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| МИНОБРНАУКИ РОССИИ |
| Федеральное государственное бюджетное образовательное учреждение высшего образования **«МИРЭА − Российский технологический университет»**  **РТУ МИРЭА** |

**Институт информационных технологий (ИИТ)**

**Кафедра практической и прикладной информатики (ППИ)**

**ОТЧЕТ ПО ПРАКТИЧЕСКОЙ РАБОТЕ**

по дисциплине «Интерфейсы прикладного программирования»

**Практическое занятие № 2**

|  |  |  |  |
| --- | --- | --- | --- |
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| Отчет представлен | «28» сентября 2022г. | |  | |

Москва 2022 г.

**ЧАСТЬ 1.**

По вводным дынным API Currency Layer поддерживает 161 валюту и предлагает 1500 бесплатных запросов в месяц.

Для того, чтобы получить список поддерживаемых валют API Currency Layer.

**Код:**

**Фрагмент исходного кода**

<http://api.coinlayer.com/api/live?access_key=46cf57d45aff67f42ea9c62707927f67>

**Кодировки валют в соответствии с заданием:**

Английский фунт стерлингов – GBP

Евро – EUR

Иен – JPY

Доллар США – USD

**Результат работы кода:**

{"success":true,"terms":"https:\/\/coinlayer.com\/terms","privacy":"https:\/\/coinlayer.com\/privacy","timestamp":1664792466,"target":"USD","rates":{"ABC":59.99,"ACP":0.014931,"ACT":0.00107,"ACT\*":0.017178,"ADA":0.421977,"ADCN":0.00013,"ADL":0.01515,"ADX":0.1706,"ADZ":0.0023,"AE":0.0745,"AGI":0,"AIB":0.005626,"AIDOC":1.0361897e-5,"AION":0.03828,"AIR":0.00974,"ALT":0.565615,"AMB":0.017239,"AMM":0.006503,"ANT":1.661,"APC":0.0017,"APPC":0.001055,"ARC":0.0169,"ARCT":0.00061,"ARDR":0.094659,"ARK":0.48742,"ARN":0.001143,"ASAFE2":0.4,"AST":0.107833,"ATB":0.017,"ATM":3.8001,"AURS":0.352867,"AVT":1.5,"BAR":5.7775,"BASH":0.0056,"BAT":0.295827,"BAY":0.0644,"BBP":0.0005,"BCD":0.180531,"BCH":114.966286,"BCN":0.000332,"BCPT":0.002298,"BEE":1.0e-6,"BIO":0.0008,"BLC":0.072132,"BLOCK":0.18,"BLU":0.00054,"BLZ":0.0912,"BMC":0.001317,"BNB":284.99845,"BNT":0.428971,"BOST":0.048,"BQ":7.775e-5,"BQX":2.720931,"BRD":0.016073,"BRIT":0.03,"BT1":0,"BT2":0,"BTC":19159.121277,"BTCA":0.00036,"BTCS":0.01201,"BTCZ":19254.84,"BTG":20.015157,"BTLC":9,"BTM":0.078282,"BTM\*":0.122609,"BTQ":0.01,"BTS":0.010405,"BTX":0.11341,"BURST":0.017348,"CALC":0.0006,"CAS":0.007,"CAT":0.093714,"CCRB":0.08888,"CDT":0.018348,"CESC":0.0037,"CHAT":0.000668,"CJ":0.000898,"CL":0.028,"CLD":0.02,"CLOAK":10,"CMT\*":0.03954,"CND":0.00057,"CNX":1.996594,"CPC":0.0005,"CRAVE":0.4,"CRC":0.08475,"CRE":1.316485,"CRW":0.02202,"CTO":0.005,"CTR":0.002449,"CVC":0.123986,"DAS":0.937816,"DASH":40.4254,"DAT":3.0646144e-5,"DATA":0,"DBC":0.00069,"DBET":0.027656,"DCN":1.4006e-6,"DCR":26.05115,"DCT":0.00039,"DEEP":0.001,"DENT":0.000917,"DGB":0.009302,"DGD":153.2312,"DIM":9.4957e-5,"DIME":3.0e-5,"DMD":0.58782,"DNT":0.0415,"DOGE":0.060528,"DRGN":0.01822,"DRZ":3,"DSH":252.13175,"DTA":3.781e-5,"EC":50,"EDG":0.03799,"EDO":0.42315,"EDR":0.00023,"EKO":6.555e-5,"ELA":1.611,"ELF":0.0938,"EMC":0.0161,"EMGO":0.43382,"ENG":0.006895,"ENJ":0.439644,"EOS":1.169862,"ERT":0.2054,"ETC":27.152,"ETH":1291.248018,"ETN":0.002861,"ETP":0.031703,"ETT":2.9,"EVR":0.104931,"EVX":0.012941,"FCT":0.04554,"FLP":0.0095,"FOTA":0.000109,"FRST":0.78001,"FUEL":21.56,"FUN":0.00729,"FUNC":0.00061,"FUTC":0.004,"GAME":0.16611,"GAS":2.228883,"GBYTE":14.903603,"GMX":6.467e-5,"GNO":116.345,"GNT":0.129185,"GNX":0.003058,"GRC":0.0067,"GRS":10,"GRWI":10000,"GTC":1.802333,"GTO":0.01935,"GUP":0.000619,"GVT":0.078761,"GXS":0.3932,"HAC":0.000638,"HNC":0,"HSR":7.929715,"HST":0.0027,"HVN":0.03529,"ICN":0.1452,"ICOS":17,"ICX":0.231305,"IGNIS":0.00462,"ILC":0.098703,"INK":0.000481,"INS":0.118367,"INSN":0.0473,"INT":0.00299,"IOP":15.455555,"IOST":0.011574,"ITC":0.000427,"KCS":9.06,"KICK":0.000324,"KIN":1.1339e-5,"KLC":0.000703,"KMD":0.255417,"KNC":1.123545,"KRB":6,"LA":0.05785,"LEND":0.734128,"LEO":4.108955,"LINDA":0.000271,"LINK":7.124238,"LOC":0.71,"LOG":0.060174,"LRC":0.2888,"LSK":0.886373,"LTC":52.701225,"LUN":0.014365,"LUX":2.09e-6,"MAID":0.183567,"MANA":0.685179,"MCAP":0.005398,"MCO":4.16,"MDA":0.04903,"MDS":0.000343,"MIOTA":0.27603,"MKR":785.465667,"MLN":19.02,"MNX":0.028649,"MOD":0.224,"MOIN":0.033073,"MONA":0.427692,"MTL":1.03,"MTN\*":0.009575,"MTX":0.003008,"NAS":0.04136,"NAV":0.022711,"NBT":0.00666,"NDC":0.008989,"NEBL":2.486089,"NEO":8.445528,"NEU":0.033606,"NEWB":0.002604,"NGC":0.043023,"NKC":0.001215,"NLC2":0.599935,"NMC":5.867998,"NMR":14.307867,"NULS":0.1906,"NVC":10,"NXT":0.002932,"OAX":0.31,"OBITS":0.015,"OC":0.000328,"OCN":8.322e-5,"ODN":0.5,"OK":0.003448,"OMG":1.66146,"OMNI":0,"ORE":0,"ORME":1.235715,"OST":0.000475,"OTN":0,"OTX":0.023,"OXY":0.0484,"PART":3.951477,"PAY":0.01498,"PBT":17.686837,"PCS":0.019961,"PIVX":0.296119,"PIZZA":0.001,"PLBT":20,"PLR":0.004467,"POE":2.4899199e-5,"POLY":0.2398,"POSW":0.48712,"POWR":0.1902,"PPC":0.534,"PPT":0.0669,"PPY":5.45,"PRC":3.0e-5,"PRES":0.219998,"PRG":0.450324,"PRL":0.061361,"PRO":0.63,"PURA":0.25,"PUT":0,"QASH":0.02701,"QAU":0,"QSP":0.01464,"QTUM":2.791661,"QUN":0.008318,"R":0.50526,"RBIES":1,"RCN":0.003093,"RDD":0.000323,"RDN":0,"RDN\*":0.324446,"REBL":0.001369,"REE":1.0e-5,"REP":7.235,"REQ":0.105,"REV":0.000768,"RGC":0.001,"RHOC":0.178417,"RIYA":0.090025,"RKC":5,"RLC":1.1935,"RPX":0.061017,"RUFF":0.00036,"SALT":0.768708,"SAN":0.063223,"SBC":7,"SC":0.00342,"SENT":0.000308,"SHIFT":0,"SIB":5.177,"SMART":0.000555,"SMLY":6.0e-5,"SMT\*":0.011226,"SNC":0.025328,"SNGLS":0.000402,"SNM":0.30377,"SNT":0.02741,"SPK":0.0084,"SRN":0.002682,"STEEM":0.21511,"STK":1.949421,"STORJ":0.442204,"STRAT":0.247288,"STU":0.00019,"STX":0.3172,"SUB":0.0006,"SUR":0.01,"SWFTC":0.001541,"SYS":0.1626,"TAAS":10,"TESLA":0.019139,"THC":0.002682,"THETA":1.043538,"THS":0.00171,"TIO":0.085,"TKN":0,"TKY":0.000171,"TNB":0.00661,"TNT":0.004,"TOA":0.002397,"TRC":6.2,"TRIG":0.379246,"TRST":0.04799,"TRUMP":0.055,"TRX":0.061349,"UBQ":0.035818,"UNO":13.4,"UNRC":6.0e-5,"UQC":8,"USDT":1.001056,"UTK":0.104837,"UTT":0.044,"VEE":0.001786,"VEN":2.667755,"VERI":23.736235,"VIA":0.055163,"VIB":0.073795,"VIBE":0.002681,"VOISE":0.00018,"VOX":0.509035,"VRS":0.1375,"VTC":0.197093,"VUC":9.9e-5,"WABI":0.124271,"WAVES":3.725135,"WAX":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**Часть 2**

В данном задании необходимо протестировать API Currency Layer, путем создания запроса об исторических курсах валют - для 22 февраля 2018г. Для евро, фунтов стерлингов и иен с исходной валютой доллар США.

Для выполнения данного кода потребуется мой API - 8QxY7Z5qzfw55O78CQ65Brf4HWEMMIjm, сайт для выполнения работы - <https://currencylayer.com/>.

Код на Python для создания запроса об исторических курсах валют для 22 февраля 2018 года, для евро, фунтов стерлингов и иен с исходной валютой доллар США.

результат работы кода и исходный код:

ИСХОДНЫЙ КОД:

import requests

url = "https://api.apilayer.com/currency\_data/timeframe?start\_date=**2018-02-22**&end\_date=**2018-02-22**"

payload = {}

headers= {

"apikey": "8QxY7Z5qzfw55O78CQ65Brf4HWEMMIjm"

}

response = requests.request("GET", url, headers=headers, data = payload)

status\_code = response.status\_code

result = response.text

Листинг кода 1

РЕЗУЛЬТАТ РАБОТЫ КОДА:

{

«change»: true,

“end\_date”: “2018-02-22”,

“quotes”: {

“USDEUR”: {

“change”: 0,

“change\_pct”: 0,

“end\_rate”: 0.81103,

“start\_rate”: 0.81103

},

“USDGBP”: {

“change”: 0,

“change\_pct”: 0,

“end\_rate”: 0.71681,

“start\_rate”: 0.71681

},

“USDJPY”: {

“change”: 0,

“change\_pct”: 0,

“end\_rate”: 106.819035,

“start\_rate”: 106.819035

}

},

“source”: “USD”,

«start\_date»: «2018-02-22»,

«success»: true

}

Листинг кода 2

Для выполнения данной практической работы мною было использовано ПО Postman, а так же веб-сервис APYLAYER.

Возвращаемый представлен в формате JSON.

**Часть 3**

**Исходный код:**

import requests

url = “https://api.apilayer.com/currency\_data/change?start\_date=**2016-02-25**&end\_date=**2017-02-21**”

payload = {}

headers= {

“apikey”: “8QxY7Z5qzfw55O78CQ65Brf4HWEMMIjm”

}

response = requests.request(“GET”, url, headers=headers, data = payload)

status\_code = response.status\_code

result = response.text

Copy

 Run Code

Рисунок 1.

**Результат работы:**

{

"change": true,

"end\_date": "2017-02-21",

"quotes": {

"EURUSD": {

"change": -0.0478,

"change\_pct": -4.3405,

"end\_rate": 1.05452,

"start\_rate": 1.102368

}

},

"source": "EUR",

"start\_date": "2016-02-25",

"success": true

}