumpur-It-operates-in-the-Construction industry																
4.26E+18	DP ARCH SINGAPORE	CNI		buildings & buildings	MIDSTREA	https://www.Since-its-inception-in-1967-DP-has-designed-many-of-the-country-s-most important public-projects-and-notable landmarks-Each of these has played a critical																
1.04E+18	SP ECOM MALAYSIA	TMT		it_services	mec oem	MIDSTREA	https://www.SP-eCommerce-is-a-full-service-eCommerce-enabler-that-provides-global brands with-Asia-Pacific-s-first-end-to-end-managed-eCommerce-solution-including															
3.68E+18	CREST BUI MALAYSIA	CNI		buildings & buildings	MIDSTREA	https://www.CBHB-Group-has-a-proven-and-established-track-record-in-the-sector-especially-in-the-commercial-residential-and-institutional-building-construction-The-Gr																
5.05E+18	AVP ELECT HONG KONG	TMT		consumer	consumer	DOWNSTR	http://www.AVP-Electronics-Ltd-serves-as-a-supply-channel-for-a wide range of products-from-Samsung-Electronics-in-the-China region-which included Memory-CMOS-S															
8.23E+18	SHORE SI SINGAPORE	TMT		it_services	mec oem	MIDSTREA	https://cai.Launched-in-2015-it-is-a-platform-tailored-for-the-region-providing customers-with-an-easy-secure-and-fast-online-shopping-experience-through strong paym															
8.27E+18	EXCELPOT SINGAPORE	TMT		consumer	consumer	MIDSTREA	https://www.Excelpoint-Technology-Ltd-the-Company-and-its-subsidiaries-Excelpoint-or-the-Group-are-one-of-the-leading-regional business-to-business-B2B-p															
6.38E+17	Optus Fina AUSTRALIA	TMT		telecomm	mec oem	UPSTREA	https://www.Optus-is-an-Australian leader-in-integrated-telecommunications-delivering cutting-edge-communications-information technology-and-entertainment services															
5.34E+18	HOSPITALI SINGAPORE	TMT		it_services	mec oem	MIDSTREA	https://www.HRS-is-Oracle-s-largest-hospitality-partner-worldwide-providing coverage-in-over-77-countries-to-more-than-6000-customers-Recognized-as-an-official Oracle															
3.85E+18	TPZP FAM SINGAPORE	TMT		consumer	consumer	DOWNSTR	https://www.TPZP-FAMILY-is-an-ACRA-registered entity-that-has-been operating for 14 years 7 months in Singapore since its incorporation in 2006 Officially TPZP FAM															
7.36E+18	HAIER ELE THAILAND	TMT		consumer	consumer	DOWNSTR	https://www.Haier-brand-Founded-in-1927-as-a brand-of-home-appliances-Haier-Group-Haier-was-converted-into-the era-of-the Internet of Things-has-been introduced to															
3.64E+18	LABCON S SINGAPORE	CNI		buildings & buildings	MIDSTREA	https://labc.Established-in-1989-as-a sole proprietorship-the main activities of Labcon General Contractor (LGC) had-been construction works-for-the commercial-indust																
3.64E+18	SINGAPOR SINGAPORE	TMT		telecomm	mec oem	MIDSTREA	https://lgi.The-Singtel-Group-is-Asia-s-leading-communications-group-We-provide-a diverse range of services-including fixed-mobile-data-internet-TV-infocomms tech															
7.5E+18	EXCELSIOR SINGAPORE	CNI		buildings & buildings	MIDSTREA	https://lgi.EXCELSIOR-ENGINEERING-is-an-ACRA-registered entity-that-has-been operating for 36 years 2 months in Singapore since its incorporation in 1985 Officially																

Figure 11: Snippet of how it looks like in output.xlsx



**Note: The following step number 3 is optional. This is valid for users who wish to predict results based on another separate excel file.**

3. **OPTIONAL:** To do another prediction with another excel file, simply repeat from step 2 of the previous section: **Preparing libraries and dataset.**

# Appendix A

## Unable to install packages due to an EnvironmentError

1. If users encounter an OS error stating that the package could not be installed as there is no such file or directory when running the command in point 1 of **Preparing libraries and dataset**, it is most likely due to the file path being too long. To solve this, search up the Registry Editor in the search bar. When promoted to allow this app to make changes to your device, click **Yes**.

Copy paste the following path into the search bar of the Registry Editor found at the top and replace with the word “Computer”. Once done, press enter.

**Computer\HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Control\FileSystem**

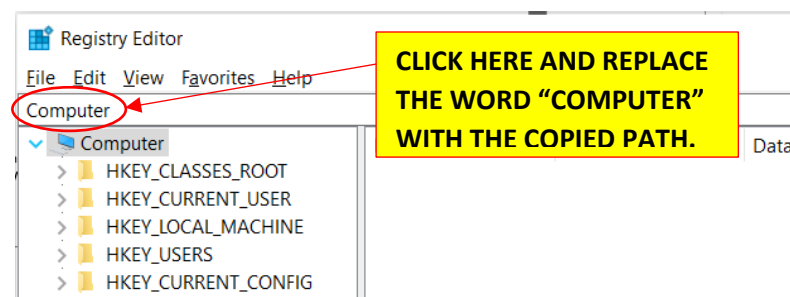


Figure 12: Snippet of where the search bar is at

2. Once done, scroll to find the row name labelled as “LongPathsEnabled”. Right click it and click **Modify**.

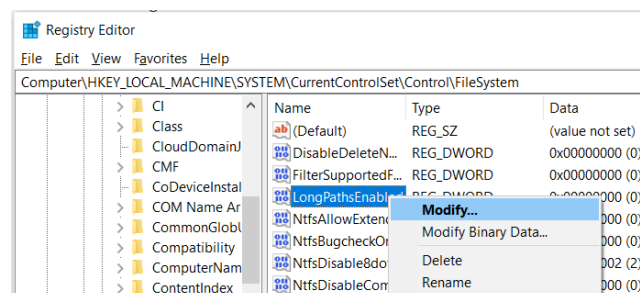


Figure 13: Snippet of selecting the row name and clicking on Modify

3. Then change the value of **Value data** from 0 to 1. Click Ok.

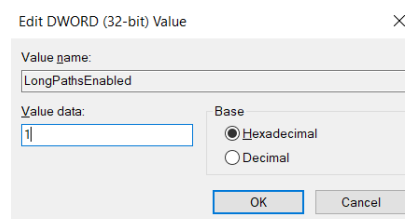


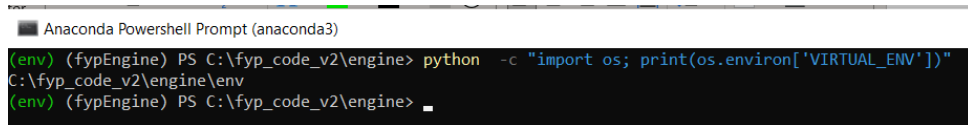
Figure 14: Changing LongPaths binary value from 0 to 1

- Once completed, run the following command to deactivate the env and delete the environment folder with all its contents.

First run this command to get the file path of where the env folder is saved at

```
python -c "import os; print(os.environ['VIRTUAL_ENV'])"
```

Once done, copy the output file path.



```
Anaconda Powershell Prompt (anaconda3)
(env) (fypEngine) PS C:\fyp_code_v2\engine> python -c "import os; print(os.environ['VIRTUAL_ENV'])"
C:\fyp_code_v2\engine\env
(env) (fypEngine) PS C:\fyp_code_v2\engine> _
```

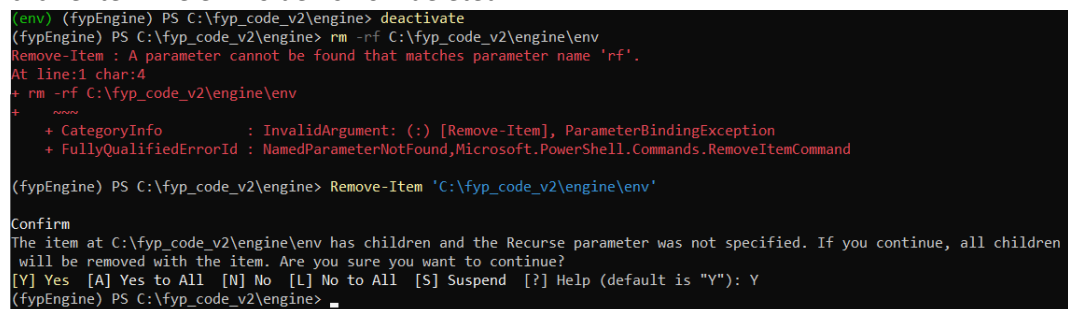
Figure 15: Example of the output

In the powershell terminal, type **deactivate**.

Followed by this this following command, whereby **<FILE\_PATH>** is the output file path as copied previously.

```
Remove-Item '<FILE_PATH>'
```

And when prompted if children and recurse parameters are not specified, type **Y** and click enter. The env folder is now deleted.



```
(env) (fypEngine) PS C:\fyp_code_v2\engine> deactivate
(fypEngine) PS C:\fyp_code_v2\engine> rm -rf C:\fyp_code_v2\engine\env
Remove-Item : A parameter cannot be found that matches parameter name 'rf'.
At line:1 char:4
+ rm -rf C:\fyp_code_v2\engine\env
+ ~~~~~
+ CategoryInfo          : InvalidArgument: (:) [Remove-Item], ParameterBindingException
+ FullyQualifiedErrorId : NamedParameterNotFound,Microsoft.PowerShell.Commands.RemoveItemCommand

(fypEngine) PS C:\fyp_code_v2\engine> Remove-Item 'C:\fyp_code_v2\engine\env'

Confirm
The item at C:\fyp_code_v2\engine\env has children and the Recurse parameter was not specified. If you continue, all children
will be removed with the item. Are you sure you want to continue?
[Y] Yes [A] Yes to All [N] No [L] No to All [S] Suspend [?] Help (default is "Y"): Y
(fypEngine) PS C:\fyp_code_v2\engine> _
```

Figure 16: Example of how step 4 is executed

- Once completed, close the Anaconda Powershell Prompt and restart from the section **Activating Conda Environment**.



**Note:** If users are worried that step 3 of this appendix may affect the file system in future, they can change the binary back to 0 after running the engine.