1. Veri setini pandas dataFrame ile bilgisayara alınız.

```
# Pandas Kütüphanesini İçe Aktarma
import pandas as pd

# CSV Dosyasını Pandas ile Oku
df_yucel = pd.read_csv('YUCEL_DF.csv')  # CSV dosyasını DataFrame'e
yükle
```

1. DataFrame verileri ile ilgili özet bilgileri ekranda gösteriniz.

```
# Veri Setinin İlk 5 Satırını Görme
df_yucel.info()

<class 'pandas.core.frame.DataFrame'>
RangeIndex: 1275 entries, 0 to 1274
Data columns (total 23 columns):
 #   Column                   Non-Null Count  Dtype
---  ------                   --------------  -----
 0   Sirket                   1275 non-null   object
 1    Urun                    1267 non-null   object
 2    Tur Adi                 1267 non-null   object
 3    Inc                     1267 non-null   float64
 4    Ram                     1267 non-null   float64
 5    Isletim Sistemi         1267 non-null   object
 6    Agirlik                 1267 non-null   float64
 7   Fiyat(Euro)              1267 non-null   float64
 8    Ekran                   1267 non-null   object
 9    Ekran Genisligi         1267 non-null   float64
 10   Ekran Yuksekligi        1267 non-null   float64
 11   Dokunmatik Ekran        1267 non-null   object
 12   IPS Panel               1267 non-null   object
 13   Retina Ekran            1267 non-null   object
 14   Islemci Sirketi         1267 non-null   object
 15   Islemci Frekansi        1267 non-null   float64
 16   Islemci Modeli          1267 non-null   object
 17   Birincil Depolama       1267 non-null   float64
 18   Ikincil Depolama        1267 non-null   float64
 19   Birincil Depolama Turu  1267 non-null   object
 20   Ikincil Depolama Turu   1267 non-null   object
 21   Grafik Karti Sirketi    1267 non-null   object
 22   Grafik Karti Modeli     1267 non-null   object
dtypes: float64(9), object(14)
memory usage: 229.2+ KB
```

1. pandas kütüphanesi versiyonunu bulunuz.

```
# Pandas kütüphanesinin versiyonunu kontrol etme
print("Pandas version: ", pd.__version__)

Pandas version:  2.2.2
```

1. Install edilen kütüphaneleri listeleyiniz.

```
import sys
yuklenen_kutuphaneler = sys.modules
print("Yüklenen Kütüphaneler")
for module in yuklenen_kutuphaneler:
    print(module)
```

```
Yüklenen Kütüphaneler
sys
builtins
_frozen_importlib
_imp
_thread
_warnings
_weakref
winreg
_io
marshal
nt
_frozen_importlib_external
time
zipimport
_codecs
codecs
encodings.aliases
encodings
encodings.utf_8
_signal
_abc
abc
io
__main__
_stat
stat
_collections_abc
genericpath
_winapi
ntpath
os.path
os
_sitebuiltins
encodings.cp1254
pywin32_system32
pywin32_bootstrap
_distutils_hack
site
importlib._bootstrap
importlib._bootstrap_external
warnings
```

```
importlib
importlib.machinery
importlib._abc
types
importlib.util
runpy
_operator
operator
itertools
keyword
reprlib
_collections
collections
_functools
functools
enum
_sre
re._constants
re._parser
re._casefix
re._compiler
copyreg
re
collections.abc
contextlib
_typing
typing.io
typing.re
typing
ipykernel._version
__future__
_json
json.scanner
json.decoder
json.encoder
json
errno
_locale
locale
signal
_weakrefset
threading
msvcrt
subprocess
jupyter_client._version
_wmi
platform
zmq.backend.select
cython_runtime
```

```
_cython_3_0_6
zmq.error
zmq.backend.cython.context
weakref
zmq.backend.cython.message
copy
math
_bisect
bisect
_random
_sha2
random
_struct
struct
_compat_pickle
_pickle
pickle
zmq.constants
zmq.backend.cython.socket
zmq.backend.cython._device
zmq.backend.cython._poll
zmq.backend.cython._proxy_steerable
zmq.backend.cython._version
zmq.backend.cython.error
zmq.backend.cython.utils
zmq.backend.cython
zmq.backend
atexit
zmq.utils
zmq.utils.interop
zmq.sugar.attrsettr
zmq._typing
zmq.utils.jsonapi
zmq.sugar.poll
zmq.sugar.socket
zmq.sugar.context
zmq.sugar.frame
zmq.sugar.tracker
zmq.sugar.version
zmq.sugar.stopwatch
zmq.sugar
zmq
concurrent
token
_tokenize
tokenize
linecache
textwrap
traceback
```

```
_string
string
logging
concurrent.futures._base
concurrent.futures
_heapq
heapq
_socket
select
selectors
socket
_ssl
binascii
base64
ssl
asyncio.constants
_ast
ast
_opcode
opcode
dis
inspect
asyncio.coroutines
_contextvars
contextvars
asyncio.format_helpers
asyncio.base_futures
asyncio.exceptions
asyncio.base_tasks
_asyncio
asyncio.events
asyncio.futures
asyncio.protocols
asyncio.transports
asyncio.log
asyncio.sslproto
asyncio.mixins
asyncio.locks
asyncio.timeouts
asyncio.tasks
asyncio.staggered
asyncio.trsock
asyncio.base_events
asyncio.runners
asyncio.queues
asyncio.streams
asyncio.subprocess
asyncio.taskgroups
asyncio.threads
```

```
_overlapped
asyncio.base_subprocess
asyncio.proactor_events
asyncio.selector_events
posixpath
fnmatch
zlib
_compression
_bz2
bz2
_lzma
lzma
shutil
tempfile
asyncio.windows_utils
asyncio.windows_events
asyncio
zmq._future
zmq.asyncio
urllib
ipaddress
urllib.parse
pathlib
traitlets.utils
traitlets.utils.bunch
traitlets.utils.descriptions
traitlets.utils.getargspec
traitlets.utils.importstring
traitlets.utils.sentinel
traitlets.utils.warnings
traitlets.traitlets
traitlets._version
traitlets.utils.decorators
traitlets
_queue
queue
jupyter_core.version
jupyter_core
jupyter_core.utils
jupyter_client.channelsabc
_hashlib
_blake2
hashlib
hmac
dataclasses
pprint
_datetime
datetime
tornado
```

```
numbers
logging.handlers
html.entities
html
array
tornado.speedups
tornado.util
tornado.escape
colorama.ansi
_ctypes
ctypes._endian
ctypes
ctypes.wintypes
colorama.win32
colorama.winterm
colorama.ansitowin32
colorama.initialise
colorama
tornado.log
tornado.concurrent
tornado.ioloop
socketserver
logging.config
traitlets.utils.text
gettext
argparse
traitlets.config.loader
traitlets.config.configurable
traitlets.utils.nested_update
traitlets.config.application
traitlets.config
traitlets.log
zmq.eventloop
zmq.eventloop.zmqstream
jupyter_client.adapter
dateutil._version
dateutil
calendar
six
_decimal
decimal
dateutil._common
dateutil.relativedelta
six.moves
dateutil.tz._common
dateutil.tz._factories
dateutil.tz.win
dateutil.tz.tz
dateutil.tz
```

```
dateutil.parser._parser
dateutil.parser.isoparser
dateutil.parser
_strptime
jupyter_client.jsonutil
jupyter_client.session
jupyter_client.channels
getpass
jupyter_client.clientabc
glob
platformdirs.api
platformdirs.version
platformdirs.windows
platformdirs
jupyter_core.paths
jupyter_client.localinterfaces
jupyter_client.utils
jupyter_client.connect
jupyter_client.client
jupyter_client.asynchronous.client
jupyter_client.asynchronous
jupyter_client.blocking.client
jupyter_client.blocking
jupyter_client.launcher
_uuid
uuid
_csv
csv
email
zipfile._path.glob
zipfile._path
zipfile
quopri
email._parseaddr
email.base64mime
email.quoprimime
email.errors
email.encoders
email.charset
email.utils
email.header
email._policybase
email._encoded_words
email.iterators
email.message
importlib.metadata._functools
importlib.metadata._text
importlib.metadata._adapters
importlib.metadata._meta
```

```
importlib.metadata._collections
importlib.metadata._itertools
importlib.resources.abc
importlib.resources._adapters
importlib.resources._common
importlib.resources._legacy
importlib.resources
importlib.abc
importlib.metadata
jupyter_client.provisioning.provisioner_base
jupyter_client.provisioning.factory
jupyter_client.provisioning.local_provisioner
jupyter_client.provisioning
jupyter_client.kernelspec
jupyter_client.managerabc
jupyter_client.manager
jupyter_client.multikernelmanager
jupyter_client
ipykernel.connect
ipykernel
IPython.core
IPython.core.getipython
IPython.core.release
pkgutil
sysconfig
pydoc
executing._exceptions
executing._position_node_finder
executing.executing
executing.version
executing
asttokens.line_numbers
asttokens.util
asttokens.asttokens
asttokens
fractions
pure_eval.utils
pure_eval.my_getattr_static
pure_eval.core
pure_eval.version
pure_eval
stack_data.utils
stack_data.core
stack_data.formatting
stack_data.serializing
stack_data.version
stack_data
pygments
pygments.formatters._mapping
```

```
pygments.plugin
pygments.util
pygments.formatters
pygments.styles._mapping
pygments.styles
pygments.formatter
pygments.console
pygments.token
pygments.style
pygments.formatters.terminal256
IPython.utils
IPython.utils.colorable
IPython.utils.ipstruct
IPython.utils.coloransi
IPython.utils.PyColorize
IPython.utils.encoding
IPython.utils.py3compat
IPython.core.excolors
cmd
bdb
codeop
code
pdb
IPython.core.debugger
IPython.core.display_trap
shlex
IPython.utils._process_common
IPython.utils._process_win32
IPython.utils.process
IPython.utils.path
IPython.utils.terminal
IPython.core.ultratb
IPython.utils._sysinfo
IPython.utils.sysinfo
IPython.core.crashhandler
IPython.utils.importstring
IPython.paths
IPython.core.profiledir
IPython.core.application
IPython.terminal
IPython.core.compilerop
IPython.core.error
IPython.utils.docs
IPython.utils.decorators
IPython.utils.text
IPython.core.magic_arguments
getopt
IPython.core.display_functions
mimetypes
```

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IPython.testing
IPython.testing.skipdoctest
IPython.core.display
IPython.lib
IPython.lib.display
IPython.display
IPython.utils.data
IPython.core.page
IPython.lib.pretty
IPython.utils.openpy
IPython.utils.dir2
IPython.utils.wildcard
pygments.lexers._mapping
pygments.modeline
pygments.lexers
pygments.filter
pygments.filters
pygments.regexopt
pygments.lexer
pygments.unistring
pygments.lexers.python
pygments.formatters.html
IPython.core.oinspect
IPython.utils.tokenutil
IPython.core.inputtransformer2
IPython.core.magic
IPython.core.hooks
IPython.core.autocall
IPython.core.macro
IPython.core.splitinput
IPython.core.prefilter
IPython.core.alias
IPython.core.builtin_trap
IPython.core.displayhook
IPython.core.displaypub
IPython.core.events
IPython.core.extensions
decorator
IPython.utils.sentinel
IPython.core.formatters
_sqlite3
sqlite3.dbapi2
sqlite3
IPython.core.history
IPython.core.logger
IPython.core.payload
IPython.core.usage
IPython.utils.capture
IPython.utils.io
```

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IPython.utils.strdispatch
IPython.utils.syspathcontext
IPython.core.async_helpers
IPython.core.interactiveshell
prompt_toolkit.application.current
prompt_toolkit.eventloop.utils
prompt_toolkit.eventloop.async_generator
prompt_toolkit.eventloop.inputhook
prompt_toolkit.eventloop
prompt_toolkit.application.run_in_terminal
prompt_toolkit.selection
prompt_toolkit.clipboard.base
prompt_toolkit.clipboard.in_memory
prompt_toolkit.clipboard
prompt_toolkit.cache
prompt_toolkit.enums
prompt_toolkit.filters.base
prompt_toolkit.filters.app
prompt_toolkit.filters.cli
prompt_toolkit.filters.utils
prompt_toolkit.filters
prompt_toolkit.document
prompt_toolkit.auto_suggest
prompt_toolkit.keys
prompt_toolkit.key_binding.key_bindings
wcwidth.table_vs16
wcwidth.table_wide
wcwidth.table_zero
wcwidth.unicode_versions
wcwidth.wcwidth
wcwidth
prompt_toolkit.utils
prompt_toolkit.key_binding.key_processor
prompt_toolkit.key_binding
prompt_toolkit.key_binding.vi_state
prompt_toolkit.cursor_shapes
prompt_toolkit.data_structures
prompt_toolkit.styles.base
prompt_toolkit.styles.named_colors
prompt_toolkit.styles.style
prompt_toolkit.styles.defaults
prompt_toolkit.styles.pygments
colorsys
prompt_toolkit.styles.style_transformation
prompt_toolkit.styles
prompt_toolkit.output.color_depth
prompt_toolkit.output.base
prompt_toolkit.output.flush_stdout
prompt_toolkit.output.plain_text
prompt_toolkit.output.defaults
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prompt_toolkit.output
prompt_toolkit.output.vt100
prompt_toolkit.mouse_events
prompt_toolkit.formatted_text.base
prompt_toolkit.formatted_text.ansi
xml
xml.dom.domreg
xml.dom
xml.dom.minicompat
xml.dom.NodeFilter
xml.dom.xmlbuilder
xml.dom.minidom
prompt_toolkit.formatted_text.html
prompt_toolkit.formatted_text.pygments
prompt_toolkit.formatted_text.utils
prompt_toolkit.formatted_text
prompt_toolkit.completion.base
prompt_toolkit.completion.deduplicate
prompt_toolkit.completion.filesystem
prompt_toolkit.completion.word_completer
prompt_toolkit.completion.fuzzy_completer
prompt_toolkit.completion.nested
prompt_toolkit.completion
prompt_toolkit.history
prompt_toolkit.search
prompt_toolkit.validation
prompt_toolkit.buffer
prompt_toolkit.input.base
prompt_toolkit.input.defaults
prompt_toolkit.input
prompt_toolkit.input.typeahead
prompt_toolkit.key_binding.bindings
prompt_toolkit.key_binding.bindings.scroll
prompt_toolkit.key_binding.bindings.page_navigation
prompt_toolkit.lexers.base
prompt_toolkit.lexers.pygments
prompt_toolkit.lexers
prompt_toolkit.layout.utils
prompt_toolkit.layout.processors
prompt_toolkit.layout.controls
prompt_toolkit.layout.dimension
prompt_toolkit.layout.margins
prompt_toolkit.layout.mouse_handlers
prompt_toolkit.layout.screen
prompt_toolkit.layout.containers
prompt_toolkit.layout.layout
prompt_toolkit.layout.menus
prompt_toolkit.layout.scrollable_pane
prompt_toolkit.layout
```

```
prompt_toolkit.key_binding.bindings.completion
prompt_toolkit.key_binding.bindings.named_commands
prompt_toolkit.key_binding.bindings.basic
prompt_toolkit.key_binding.bindings.cpr
prompt_toolkit.key_binding.bindings.emacs
prompt_toolkit.key_binding.bindings.mouse
prompt_toolkit.input.ansi_escape_sequences
prompt_toolkit.input.vt100_parser
prompt_toolkit.key_binding.digraphs
prompt_toolkit.key_binding.bindings.vi
prompt_toolkit.key_binding.defaults
prompt_toolkit.key_binding.emacs_state
prompt_toolkit.layout.dummy
prompt_toolkit.renderer
prompt_toolkit.application.application
prompt_toolkit.application.dummy
prompt_toolkit.application
prompt_toolkit.key_binding.bindings.focus
prompt_toolkit.widgets.toolbars
prompt_toolkit.widgets.base
prompt_toolkit.widgets.dialogs
prompt_toolkit.widgets.menus
prompt_toolkit.widgets
prompt_toolkit.shortcuts.dialogs
prompt_toolkit.shortcuts.progress_bar.formatters
prompt_toolkit.shortcuts.progress_bar.base
prompt_toolkit.shortcuts.progress_bar
prompt_toolkit.key_binding.bindings.auto_suggest
prompt_toolkit.key_binding.bindings.open_in_editor
prompt_toolkit.shortcuts.prompt
prompt_toolkit.shortcuts.utils
prompt_toolkit.shortcuts
prompt_toolkit
prompt_toolkit.patch_stdout
unicodedata
IPython.core.guarded_eval
IPython.core.latex_symbols
IPython.utils.generics
parso.utils
parso.tree
parso.python
parso.python.token
parso.python.tokenize
parso.pgen2.grammar_parser
parso.pgen2.generator
parso.pgen2
parso.parser
parso._compatibility
difflib
```

```
parso.python.prefix
parso.python.tree
parso.python.parser
parso.python.diff
gc
parso.cache
parso.normalizer
parso.python.errors
parso.python.pep8
parso.file_io
parso.grammar
parso
jedi.parser_utils
jedi.debug
jedi.settings
jedi.cache
jedi.file_io
jedi.inference.cache
jedi.inference.helpers
jedi.inference.utils
jedi.inference.base_value
jedi.inference.sys_path
jedi.inference.recursion
jedi.inference.flow_analysis
jedi.common
jedi.inference.lazy_value
jedi.inference.docstrings
jedi.plugins
jedi.inference.names
jedi.inference.filters
jedi.inference.compiled.getattr_static
jedi.inference.compiled.access
jedi.inference.signature
jedi.inference.context
jedi.inference.compiled.value
jedi.inference.compiled
jedi.inference.analysis
jedi.inference.gradual
jedi.inference.value.module
jedi.inference.value.dynamic_arrays
jedi.inference.value.iterable
jedi.inference.arguments
jedi.inference.parser_cache
jedi.inference.gradual.generics
jedi.inference.value.function
jedi.inference.value.klass
jedi.inference.value.instance
jedi.inference.value
jedi.inference.gradual.base
```

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jedi.inference.gradual.type_var
jedi.inference.gradual.typing
jedi.inference.gradual.stub_value
jedi.inference.gradual.typeshed
jedi._compatibility
jedi.inference.compiled.subprocess.functions
jedi.api.exceptions
jedi.inference.compiled.subprocess
jedi.inference.imports
jedi.inference.param
jedi.inference.gradual.annotation
jedi.inference.value.decorator
jedi.inference.syntax_tree
jedi.inference
jedi.inference.gradual.conversion
jedi.inference.compiled.mixed
pydoc_data
pydoc_data.topics
jedi.api.keywords
jedi.api.completion_cache
jedi.api.helpers
jedi.api.classes
jedi.api.interpreter
jedi.api.strings
jedi.api.file_name
jedi.inference.docstring_utils
jedi.api.completion
filecmp
jedi.api.environment
jedi.inference.references
jedi.api.project
jedi.api.errors
jedi.inference.value.namespace
jedi.api.refactoring
jedi.api.refactoring.extract
jedi.inference.gradual.utils
jedi.api
jedi.plugins.stdlib
jedi.plugins.flask
jedi.plugins.pytest
jedi.plugins.django
jedi.plugins.registry
jedi
IPython.core.completer
IPython.terminal.ptutils
IPython.terminal.shortcuts.auto_match
IPython.terminal.shortcuts.filters
IPython.terminal.shortcuts.auto_suggest
IPython.lib.clipboard
```

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IPython.terminal.shortcuts
concurrent.futures.thread
IPython.terminal.debugger
IPython.terminal.magics
IPython.terminal.pt_inputhooks
IPython.terminal.prompts
IPython.terminal.interactiveshell
IPython.core.magics.auto
IPython.core.magics.basic
http
email.feedparser
email.parser
http.client
urllib.response
urllib.error
nturl2path
urllib.request
IPython.utils.contexts
IPython.core.magics.code
IPython.core.magics.config
IPython.core.magics.display
_lsprof
profile
cProfile
pstats
timeit
IPython.utils.module_paths
IPython.utils.timing
IPython.core.magics.ast_mod
IPython.core.magics.execution
IPython.core.magics.extension
IPython.core.magics.history
IPython.core.magics.logging
IPython.core.magics.namespace
IPython.core.magics.osm
IPython.core.magics.packaging
IPython.core.pylabtools
IPython.core.magics.pylab
IPython.core.magics.script
IPython.core.magics
IPython.core.shellapp
IPython.extensions
IPython.extensions.storemagic
IPython.terminal.ipapp
IPython.terminal.embed
IPython.utils.frame
IPython
ipykernel.control
ipykernel.heartbeat
```

```
ipykernel.iostream
comm.base_comm
comm
ipykernel.jsonutil
psutil._common
psutil._compat
psutil._psutil_windows
psutil._pswindows
psutil
tornado.gen
tornado.locks
tornado.queues
ipykernel.kernelbase
ipykernel.comm.comm
ipykernel.comm.manager
ipykernel.comm
ipykernel.compiler
debugpy._version
debugpy.public_api
debugpy
debugpy._vendored._util
debugpy._vendored
_pydevd_bundle
encodings.ascii
encodings.latin_1
stringprep
encodings.idna
_pydevd_bundle.pydevd_vm_type
_pydev_bundle
xmlrpc
xml.parsers
pyexpat.errors
pyexpat.model
pyexpat
xml.parsers.expat.model
xml.parsers.expat.errors
xml.parsers.expat
gzip
xmlrpc.client
http.server
xmlrpc.server
_pydev_bundle._pydev_saved_modules
_pydevd_bundle.pydevd_constants
_pydev_runfiles
_pydevd_frame_eval
pydev_ipython
pydevd_plugins
_pydev_bundle.pydev_log
_pydev_bundle._pydev_filesystem_encoding
```

```
_pydevd_bundle.pydevd_comm_constants
pydevd_file_utils
_pydev_bundle._pydev_execfile
_pydevd_bundle.pydevd_exec2
_pydev_bundle.pydev_imports
_pydev_bundle.pydev_is_thread_alive
_pydev_bundle.pydev_override
pydevd_plugins.extensions
_pydevd_bundle.pydevd_extension_utils
_pydevd_bundle.pydevd_frame_utils
_pydevd_bundle.pydevd_filtering
_pydevd_bundle.pydevd_io
_pydevd_bundle.pydevd_defaults
_pydevd_bundle.pydevd_utils
_pydevd_bundle.pydevd_runpy
_pydev_bundle._pydev_tipper_common
_pydev_bundle._pydev_imports_tipper
_pydev_bundle._pydev_calltip_util
_pydevd_bundle.pydevd_safe_repr
_pydevd_bundle.pydevd_resolver
_pydevd_bundle.pydevd_extension_api
_pydevd_bundle.pydevd_xml
_pydevd_bundle.pydevd_dont_trace
_pydevd_frame_eval.vendored
_pydevd_frame_eval.vendored.bytecode.flags
_pydevd_frame_eval.vendored.bytecode.instr
_pydevd_frame_eval.vendored.bytecode.bytecode
_pydevd_frame_eval.vendored.bytecode.concrete
_pydevd_frame_eval.vendored.bytecode.cfg
_pydevd_frame_eval.vendored.bytecode
_pydevd_bundle.pydevd_bytecode_utils
_pydevd_bundle.pydevd_frame
_pydevd_bundle.pydevd_additional_thread_info_regular
_pydevd_bundle.pydevd_additional_thread_info
_pydevd_bundle.pydevd_thread_lifecycle
_pydevd_bundle.pydevd_save_locals
_pydev_bundle.pydev_monkey
pydevd_tracing
_pydevd_bundle.pydevd_collect_bytecode_info
_pydevd_bundle.pydevd_daemon_thread
_pydevd_bundle.pydevd_timeout
_pydevd_bundle.pydevd_vars
_pydev_bundle.pydev_console_utils
_pydevd_bundle.pydevd_import_class
_pydevd_bundle.pydevd_breakpoints
_pydevd_bundle.pydevd_custom_frames
_pydevd_bundle.pydevd_dont_trace_files
_pydevd_bundle.pydevd_net_command
_pydevd_bundle.pydevconsole_code
```

```
_pydev_bundle.pydev_umd
pydevconsole
_pydev_bundle._pydev_completer
_pydevd_bundle.pydevd_net_command_factory_xml
_pydevd_bundle.pydevd_trace_dispatch_regular
_pydevd_bundle.pydevd_trace_dispatch
_pydevd_frame_eval.pydevd_frame_eval_main
_pydevd_bundle.pydevd_source_mapping
_pydevd_bundle.pydevd_concurrency_analyser
_pydevd_bundle.pydevd_concurrency_analyser.pydevd_thread_wrappers
_pydevd_bundle.pydevd_concurrency_analyser.pydevd_concurrency_logger
_pydevd_bundle._debug_adapter
_pydevd_bundle._debug_adapter.pydevd_schema_log
_pydevd_bundle._debug_adapter.pydevd_base_schema
_pydevd_bundle._debug_adapter.pydevd_schema
_pydevd_bundle.pydevd_reload
_pydev_bundle.fsnotify
_pydevd_bundle.pydevd_console
_pydevd_bundle.pydevd_comm
_pydevd_bundle.pydevd_net_command_factory_json
_pydevd_bundle.pydevd_api
_pydevd_bundle.pydevd_json_debug_options
_pydevd_bundle.pydevd_process_net_command_json
_pydevd_bundle.pydevd_traceproperty
_pydevd_bundle.pydevd_process_net_command
_pydevd_bundle.pydevd_suspended_frames
_pydevd_bundle.pydevd_trace_api
pydevd_plugins.pydevd_line_validation
pydevd_plugins.django_debug
pydevd_plugins.jinja2_debug
_pydevd_bundle.pydevd_plugin_utils
pydevd
debugpy._vendored.force_pydevd
debugpy.server
debugpy.adapter
debugpy.common
debugpy.common.json
debugpy.common.timestamp
debugpy.common.util
debugpy.common.log
debugpy.common.sockets
debugpy.server.api
ipykernel.debugger
packaging
packaging._structures
packaging.version
ipykernel.eventloops
IPython.core.payloadpage
ipykernel.displayhook
```

```
ipykernel.zmqshell
ipykernel.ipkernel
ipykernel.parentpoller
ipykernel.kernelapp
tornado.platform
tornado.platform.asyncio
faulthandler
IPython.core.completerlib
vscode
pygments.styles.default
numpy._utils._convertions
numpy._utils
numpy._globals
numpy.exceptions
numpy.version
numpy._distributor_init
numpy._utils._inspect
numpy.core._exceptions
numpy.dtypes
numpy.core._multiarray_umath
numpy.core.overrides
numpy.core.multiarray
numpy.core.umath
numpy.core._string_helpers
numpy.compat.py3k
numpy.compat
numpy.core._dtype
numpy.core._type_aliases
numpy.core.numerictypes
numpy.core._ufunc_config
numpy.core._methods
numpy.core.fromnumeric
numpy.core.shape_base
numpy.core.arrayprint
numpy.core._asarray
numpy.core.numeric
numpy.core.defchararray
numpy.core.records
numpy.core.memmap
numpy.core.function_base
numpy.core._machar
numpy.core.getlimits
numpy.core.einsumfunc
numpy.core._multiarray_tests
numpy.core._add_newdocs
numpy.core._add_newdocs_scalars
numpy.core._dtype_ctypes
numpy.core._internal
numpy._pytesttester
```

```
numpy.core
numpy.__config__
numpy.lib.mixins
numpy.lib.ufunclike
numpy.lib.type_check
numpy.lib.scimath
numpy.lib.stride_tricks
numpy.lib.twodim_base
numpy.linalg._umath_linalg
numpy._typing._nested_sequence
numpy._typing._nbit
numpy._typing._char_codes
numpy._typing._scalars
numpy._typing._shape
numpy._typing._dtype_like
numpy._typing._array_like
numpy._typing
numpy.linalg.linalg
numpy.linalg
numpy.matrixlib.defmatrix
numpy.matrixlib
numpy.lib.histograms
numpy.lib.function_base
numpy.lib.index_tricks
numpy.lib.nanfunctions
numpy.lib.shape_base
numpy.lib.polynomial
numpy.lib.utils
numpy.lib.arraysetops
numpy.lib.format
numpy.lib._datasource
numpy.lib._iotools
numpy.lib.npyio
numpy.lib.arrayterator
numpy.lib.arraypad
numpy.lib._version
numpy.lib
numpy.fft._pocketfft_internal
numpy.fft._pocketfft
numpy.fft.helper
numpy.fft
numpy.polynomial.polyutils
numpy.polynomial._polybase
numpy.polynomial.polynomial
numpy.polynomial.chebyshev
numpy.polynomial.legendre
numpy.polynomial.hermite
numpy.polynomial.hermite_e
numpy.polynomial.laguerre
```

```
numpy.polynomial
_cython_3_0_8
numpy.random._common
secrets
numpy.random.bit_generator
numpy.random._bounded_integers
numpy.random._mt19937
numpy.random.mtrand
numpy.random._philox
numpy.random._pcg64
numpy.random._sfc64
numpy.random._generator
numpy.random._pickle
numpy.random
numpy.ctypeslib
numpy.ma.core
numpy.ma.extras
numpy.ma
numpy
pytz.exceptions
pytz.lazy
pytz.tzinfo
pytz.tzfile
pytz
pandas.compat._constants
pandas.compat.compressors
pandas.util
pandas.util.version
pandas.compat.numpy
pandas.compat.pyarrow
pandas.compat
pandas._typing
pandas.util._exceptions
pandas._config.config
pandas._config.dates
pandas._config.display
pandas._config
pandas.core
pandas.core.config_init
pandas._libs.pandas_parser
numpy._core
numpy._core._multiarray_umath
pandas._libs.pandas_datetime
_cython_3_0_5
pandas._libs.tslibs.ccalendar
pandas._libs.tslibs.np_datetime
pandas._libs.tslibs.dtypes
pandas._libs.tslibs.base
pandas._libs.tslibs.nattype
pandas.compat._optional
```

```
zoneinfo._tzpath
zoneinfo._common
_zoneinfo
zoneinfo
pandas._libs.tslibs.timezones
pandas._config.localization
pandas._libs.tslibs.fields
pandas._libs.tslibs.timedeltas
pandas._libs.tslibs.tzconversion
pandas._libs.tslibs.timestamps
pandas._libs.properties
pandas._libs.tslibs.offsets
pandas._libs.tslibs.strptime
pandas._libs.tslibs.parsing
pandas._libs.tslibs.conversion
pandas._libs.tslibs.period
pandas._libs.tslibs.vectorized
pandas._libs.tslibs
pandas._libs.ops_dispatch
pandas._libs.missing
pandas._libs.hashtable
pandas._libs.algos
pandas._libs.interval
pandas._libs
pandas.core.dtypes
pandas._libs.lib
pandas.errors
pandas.core.dtypes.generic
pandas.core.dtypes.base
pandas.core.dtypes.inference
pandas.core.dtypes.dtypes
pandas.core.dtypes.common
pandas.core.dtypes.missing
pandas.util._decorators
pandas.io
pandas.io._util
pandas.core.dtypes.cast
pandas.core.dtypes.astype
pandas.core.dtypes.concat
pandas.core.array_algos
pandas.core.common
pandas.core.construction
pandas.core.array_algos.take
pandas.core.indexers.utils
pandas.core.indexers
pandas.core.algorithms
pandas.core.arrays.arrow.accessors
pandas.util._validators
pandas.core.missing
```

```
pandas._libs.ops
pandas.core.roperator
pandas.core.computation
pandas.core.computation.check
pandas.core.computation.expressions
pandas.core.ops.missing
pandas.core.ops.dispatch
pandas.core.ops.invalid
pandas.core.ops.array_ops
pandas.core.ops.common
pandas.core.ops.docstrings
pandas.core.ops.mask_ops
pandas.core.ops
pandas.core.arraylike
pandas.core.arrays._arrow_string_mixins
pandas.core.arrays._utils
pandas.compat.numpy.function
pandas.core.array_algos.quantile
pandas.core.sorting
pandas.core.arrays.base
pandas.core.nanops
pandas.core.array_algos.masked_accumulations
pandas.core.array_algos.masked_reductions
pandas.core.util
pandas._libs.hashing
pandas.core.util.hashing
pandas.core.arrays.masked
pandas._libs.arrays
pandas.core.arrays.numeric
pandas.core.arrays.floating
pandas.core.arrays.integer
pandas.core.array_algos.transforms
pandas.core.arrays._mixins
pandas.core.strings
pandas.core.strings.base
pandas.core.strings.object_array
pandas.core.arrays.numpy_
pandas.core.arrays.string_
pandas.tseries
pandas.tseries.frequencies
pandas.core.arrays.arrow.array
pandas.core.arrays.arrow
pandas.core.arrays.boolean
pandas.core.accessor
pandas.core.base
pandas.io.formats
pandas.io.formats.console
pandas.core.arrays.categorical
pandas._libs.tslib
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pandas.core.array_algos.datetimelike_accumulations
pandas.core.arrays.datetimelike
pandas.core.arrays._ranges
pandas.tseries.offsets
pandas.core.arrays.datetimes
pandas.core.arrays.timedeltas
pandas.core.arrays.interval
pandas.core.arrays.period
pandas._libs.sparse
pandas.io.formats.printing
pandas.core.arrays.sparse.array
pandas.core.arrays.sparse.accessor
pandas.core.arrays.sparse
pandas.core.arrays.string_arrow
pandas.core.arrays
pandas.core.flags
pandas._libs.internals
pandas.core._numba
pandas.core._numba.executor
pandas.core.apply
pandas._libs.indexing
pandas.core.indexes
pandas._libs.index
pandas._libs.writers
pandas._libs.join
pandas.core.array_algos.putmask
pandas.core.indexes.frozen
pandas.core.strings.accessor
pandas.core.indexes.base
pandas.core.indexes.extension
pandas.core.indexes.category
pandas.core.indexes.range
pandas.core.tools
pandas.core.tools.timedeltas
pandas.core.indexes.datetimelike
pandas.core.tools.times
pandas.core.indexes.datetimes
pandas.core.indexes.multi
pandas.core.indexes.timedeltas
pandas.core.indexes.interval
pandas.core.indexes.period
pandas.core.indexes.api
pandas.core.indexing
pandas.core.sample
pandas.core.array_algos.replace
pandas.core.internals.blocks
pandas.core.internals.api
pandas.core.internals.base
pandas.core.internals.ops
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pandas.core.internals.managers
pandas.core.internals.array_manager
pandas.core.internals.concat
pandas.core.internals
pandas.core.internals.construction
pandas.core.methods
pandas.core.reshape
pandas.core.reshape.concat
mmap
tarfile
pandas.core.shared_docs
pandas.io.common
pandas.io.formats.format
pandas.core.methods.describe
pandas._libs.window
pandas._libs.window.aggregations
pandas._libs.window.indexers
pandas.core.indexers.objects
pandas.core.util.numba_
pandas.core.window.common
pandas.core.window.doc
pandas.core.window.numba_
pandas.core.window.online
pandas.core.window.rolling
pandas.core.window.ewm
pandas.core.window.expanding
pandas.core.window
pandas.core.generic
pandas.core.methods.selectn
pandas.core.reshape.util
pandas.core.tools.numeric
pandas.core.reshape.melt
pandas._libs.reshape
pandas.core.indexes.accessors
pandas.arrays
pandas.core.tools.datetimes
pandas.io.formats.info
pandas.plotting._core
pandas.plotting._misc
pandas.plotting
pandas.core.series
pandas.core.frame
pandas.core.groupby.base
pandas._libs.groupby
pandas.core.groupby.categorical
pandas.core.groupby.grouper
pandas.core.groupby.ops
pandas.core.groupby.numba_
pandas.core.groupby.indexing
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pandas.core.groupby.groupby
pandas.core.groupby.generic
pandas.core.groupby
pandas.core.api
pandas.tseries.api
pandas.core.computation.common
pandas.core.computation.align
pandas.core.computation.scope
pandas.core.computation.ops
pandas.core.computation.engines
pandas.core.computation.parsing
pandas.core.computation.expr
pandas.core.computation.eval
pandas.core.computation.api
pandas.core.reshape.encoding
pandas.core.reshape.merge
pandas.core.reshape.pivot
pandas.core.reshape.tile
pandas.core.reshape.api
pandas.api.extensions
pandas.api.indexers
pandas.core.interchange
pandas.core.interchange.dataframe_protocol
pandas.core.interchange.utils
pandas.core.interchange.from_dataframe
pandas.api.interchange
pandas.core.dtypes.api
pandas.api.types
pandas.core.resample
pandas._libs.json
pandas.io.json._normalize
pandas.io.json._table_schema
pandas._libs.parsers
pandas.io.parsers.base_parser
pandas.io.parsers.arrow_parser_wrapper
pandas.io.parsers.c_parser_wrapper
pandas.io.parsers.python_parser
pandas.io.parsers.readers
pandas.io.parsers
pandas.io.json._json
pandas.io.json
pandas.io.stata
pandas.api.typing
pandas.api
pandas._testing.contexts
pandas._testing._io
pandas._testing._warnings
cmath
pandas._libs.testing
```

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pandas._testing.asserters
pandas._testing.compat
pandas._testing
pandas.testing
pandas.util._print_versions
pandas.io.clipboards
pandas.io.excel._util
pandas.io.excel._calamine
pandas.io.excel._odfreader
pandas.io.excel._openpyxl
pandas.io.excel._pyxlsb
pandas.io.excel._xlrd
pandas.io.excel._base
pandas.io.excel._odswriter
pandas.io.excel._xlsxwriter
pandas.io.excel
pandas.io.feather_format
pandas.io.gbq
pandas.io.html
pandas.io.orc
pandas.io.parquet
pandas.compat.pickle_compat
pandas.io.pickle
pandas.core.computation.pytables
pandas.io.pytables
pandas.io.sas.sasreader
pandas.io.sas
pandas.io.spss
pandas.io.sql
pandas.io.xml
pandas.io.api
pandas.util._tester
pandas._version_meson
pandas
```

1. Python Yazılımının versiyonunu bulunuz.

```
#Python sürümünü kontrol etme
print("Python version: ",sys.version)

Python version:  3.12.1 (tags/v3.12.1:2305ca5, Dec  7 2023, 22:03:25)
[MSC v.1937 64 bit (AMD64)]
```

1. Veri setindeki ilk 5 veriyi listeleyiniz.

```
# İlk 5 veriyi listeleme
print(df_yucel.head())

  Sirket         Urun    Tur Adi   Inc   Ram  Isletim Sistemi
Agirlik  \
```

```
0  Apple  MacBook Pro  Ultrabook  13.3   8.0            macOS
1.37
1  Apple  Macbook Air  Ultrabook  13.3   8.0            macOS
1.34
2     HP       250 G6   Notebook  15.6   8.0            No OS
1.86
3  Apple  MacBook Pro  Ultrabook  15.4  16.0            macOS
1.83
4  Apple  MacBook Pro  Ultrabook  13.3   8.0            macOS
1.37

   Fiyat(Euro)     Ekran   Ekran Genisligi  ...   Retina Ekran  \
0      1339.69  Standard           2560.0  ...            Yes
1       898.94  Standard           1440.0  ...             No
2       575.00   Full HD           1920.0  ...             No
3      2537.45  Standard           2880.0  ...            Yes
4      1803.60  Standard           2560.0  ...            Yes

   Islemci Sirketi  Islemci Frekansi  Islemci Modeli  Birincil
Depolama  \
0            Intel               2.3         Core i5
128.0
1            Intel               1.8         Core i5
128.0
2            Intel               2.5   Core i5 7200U
256.0
3            Intel               2.7         Core i7
512.0
4            Intel               3.1         Core i5
256.0

    Ikincil Depolama  Birincil Depolama Turu   Ikincil Depolama
Turu  \
0                0.0                     SSD                      No

1                0.0           Flash Storage                      No

2                0.0                     SSD                      No

3                0.0                     SSD                      No

4                0.0                     SSD                      No


    Grafik Karti Sirketi     Grafik Karti Modeli
0                  Intel  Iris Plus Graphics 640
1                  Intel        HD Graphics 6000
2                  Intel         HD Graphics 620
3                    AMD          Radeon Pro 455
4                  Intel  Iris Plus Graphics 650
```

```
[5 rows x 23 columns]
```

1. Veri setindeki son 5 veriyi listeleyiniz.

```
# Son 5 veriyi listeleme
print(df_yucel.tail())
```

```
      Sirket                                  Urun             Tur Adi
Inc  \
1270  Lenovo                      Yoga 500-14ISK  2 in 1 Convertible
14.0
1271  Lenovo                      Yoga 900-13ISK  2 in 1 Convertible
13.3
1272  Lenovo                   IdeaPad 100S-14IBR            Notebook
14.0
1273      HP  15-AC110nv (i7-6500U/6GB/1TB/Radeon            Notebook
15.6
1274    Asus  X553SA-XX031T (N3050/4GB/500GB/W10)            Notebook
15.6

       Ram  Isletim Sistemi   Agirlik  Fiyat(Euro)     Ekran  \
1270   4.0       Windows 10      1.80        638.0   Full HD
1271  16.0       Windows 10      1.30       1499.0  Quad HD+
1272   2.0       Windows 10      1.50        229.0  Standard
1273   6.0       Windows 10      2.19        764.0  Standard
1274   4.0       Windows 10      2.20        369.0  Standard

       Ekran Genisligi  ...   Retina Ekran  Islemci Sirketi  Islemci
Frekansi  \
1270            1920.0  ...             No            Intel
2.5
1271            3200.0  ...             No            Intel
2.5
1272            1366.0  ...             No            Intel
1.6
1273            1366.0  ...             No            Intel
2.5
1274            1366.0  ...             No            Intel
1.6

               Islemci Modeli  Birincil Depolama   Ikincil Depolama  \
1270            Core i7 6500U              128.0                0.0
1271            Core i7 6500U              512.0                0.0
1272  Celeron Dual Core N3050               64.0                0.0
1273            Core i7 6500U             1024.0                0.0
1274  Celeron Dual Core N3050              500.0                0.0

      Birincil Depolama Turu   Ikincil Depolama Turu   Grafik Karti
Sirketi  \
```

```
1270                      SSD                      No
Intel
1271                      SSD                      No
Intel
1272            Flash Storage                      No
Intel
1273                      HDD                      No
AMD
1274                      HDD                      No
Intel

      Grafik Karti Modeli
1270      HD Graphics 520
1271      HD Graphics 520
1272          HD Graphics
1273       Radeon R5 M330
1274          HD Graphics

[5 rows x 23 columns]
```

1. Veri setindeki bütün verileri listeleyiniz.

```
# Veri setindeki tüm verileri listeleme
print(df_yucel)
#Bu komut veri setindeki tüm satırları ekrana yazdırır. Ancak, veri
setiniz büyükse, çok fazla veri ekranda gösterilebilir.
#Eğer veri seti çok büyükse, sadece belirli bir kısmını listelemek
veya incelemek daha uygun olabilir.

      Sirket                                  Urun             Tur Adi
Inc  \
0      Apple                        MacBook Pro           Ultrabook
13.3
1      Apple                        Macbook Air           Ultrabook
13.3
2         HP                             250 G6            Notebook
15.6
3      Apple                        MacBook Pro           Ultrabook
15.4
4      Apple                        MacBook Pro           Ultrabook
13.3
...      ...                                ...                ...
...
1270  Lenovo                    Yoga 500-14ISK  2 in 1 Convertible
14.0
1271  Lenovo                    Yoga 900-13ISK  2 in 1 Convertible
13.3
1272  Lenovo                IdeaPad 100S-14IBR            Notebook
14.0
1273      HP  15-AC110nv (i7-6500U/6GB/1TB/Radeon            Notebook
```

```
15.6
1274    Asus  X553SA-XX031T (N3050/4GB/500GB/W10)            Notebook
15.6

       Ram  Isletim Sistemi   Agirlik  Fiyat(Euro)     Ekran  \
0      8.0            macOS      1.37      1339.69  Standard
1      8.0            macOS      1.34       898.94  Standard
2      8.0            No OS      1.86       575.00   Full HD
3     16.0            macOS      1.83      2537.45  Standard
4      8.0            macOS      1.37      1803.60  Standard
...    ...              ...       ...          ...       ...
1270   4.0        Windows 10      1.80       638.00   Full HD
1271  16.0        Windows 10      1.30      1499.00  Quad HD+
1272   2.0        Windows 10      1.50       229.00  Standard
1273   6.0        Windows 10      2.19       764.00  Standard
1274   4.0        Windows 10      2.20       369.00  Standard

       Ekran Genisligi  ...   Retina Ekran  Islemci Sirketi  Islemci
Frekansi  \
0               2560.0  ...            Yes            Intel
2.3
1               1440.0  ...             No            Intel
1.8
2               1920.0  ...             No            Intel
2.5
3               2880.0  ...            Yes            Intel
2.7
4               2560.0  ...            Yes            Intel
3.1
...                ...  ...            ...              ...
...
1270            1920.0  ...             No            Intel
2.5
1271            3200.0  ...             No            Intel
2.5
1272            1366.0  ...             No            Intel
1.6
1273            1366.0  ...             No            Intel
2.5
1274            1366.0  ...             No            Intel
1.6

               Islemci Modeli  Birincil Depolama   Ikincil Depolama  \
0                      Core i5              128.0                0.0
1                      Core i5              128.0                0.0
2                Core i5 7200U              256.0                0.0
3                      Core i7              512.0                0.0
4                      Core i5              256.0                0.0
...                        ...                ...                ...
1270             Core i7 6500U              128.0                0.0
```

```
1271            Core i7 6500U              512.0                0.0
1272  Celeron Dual Core N3050               64.0                0.0
1273            Core i7 6500U             1024.0                0.0
1274  Celeron Dual Core N3050              500.0                0.0

      Birincil Depolama Turu   Ikincil Depolama Turu   Grafik Karti
Sirketi  \
0                        SSD                      No
Intel
1              Flash Storage                      No
Intel
2                        SSD                      No
Intel
3                        SSD                      No
AMD
4                        SSD                      No
Intel
...                      ...                     ...
...
1270                     SSD                      No
Intel
1271                     SSD                      No
Intel
1272           Flash Storage                      No
Intel
1273                     HDD                      No
AMD
1274                     HDD                      No
Intel

         Grafik Karti Modeli
0     Iris Plus Graphics 640
1           HD Graphics 6000
2            HD Graphics 620
3             Radeon Pro 455
4     Iris Plus Graphics 650
...                      ...
1270         HD Graphics 520
1271         HD Graphics 520
1272             HD Graphics
1273          Radeon R5 M330
1274             HD Graphics

[1275 rows x 23 columns]
```

1. Veri setindeki nümerik alanları listeleyiniz.

```
# Nümerik sütunları listeleme
numerik_sutunlar = df_yucel.select_dtypes(include=['float64',
'int64']).columns
```

```
print("Nümerik sütunlar:")
print(numerik_sutunlar)
```

```
Nümerik sütunlar:
Index([' Inc', ' Ram', ' Agirlik', 'Fiyat(Euro)', ' Ekran Genisligi',
       ' Ekran Yuksekligi', ' Islemci Frekansi', ' Birincil Depolama',
       ' Ikincil Depolama'],
      dtype='object')
```

9.0.1 Nümerik olmayan sütunları seçme

```
# Nümerik olmayan sütunları seçme
kategorik_sutunlar = df_yucel.select_dtypes(exclude=['float64',
'int64'])
```

1. Veri setindeki nümerik olmayan alanların frekans dağılımını analiz ediniz

```
# Nümerik olmayan sütunları seçme
kategorik_sutunlar = df_yucel.select_dtypes(exclude=['float64',
'int64'])

# Her bir nümerik olmayan sütunun frekans dağılımını gösterme
for sutun in kategorik_sutunlar.columns:
    print(f"{sutun} sütununun frekans dağılımı:")
    print(df_yucel[sutun].value_counts())
    print("\n")
```

```
Sirket sütununun frekans dağılımı:
Sirket
Dell
291
Lenovo
289
HP
268
Asus
152
Acer
101
MSI
54
Toshiba
48
Apple
15
Samsung
9
Mediacom
7
```

```
Razer
7
Microsoft
6
Vero
4
Xiaomi
4
Google
3
Fujitsu
3
LG
3
Huawei
2
Apple,"MacBook
12""",Ultrabook,12.0,8,macOS,0.92,1510.0,Standard,2304,1440,No,Yes,Yes
,Intel,1.3,Core i5,512,0,SSD,No,Intel,HD Graphics 615
1
Chuwi
1
Chuwi,"LapBook 15.6""",Notebook,15.6,4,Windows 10,1.89,244.99,Full
HD,1920,1080,No,No,No,Intel,1.44,Atom x5-Z8300,64,0,Flash
Storage,No,Intel,HD Graphics      1
Apple,"MacBook
12""",Ultrabook,12.0,8,macOS,0.92,1262.4,Standard,2304,1440,No,Yes,Yes
,Intel,1.2,Core M m3,256,0,SSD,No,Intel,HD Graphics 615
1
Chuwi,"Lapbook 15,6",Notebook,15.6,4,Windows 10,1.89,248.9,Full
HD,1920,1080,No,No,No,Intel,1.44,Atom x5-Z8350,64,0,Flash
Storage,No,Intel,HD Graphics         1
Apple,"MacBook 12""",Ultrabook,12.0,8,Mac OS
X,0.92,1165.0,Standard,2304,1440,No,Yes,Yes,Intel,1.2,Core
M,512,0,Flash Storage,No,Intel,HD Graphics 5300        1
Apple,"MacBook 12""",Ultrabook,12.0,8,Mac OS
X,0.92,1300.0,Standard,2304,1440,No,Yes,Yes,Intel,1.1,Core
M,256,0,Flash Storage,No,Intel,HD Graphics 515         1
Apple,"MacBook 12""",Ultrabook,12.0,8,Mac OS
X,0.92,1163.0,Standard,2304,1440,No,Yes,Yes,Intel,1.1,Core
M,256,0,Flash Storage,No,Intel,HD Graphics 5300        1
Apple,"MacBook 12""",Ultrabook,12.0,8,Mac OS
X,0.92,1279.0,Standard,2304,1440,No,Yes,Yes,Intel,1.2,Core
M,512,0,Flash Storage,No,Intel,HD Graphics 515         1
Name: count, dtype: int64


 Urun sütununun frekans dağılımı:
 Urun
```

```
XPS 13                                    30
Inspiron 3567                             25
250 G6                                    21
Vostro 3568                               19
Legion Y520-15IKBN                        19
                                          ..
IdeaPad 320-14IAP                          1
15-BS026nv (i5-7200U/8GB/256GB/Radeon      1
VivoBook E201NA                            1
Ideapad 520-15IKBR                         1
X553SA-XX031T (N3050/4GB/500GB/W10)        1
Name: count, Length: 615, dtype: int64


 Tur Adi sütununun frekans dağılımı:
 Tur Adi
Notebook              705
Gaming                205
Ultrabook             188
2 in 1 Convertible    117
Workstation            29
Netbook                23
Name: count, dtype: int64


 Isletim Sistemi sütununun frekans dağılımı:
 Isletim Sistemi
Windows 10      1046
No OS             66
Linux             58
Windows 7         45
Chrome OS         27
macOS             11
Windows 10 S       8
Mac OS X           4
Android            2
Name: count, dtype: int64


 Ekran sütununun frekans dağılımı:
 Ekran
Full HD        833
Standard       363
4K Ultra HD     43
Quad HD+        28
Name: count, dtype: int64


 Dokunmatik Ekran sütununun frekans dağılımı:
 Dokunmatik Ekran
```

```
No     1079
Yes     188
Name: count, dtype: int64


 IPS Panel sütununun frekans dağılımı:
 IPS Panel
No     916
Yes    351
Name: count, dtype: int64


 Retina Ekran sütununun frekans dağılımı:
 Retina Ekran
No     1256
Yes      11
Name: count, dtype: int64


 Islemci Sirketi sütununun frekans dağılımı:
 Islemci Sirketi
Intel      1206
AMD          60
Samsung       1
Name: count, dtype: int64


 Islemci Modeli sütununun frekans dağılımı:
 Islemci Modeli
Core i5 7200U     193
Core i7 7700HQ    147
Core i7 7500U     133
Core i3 6006U      81
Core i7 8550U      73
                 ...
E-Series 9000e      1
Ryzen 1600          1
Core i7 6920HQ      1
FX 9830P            1
A9-Series 9410      1
Name: count, Length: 90, dtype: int64


 Birincil Depolama Turu sütununun frekans dağılımı:
 Birincil Depolama Turu
SSD              835
HDD              359
Flash Storage     65
Hybrid             8
Name: count, dtype: int64
```

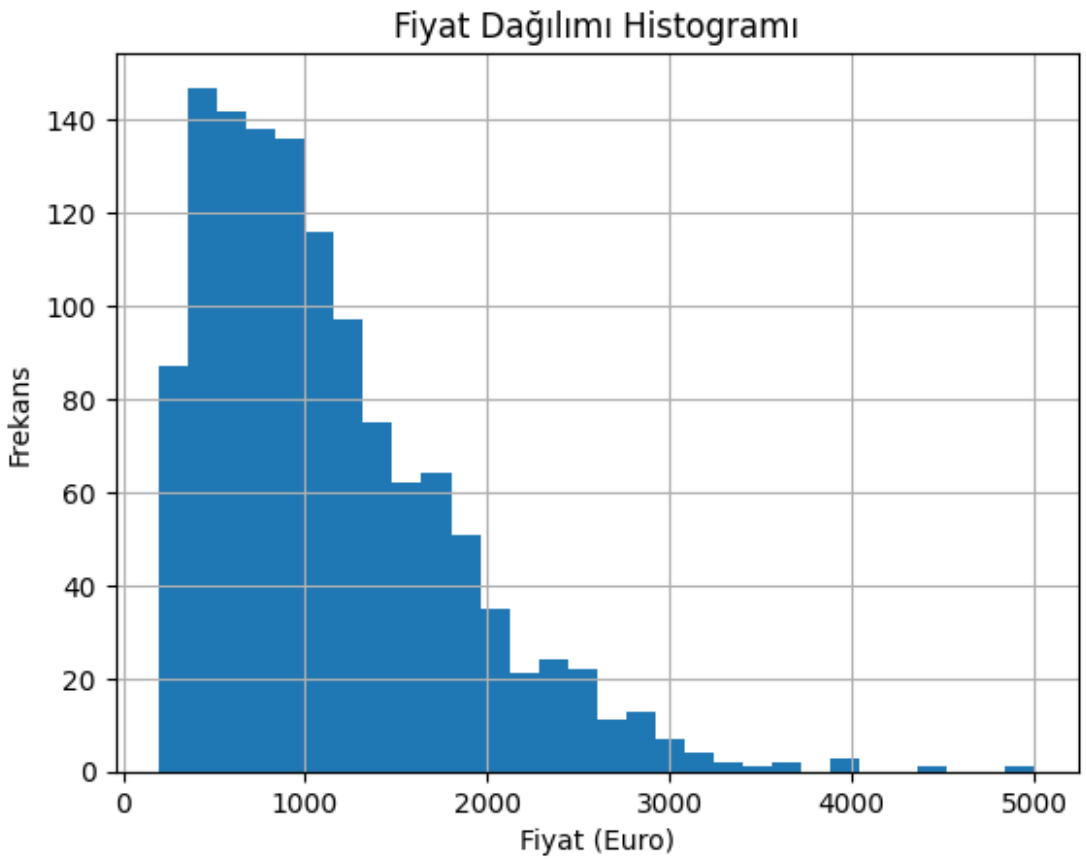
```
 Ikincil Depolama Turu sütununun frekans dağılımı:
 Ikincil Depolama Turu
No        1059
HDD        202
SSD          4
Hybrid       2
Name: count, dtype: int64


 Grafik Karti Sirketi sütununun frekans dağılımı:
 Grafik Karti Sirketi
Intel     696
Nvidia    396
AMD       174
ARM         1
Name: count, dtype: int64


 Grafik Karti Modeli sütununun frekans dağılımı:
 Grafik Karti Modeli
HD Graphics 620     279
HD Graphics 520     181
UHD Graphics 620     68
GeForce GTX 1050     66
GeForce GTX 1060     48
                    ...
Graphics 620           1
Radeon R5 520          1
Radeon R7              1
HD Graphics 540        1
Mali T860 MP4          1
Name: count, Length: 109, dtype: int64
```

1. Histogram diyagramını çiziniz.

```python
import matplotlib.pyplot as plt

# Doğru sütun adıyla (boşluklu) histogram çizimi
df_yucel['Fiyat(Euro)'].hist(bins=30, range=(199, 5000))

# Grafiğe başlık ve eksen etiketleri ekleme
plt.title('Fiyat Dağılımı Histogramı')
plt.xlabel('Fiyat (Euro)')
plt.ylabel('Frekans')

# Grafiği gösterme
plt.show()
```



1. Veri setindeki toplam veri sayısını bulunuz.

```
# Toplam veri sayısını (satır sayısı) bulma
toplam_veri_sayisi = len(df_yucel)

# Sonucu ekrana yazdırma
print(f"Toplam veri sayısı: {toplam_veri_sayisi}")
```

```
Toplam veri sayısı: 1275
```

1. Veri setindeki toplam sütun sayısını bulunuz.

```
# Veri setindeki toplam satır ve sütun sayısını bulma
satir_sayisi, sutun_sayisi = df_yucel.shape

# Sonucu ekrana yazdırma
print(f"Toplam satır sayısı: {satir_sayisi}, Toplam sütun sayısı:
{sutun_sayisi}")
```

```
Toplam satır sayısı: 1275, Toplam sütun sayısı: 23
```

1. Veri setindeki sütun isimlerini bulunuz.

```
# Veri setindeki toplam sütun sayısını bulma
sutun_sayisi = df_yucel.shape[1]
```

```
# Sonucu ekrana yazdırma
print(f"Toplam sütun sayısı: {sutun_sayisi}")
```

```
Toplam sütun sayısı: 23
```

14.0.1 Veri setindeki sütun isimlerini listeleme

```
# Veri setindeki sütun isimlerini listeleme
sutun_isimleri = df_yucel.columns

# Sütun isimlerini ekrana yazdırma
print("Veri setindeki sütun isimleri:")
for sutun in sutun_isimleri:
    print(sutun)
```

```
Veri setindeki sütun isimleri:
Sirket
 Urun
 Tur Adi
 Inc
 Ram
 Isletim Sistemi
 Agirlik
Fiyat(Euro)
 Ekran
 Ekran Genisligi
 Ekran Yuksekligi
 Dokunmatik Ekran
 IPS Panel
 Retina Ekran
 Islemci Sirketi
 Islemci Frekansi
 Islemci Modeli
 Birincil Depolama
 Ikincil Depolama
 Birincil Depolama Turu
 Ikincil Depolama Turu
 Grafik Karti Sirketi
 Grafik Karti Modeli
```

1. Veri setindeki eksik verileri bulunuz.

```
# Her sütundaki eksik veri sayısını bulma
eksik_veriler = df_yucel.isnull().sum()

# Eksik veri sayısını ekrana yazdırma
print("Her sütundaki eksik veri sayıları:")
print(eksik_veriler)
```

```
Her sütundaki eksik veri sayıları:
Sirket                     0
 Urun                      8
 Tur Adi                   8
 Inc                       8
 Ram                       8
 Isletim Sistemi           8
 Agirlik                   8
Fiyat(Euro)                8
 Ekran                     8
 Ekran Genisligi           8
 Ekran Yuksekligi          8
 Dokunmatik Ekran          8
 IPS Panel                 8
 Retina Ekran              8
 Islemci Sirketi           8
 Islemci Frekansi          8
 Islemci Modeli            8
 Birincil Depolama         8
 Ikincil Depolama          8
 Birincil Depolama Turu    8
 Ikincil Depolama Turu     8
 Grafik Karti Sirketi      8
 Grafik Karti Modeli       8
dtype: int64
```

1. Her bir sütundaki eksik veri sayısını bulunuz.

```python
# Her bir sütundaki eksik verilerin sayısını bulma
eksik_veriler = df_yucel.isnull().sum()

# Her sütundaki eksik veri sayısını daha açıklayıcı bir şekilde
yazdırma
print("Her sütundaki eksik veri sayıları:")
for sutun, eksik_sayi in eksik_veriler.items():
    print(f"{sutun}: {eksik_sayi} eksik veri")
```

```
Her sütundaki eksik veri sayıları:
Sirket: 0 eksik veri
 Urun: 8 eksik veri
 Tur Adi: 8 eksik veri
 Inc: 8 eksik veri
 Ram: 8 eksik veri
 Isletim Sistemi: 8 eksik veri
 Agirlik: 8 eksik veri
Fiyat(Euro): 8 eksik veri
 Ekran: 8 eksik veri
 Ekran Genisligi: 8 eksik veri
 Ekran Yuksekligi: 8 eksik veri
 Dokunmatik Ekran: 8 eksik veri
```

```
IPS Panel: 8 eksik veri
Retina Ekran: 8 eksik veri
Islemci Sirketi: 8 eksik veri
Islemci Frekansi: 8 eksik veri
Islemci Modeli: 8 eksik veri
Birincil Depolama: 8 eksik veri
Ikincil Depolama: 8 eksik veri
Birincil Depolama Turu: 8 eksik veri
Ikincil Depolama Turu: 8 eksik veri
Grafik Karti Sirketi: 8 eksik veri
Grafik Karti Modeli: 8 eksik veri
```

1. Bütün sütunlardaki toplam eksik veri sayısını bulunuz.

```
# Tüm sütunlardaki toplam eksik veri sayısını bulma
toplam_eksik_veri = df_yucel.isnull().sum().sum()

# Sonucu ekrana yazdırma
print(f"Tüm sütunlardaki toplam eksik veri sayısı:
{toplam_eksik_veri}")
```

```
Tüm sütunlardaki toplam eksik veri sayısı: 176
```

1. Eksik verilerin yerine "0 - sıfır" yazınız.

```
# Eksik verilerin yerine 0 yazma
df_yucel_filled = df_yucel.fillna(0)

# Eksik verilerin doldurulup doldurulmadığını kontrol edelim
print("Eksik veriler 0 ile dolduruldu.")
print(df_yucel_filled.isnull().sum())
```

```
Eksik veriler 0 ile dolduruldu.
Sirket                    0
 Urun                     0
 Tur Adi                  0
 Inc                      0
 Ram                      0
 Isletim Sistemi          0
 Agirlik                  0
Fiyat(Euro)               0
 Ekran                    0
 Ekran Genisligi          0
 Ekran Yuksekligi         0
 Dokunmatik Ekran         0
 IPS Panel                0
 Retina Ekran             0
 Islemci Sirketi          0
 Islemci Frekansi         0
 Islemci Modeli           0
```

```
 Birincil Depolama          0
 Ikincil Depolama           0
 Birincil Depolama Turu     0
 Ikincil Depolama Turu      0
 Grafik Karti Sirketi       0
 Grafik Karti Modeli        0
dtype: int64
```

1. Eksik verileri dataFrame'den çıkarınız.

```
# Eksik verileri içeren satırları çıkartma
df_yucel_dropped = df_yucel.dropna()

# Kalan veri setinde eksik veri olup olmadığını kontrol edelim
print("Eksik veriler çıkarıldı. Kalan eksik veriler:")
print(df_yucel_dropped.isnull().sum())
```

```
Eksik veriler çıkarıldı. Kalan eksik veriler:
Sirket                     0
 Urun                      0
 Tur Adi                   0
 Inc                       0
 Ram                       0
 Isletim Sistemi           0
 Agirlik                   0
Fiyat(Euro)                0
 Ekran                     0
 Ekran Genisligi           0
 Ekran Yuksekligi          0
 Dokunmatik Ekran          0
 IPS Panel                 0
 Retina Ekran              0
 Islemci Sirketi           0
 Islemci Frekansi          0
 Islemci Modeli            0
 Birincil Depolama         0
 Ikincil Depolama          0
 Birincil Depolama Turu    0
 Ikincil Depolama Turu     0
 Grafik Karti Sirketi      0
 Grafik Karti Modeli       0
dtype: int64
```

1. Tekrarlı verilerin sayısını bulunuz.

```
# Tekrarlı verilerin sayısını bulma
tekrarli_veri_sayisi = df_yucel.duplicated().sum()

# Sonucu ekrana yazdırma
print(f"Tekrarlı veri sayısı: {tekrarli_veri_sayisi}")
```

```
Tekrarlı veri sayısı: 0
```

1. info() fonksiyonunun değişik varyantlarını dataFrame üzerinde uygulayınız.

```
# Standart info() fonksiyonu
df_yucel.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 1275 entries, 0 to 1274
Data columns (total 23 columns):
 #   Column                   Non-Null Count  Dtype  
---  ------                   --------------  -----  
 0   Sirket                   1275 non-null   object 
 1    Urun                    1267 non-null   object 
 2    Tur Adi                 1267 non-null   object 
 3    Inc                     1267 non-null   float64
 4    Ram                     1267 non-null   float64
 5    Isletim Sistemi         1267 non-null   object 
 6    Agirlik                 1267 non-null   float64
 7   Fiyat(Euro)              1267 non-null   float64
 8    Ekran                   1267 non-null   object 
 9    Ekran Genisligi         1267 non-null   float64
 10   Ekran Yuksekligi        1267 non-null   float64
 11   Dokunmatik Ekran        1267 non-null   object 
 12   IPS Panel               1267 non-null   object 
 13   Retina Ekran            1267 non-null   object 
 14   Islemci Sirketi         1267 non-null   object 
 15   Islemci Frekansi        1267 non-null   float64
 16   Islemci Modeli          1267 non-null   object 
 17   Birincil Depolama       1267 non-null   float64
 18   Ikincil Depolama        1267 non-null   float64
 19   Birincil Depolama Turu  1267 non-null   object 
 20   Ikincil Depolama Turu   1267 non-null   object 
 21   Grafik Karti Sirketi    1267 non-null   object 
 22   Grafik Karti Modeli     1267 non-null   object 
dtypes: float64(9), object(14)
memory usage: 229.2+ KB
```

```
# Bellek kullanımını detaylı gösterme
df_yucel.info(memory_usage='deep')
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 1275 entries, 0 to 1274
Data columns (total 23 columns):
 #   Column                   Non-Null Count  Dtype  
---  ------                   --------------  -----  
 0   Sirket                   1275 non-null   object 
 1    Urun                    1267 non-null   object 
 2    Tur Adi                 1267 non-null   object 
 3    Inc                     1267 non-null   float64
```

```
 4    Ram                      1267 non-null   float64
 5    Isletim Sistemi          1267 non-null   object
 6    Agirlik                  1267 non-null   float64
 7   Fiyat(Euro)               1267 non-null   float64
 8    Ekran                    1267 non-null   object
 9    Ekran Genisligi          1267 non-null   float64
 10   Ekran Yuksekligi         1267 non-null   float64
 11   Dokunmatik Ekran         1267 non-null   object
 12   IPS Panel                1267 non-null   object
 13   Retina Ekran             1267 non-null   object
 14   Islemci Sirketi          1267 non-null   object
 15   Islemci Frekansi         1267 non-null   float64
 16   Islemci Modeli           1267 non-null   object
 17   Birincil Depolama        1267 non-null   float64
 18   Ikincil Depolama         1267 non-null   float64
 19   Birincil Depolama Turu   1267 non-null   object
 20   Ikincil Depolama Turu    1267 non-null   object
 21   Grafik Karti Sirketi     1267 non-null   object
 22   Grafik Karti Modeli      1267 non-null   object
dtypes: float64(9), object(14)
memory usage: 1.0 MB

# Tüm sütunlar hakkında detaylı bilgi gösterme
df_yucel.info(verbose=True)

<class 'pandas.core.frame.DataFrame'>
RangeIndex: 1275 entries, 0 to 1274
Data columns (total 23 columns):
 #   Column                   Non-Null Count  Dtype
---  ------                   --------------  -----
 0   Sirket                   1275 non-null   object
 1    Urun                    1267 non-null   object
 2    Tur Adi                 1267 non-null   object
 3    Inc                     1267 non-null   float64
 4    Ram                     1267 non-null   float64
 5    Isletim Sistemi         1267 non-null   object
 6    Agirlik                 1267 non-null   float64
 7   Fiyat(Euro)              1267 non-null   float64
 8    Ekran                   1267 non-null   object
 9    Ekran Genisligi         1267 non-null   float64
 10   Ekran Yuksekligi        1267 non-null   float64
 11   Dokunmatik Ekran        1267 non-null   object
 12   IPS Panel               1267 non-null   object
 13   Retina Ekran            1267 non-null   object
 14   Islemci Sirketi         1267 non-null   object
 15   Islemci Frekansi        1267 non-null   float64
 16   Islemci Modeli          1267 non-null   object
 17   Birincil Depolama       1267 non-null   float64
 18   Ikincil Depolama        1267 non-null   float64
 19   Birincil Depolama Turu  1267 non-null   object
```

```
 20   Ikincil Depolama Turu   1267 non-null   object
 21   Grafik Karti Sirketi    1267 non-null   object
 22   Grafik Karti Modeli     1267 non-null   object
dtypes: float64(9), object(14)
memory usage: 229.2+ KB
```

1. CSV dosyası olarak link'ten alınan dataFrame'i, herhangi bir dizine dataFrame olarak kopyalayınız. Linkteki CSV dosyası ile kaydedilen CSV dosyasının aynı olup olmadığını kontrol ediniz.

```
# YUCEL_DF.csv dosyasını yükleyelim
yucel_df = pd.read_csv('YUCEL_DF.csv')

# Yüklenen DataFrame'i bir CSV dosyasına kopyalayalım
yucel_df.to_csv('copy_of_YUCEL_DF.csv', index=False)

# Kopyalanan dosyayı tekrar geri yükleyelim
copied_df = pd.read_csv('copy_of_YUCEL_DF.csv')

# Kopyalanan dosya ile orijinal DataFrame'in aynı olup olmadığını
karşılaştıralım
print("\nKopyalanan DataFrame ile Orijinal DataFrame
Karşılaştırması:")
print(yucel_df.equals(copied_df))
```

```
Kopyalanan DataFrame ile Orijinal DataFrame Karşılaştırması:
True
```

1. DataFrame'deki herhangi bir sütunu ekrana alınız ve veri tipini sorgulayınız.

```
# DataFrame'deki herhangi bir sütunu ekrana alalım (örneğin
'Fiyat(Euro)' sütunu)
print("Fiyat(Euro) sütunundaki veriler:")
print(yucel_df['Fiyat(Euro)'])

# Veri tipini sorgulama
print("\nFiyat(Euro) sütununun veri tipi:")
print(yucel_df['Fiyat(Euro)'].dtype)
```

```
Fiyat(Euro) sütunundaki veriler:
0       1339.69
1        898.94
2        575.00
3       2537.45
4       1803.60
         ...
1270     638.00
1271    1499.00
1272     229.00
1273     764.00
```

```
1274     369.00
Name: Fiyat(Euro), Length: 1275, dtype: float64

Fiyat(Euro) sütununun veri tipi:
float64
```

1. Sütunun Class'ını sorgulayınız.

```
# Örnek olarak 'Fiyat(Euro)' sütununun class'ını sorgulama
print("Fiyat(Euro) sütununun class'ı:")
print(type(yucel_df['Fiyat(Euro)']))

Fiyat(Euro) sütununun class'ı:
<class 'pandas.core.series.Series'>
```

1. DataFrame'de "loc " deyimi kullanarak indeks etiketi ile sorgu yapınız.

```
# İndeks etiketine göre bir satır seçme (örneğin, 0. indeks)
satir = yucel_df.loc[0:3]

# Seçilen satırı ekrana yazdırma
print("0. indeks satırı:")
print(satir)

0. indeks satırı:
  Sirket         Urun    Tur Adi   Inc   Ram  Isletim Sistemi
Agirlik  \
0  Apple  MacBook Pro  Ultrabook  13.3   8.0            macOS
1.37
1  Apple  Macbook Air  Ultrabook  13.3   8.0            macOS
1.34
2     HP       250 G6   Notebook  15.6   8.0            No OS
1.86
3  Apple  MacBook Pro  Ultrabook  15.4  16.0            macOS
1.83

   Fiyat(Euro)     Ekran   Ekran Genisligi  ...   Retina Ekran  \
0      1339.69  Standard            2560.0  ...            Yes
1       898.94  Standard            1440.0  ...             No
2       575.00   Full HD            1920.0  ...             No
3      2537.45  Standard            2880.0  ...            Yes

   Islemci Sirketi  Islemci Frekansi  Islemci Modeli  Birincil
Depolama  \
0            Intel               2.3         Core i5
128.0
1            Intel               1.8         Core i5
128.0
2            Intel               2.5   Core i5 7200U
256.0
3            Intel               2.7         Core i7
```

```
512.0

    Ikincil Depolama  Birincil Depolama Turu   Ikincil Depolama
Turu  \
0                0.0                      SSD                      No

1                0.0           Flash Storage                       No

2                0.0                      SSD                      No

3                0.0                      SSD                      No


    Grafik Karti Sirketi     Grafik Karti Modeli
0                  Intel  Iris Plus Graphics 640
1                  Intel        HD Graphics 6000
2                  Intel         HD Graphics 620
3                    AMD          Radeon Pro 455

[4 rows x 23 columns]
```

25.0.1 Sutun isimlerindeki boşlukları temizleme

```
# Sütun isimlerini ekrana yazdırma
print("Veri setindeki sütun isimleri:")
print(yucel_df.columns)
```

```
Veri setindeki sütun isimleri:
Index(['Sirket', ' Urun', ' Tur Adi', ' Inc', ' Ram', ' Isletim
Sistemi',
       ' Agirlik', 'Fiyat(Euro)', ' Ekran', ' Ekran Genisligi',
       ' Ekran Yuksekligi', ' Dokunmatik Ekran', ' IPS Panel', '
Retina Ekran',
       ' Islemci Sirketi', ' Islemci Frekansi', ' Islemci Modeli',
       ' Birincil Depolama', ' Ikincil Depolama', ' Birincil Depolama
Turu',
       ' Ikincil Depolama Turu', ' Grafik Karti Sirketi',
       ' Grafik Karti Modeli'],
      dtype='object')
```

```
# Sütun isimlerindeki boşlukları temizleme
yucel_df.columns = yucel_df.columns.str.strip()

# Sütunları tekrar ekrana yazdırma (kontrol amacıyla)
print("Temizlenmiş sütun isimleri:")
print(yucel_df.columns)
```

```
Temizlenmiş sütun isimleri:
Index(['Sirket', 'Urun', 'Tur Adi', 'Inc', 'Ram', 'Isletim Sistemi',
'Agirlik',
```

```
       'Fiyat(Euro)', 'Ekran', 'Ekran Genisligi', 'Ekran Yuksekligi',
       'Dokunmatik Ekran', 'IPS Panel', 'Retina Ekran', 'Islemci
Sirketi',
       'Islemci Frekansi', 'Islemci Modeli', 'Birincil Depolama',
       'Ikincil Depolama', 'Birincil Depolama Turu', 'Ikincil Depolama
Turu',
       'Grafik Karti Sirketi', 'Grafik Karti Modeli'],
      dtype='object')
```

1. DataFrame'de "iloc " deyimi kullanarak indeks numarası ile sorgu yapınız.

```
# 0. indeks satırını seçme
satir = yucel_df.iloc[0]

# Seçilen satırı ekrana yazdırma
print("0. indeks satırı:")
print(satir)
```

```
0. indeks satırı:
Sirket                                  Apple
Urun                                MacBook Pro
Tur Adi                               Ultrabook
Inc                                        13.3
Ram                                         8.0
Isletim Sistemi                           macOS
Agirlik                                    1.37
Fiyat(Euro)                             1339.69
Ekran                                  Standard
Ekran Genisligi                          2560.0
Ekran Yuksekligi                         1600.0
Dokunmatik Ekran                             No
IPS Panel                                   Yes
Retina Ekran                                Yes
Islemci Sirketi                           Intel
Islemci Frekansi                            2.3
Islemci Modeli                          Core i5
Birincil Depolama                         128.0
Ikincil Depolama                            0.0
Birincil Depolama Turu                      SSD
Ikincil Depolama Turu                        No
Grafik Karti Sirketi                      Intel
Grafik Karti Modeli       Iris Plus Graphics 640
Name: 0, dtype: object
```

1. Satır ve sütunu birlikte seçerek "loc" deyimi ile sorgu yazınız.

```
# 0. indeks satırındaki 'Fiyat(Euro)' sütununu seçme
deger = yucel_df.loc[0, 'Fiyat(Euro)']

# Seçilen değeri ekrana yazdırma
```

```
print("0. indeks satırındaki 'Fiyat(Euro)' sütunu:")
print(deger)
```

```
0. indeks satırındaki 'Fiyat(Euro)' sütunu:
1339.69
```

1. loc () deyimini kullanarak dataFrame'de "Slicing" işlemi yapınız.

```
# 0 ile 4. indeksler arasındaki satırlar ve 'Fiyat(Euro)', 'Isletim
Sistemi' sütunlarını seçme
dilim = yucel_df.loc[0:4:2, ['Fiyat(Euro)', 'Isletim Sistemi']]

# Dilimlenen satır ve sütunları ekrana yazdırma
print("\n0 ile 4. indeksler arasındaki satırlar ve 'Fiyat(Euro)',
'Isletim Sistemi' sütunları:")
print(dilim)
```

```
0 ile 4. indeksler arasındaki satırlar ve 'Fiyat(Euro)', 'Isletim
Sistemi' sütunları:
   Fiyat(Euro) Isletim Sistemi
0      1339.69           macOS
2       575.00           No OS
4      1803.60           macOS
```

```
# 'Sirket' sütunu ve 3 ile 6. indeksler arasındaki satırları seçme
dilim = yucel_df.loc[3:6, 'Sirket']

# Dilimlenen verileri ekrana yazdırma
print("\n3 ile 6. indeksler arasındaki 'Sirket' sütunu:")
print(dilim)
```

```
3 ile 6. indeksler arasındaki 'Sirket' sütunu:
3    Apple
4    Apple
5     Acer
6    Apple
Name: Sirket, dtype: object
```

1. DataFrame'de filtreleme işlemi yapınız.

```
# Fiyat(Euro) sütununda 1000'den büyük olan satırları filtreleme
filtrelenmis_df = yucel_df[yucel_df['Fiyat(Euro)'] > 1000]

# Filtrelenmiş satırları ekrana yazdırma
print("Fiyat(Euro) sütununda 1000'den büyük olan satırlar:")
print(filtrelenmis_df.head(10))
```

```
Fiyat(Euro) sütununda 1000'den büyük olan satırlar:
   Sirket             Urun    Tur Adi   Inc   Ram Isletim Sistemi
```

```
Agirlik  \
0   Apple      MacBook Pro  Ultrabook  13.3   8.0           macOS
1.37
3   Apple      MacBook Pro  Ultrabook  15.4  16.0           macOS
1.83
4   Apple      MacBook Pro  Ultrabook  13.3   8.0           macOS
1.37
6   Apple      MacBook Pro  Ultrabook  15.4  16.0        Mac OS X
2.04
7   Apple      Macbook Air  Ultrabook  13.3   8.0           macOS
1.34
8    Asus  ZenBook UX430UN  Ultrabook  14.0  16.0      Windows 10
1.30
12  Apple      MacBook Pro  Ultrabook  15.4  16.0           macOS
1.83
15  Apple      MacBook Pro  Ultrabook  13.3   8.0           macOS
1.37
17  Apple      MacBook Pro  Ultrabook  15.4  16.0           macOS
1.83
26  Apple      MacBook Air  Ultrabook  13.3   8.0        Mac OS X
1.35

    Fiyat(Euro)     Ekran  Ekran Genisligi  ...  Retina Ekran Islemci
Sirketi  \
0       1339.69  Standard           2560.0  ...            Yes
Intel
3       2537.45  Standard           2880.0  ...            Yes
Intel
4       1803.60  Standard           2560.0  ...            Yes
Intel
6       2139.97  Standard           2880.0  ...            Yes
Intel
7       1158.70  Standard           1440.0  ...             No
Intel
8       1495.00   Full HD           1920.0  ...             No
Intel
12      2439.97  Standard           2880.0  ...            Yes
Intel
15      1518.55  Standard           2560.0  ...            Yes
Intel
17      2858.00  Standard           2880.0  ...            Yes
Intel
26      1099.00  Standard           1440.0  ...             No
Intel

   Islemci Frekansi Islemci Modeli Birincil Depolama  Ikincil Depolama
\
0               2.3        Core i5             128.0               0.0

3               2.7        Core i7             512.0               0.0
```

```
4                3.1        Core i5              256.0                0.0
6                2.2        Core i7              256.0                0.0
7                1.8        Core i5              256.0                0.0
8                1.8  Core i7 8550U              512.0                0.0
12               2.8        Core i7              256.0                0.0
15               2.3        Core i5              256.0                0.0
17               2.9        Core i7              512.0                0.0
26               1.6        Core i5              128.0                0.0

   Birincil Depolama Turu  Ikincil Depolama Turu  Grafik Karti Sirketi
\
0                     SSD                     No                 Intel
3                     SSD                     No                   AMD
4                     SSD                     No                 Intel
6           Flash Storage                     No                 Intel
7           Flash Storage                     No                 Intel
8                     SSD                     No                Nvidia
12                    SSD                     No                   AMD
15                    SSD                     No                 Intel
17                    SSD                     No                   AMD
26          Flash Storage                     No                 Intel

       Grafik Karti Modeli
0   Iris Plus Graphics 640
3          Radeon Pro 455
4   Iris Plus Graphics 650
6        Iris Pro Graphics
7         HD Graphics 6000
8            GeForce MX150
12         Radeon Pro 555
15  Iris Plus Graphics 640
17         Radeon Pro 560
```

```
26        HD Graphics 6000

[10 rows x 23 columns]
```

```
# Fiyat(Euro) > 1000 ve Isletim Sistemi 'Windows 10' olan satırları
filtreleme
filtrelenmis_df = yucel_df[(yucel_df['Fiyat(Euro)'] > 1000) &
(yucel_df['Isletim Sistemi'] == 'Windows 10')]

# Filtrelenmiş satırları ekrana yazdırma
print("\nFiyat(Euro) > 1000 ve Isletim Sistemi 'Windows 10' olan
satırlar:")
print(filtrelenmis_df)
```

```
Fiyat(Euro) > 1000 ve Isletim Sistemi 'Windows 10' olan satırlar:
      Sirket              Urun             Tur Adi   Inc   Ram  \
8       Asus    ZenBook UX430UN           Ultrabook  14.0  16.0
28      Dell      Latitude 5590           Ultrabook  15.6   8.0
33      Dell             XPS 13           Ultrabook  13.3  16.0
41      Dell      Inspiron 7577              Gaming  15.6  16.0
47      Asus          Rog Strix              Gaming  17.3   8.0
...      ...                ...                ...   ...   ...
1249    Dell             XPS 13  2 in 1 Convertible  13.3   8.0
1253  Lenovo      ThinkPad L460            Notebook  14.0   8.0
1256    Asus  Rog G752VT-GC073T              Gaming  17.3  16.0
1259     MSI        GE62 Apache              Gaming  15.6   8.0
1271  Lenovo     Yoga 900-13ISK  2 in 1 Convertible  13.3  16.0

     Isletim Sistemi  Agirlik  Fiyat(Euro)     Ekran  Ekran Genisligi
...  \
8         Windows 10     1.30       1495.0   Full HD           1920.0
...
28        Windows 10     1.88       1298.0   Full HD           1920.0
...
33        Windows 10     1.20       1869.0  Quad HD+           3200.0
...
41        Windows 10     2.65       1499.0   Full HD           1920.0
...
47        Windows 10     3.20       1299.0   Full HD           1920.0
...
...              ...      ...          ...       ...              ...
...
1249      Windows 10     1.24       1813.0  Quad HD+           3200.0
...
1253      Windows 10     1.90       1072.0   Full HD           1920.0
...
1256      Windows 10     4.00       1900.0   Full HD           1920.0
...
1259      Windows 10     2.40       1229.0   Full HD           1920.0
```

```
...
1271      Windows 10     1.30       1499.0  Quad HD+           3200.0
...

      Retina Ekran Islemci Sirketi Islemci Frekansi  Islemci Modeli  \
8               No           Intel              1.8   Core i7 8550U
28              No           Intel              1.9   Core i7 8650U
33              No           Intel              1.8   Core i7 8550U
41              No           Intel              2.8  Core i7 7700HQ
47              No             AMD              3.0      Ryzen 1700
...            ...             ...              ...             ...
1249            No           Intel              1.2    Core i5 7Y54
1253            No           Intel              2.3   Core i5 6200U
1256            No           Intel              2.6  Core i7 6700HQ
1259            No           Intel              2.6  Core i7 6700HQ
1271            No           Intel              2.5   Core i7 6500U

     Birincil Depolama  Ikincil Depolama Birincil Depolama Turu  \
8                512.0              0.0                     SSD
28               256.0            256.0                     SSD
33               512.0              0.0                     SSD
41               256.0           1024.0                     SSD
47               256.0           1024.0                     SSD
...                ...              ...                     ...
1249             256.0              0.0                     SSD
1253             256.0              0.0                     SSD
1256             128.0           1024.0                     SSD
1259             128.0           1024.0                     SSD
1271             512.0              0.0                     SSD

      Ikincil Depolama Turu  Grafik Karti Sirketi Grafik Karti Modeli

8                       No               Nvidia       GeForce MX150

28                     SSD                Intel    UHD Graphics 620

33                      No                Intel    UHD Graphics 620

41                     HDD               Nvidia    GeForce GTX 1060

47                     HDD                  AMD       Radeon RX 580

...                    ...                  ...                 ...

1249                    No                Intel     HD Graphics 615

1253                    No                Intel     HD Graphics 520

1256                   HDD               Nvidia    GeForce GTX 970M
```

```
1259                    HDD                 Nvidia    GeForce GTX 960M

1271                     No                  Intel     HD Graphics 520


[541 rows x 23 columns]
```

1. DataFrame'de indeksi sıfırlayınız.

```
# İndeksi sıfırlama (mevcut indeksleri atarak)
yeni_df = yucel_df.reset_index(drop=True)

# İndeksi sıfırlanmış DataFrame'i ekrana yazdırma
print("İndeksi sıfırlanmış DataFrame:")
print(yeni_df.head(10))
```

```
İndeksi sıfırlanmış DataFrame:
  Sirket             Urun    Tur Adi   Inc   Ram Isletim Sistemi
Agirlik  \
0  Apple      MacBook Pro  Ultrabook  13.3   8.0           macOS
1.37
1  Apple      Macbook Air  Ultrabook  13.3   8.0           macOS
1.34
2     HP           250 G6   Notebook  15.6   8.0           No OS
1.86
3  Apple      MacBook Pro  Ultrabook  15.4  16.0           macOS
1.83
4  Apple      MacBook Pro  Ultrabook  13.3   8.0           macOS
1.37
5   Acer         Aspire 3   Notebook  15.6   4.0      Windows 10
2.10
6  Apple      MacBook Pro  Ultrabook  15.4  16.0        Mac OS X
2.04
7  Apple      Macbook Air  Ultrabook  13.3   8.0           macOS
1.34
8   Asus  ZenBook UX430UN  Ultrabook  14.0  16.0      Windows 10
1.30
9   Acer          Swift 3  Ultrabook  14.0   8.0      Windows 10
1.60

   Fiyat(Euro)     Ekran  Ekran Genisligi  ...  Retina Ekran Islemci
Sirketi  \
0      1339.69  Standard           2560.0  ...            Yes
Intel
1       898.94  Standard           1440.0  ...             No
Intel
2       575.00   Full HD           1920.0  ...             No
Intel
3      2537.45  Standard           2880.0  ...            Yes
Intel
```

```
4      1803.60  Standard           2560.0  ...           Yes
Intel
5       400.00  Standard           1366.0  ...            No
AMD
6      2139.97  Standard           2880.0  ...           Yes
Intel
7      1158.70  Standard           1440.0  ...            No
Intel
8      1495.00   Full HD           1920.0  ...            No
Intel
9       770.00   Full HD           1920.0  ...            No
Intel

  Islemci Frekansi  Islemci Modeli Birincil Depolama  Ikincil Depolama
\
0              2.3         Core i5             128.0               0.0

1              1.8         Core i5             128.0               0.0

2              2.5   Core i5 7200U             256.0               0.0

3              2.7         Core i7             512.0               0.0

4              3.1         Core i5             256.0               0.0

5              3.0  A9-Series 9420             500.0               0.0

6              2.2         Core i7             256.0               0.0

7              1.8         Core i5             256.0               0.0

8              1.8   Core i7 8550U             512.0               0.0

9              1.6   Core i5 8250U             256.0               0.0


  Birincil Depolama Turu  Ikincil Depolama Turu  Grafik Karti Sirketi
\
0                    SSD                      No                 Intel

1          Flash Storage                      No                 Intel

2                    SSD                      No                 Intel

3                    SSD                      No                   AMD

4                    SSD                      No                 Intel

5                    HDD                      No                   AMD

6          Flash Storage                      No                 Intel
```

```
7          Flash Storage                          No                   Intel

8                    SSD                          No                  Nvidia

9                    SSD                          No                   Intel


      Grafik Karti Modeli
0  Iris Plus Graphics 640
1        HD Graphics 6000
2         HD Graphics 620
3          Radeon Pro 455
4  Iris Plus Graphics 650
5               Radeon R5
6       Iris Pro Graphics
7        HD Graphics 6000
8           GeForce MX150
9        UHD Graphics 620

[10 rows x 23 columns]
```

1. dataFrame'e yeni bir sütun ilave ediniz.

```
# 1 Euro'nun TL karşılığı kurunu belirleyelim (37 TL)
euro_to_tl = 37

# Fiyat(Euro) sütunundaki değerleri Türk Lirası'na çevirelim ve yeni
bir sütun ekleyelim
yucel_df['Fiyat(TürkLirasi)'] = yucel_df['Fiyat(Euro)'] * euro_to_tl

# Yeni eklenen sütunu içeren DataFrame'i gösterelim
print("Yeni sütun (Fiyat(TürkLirasi)) eklendikten sonraki DataFrame:")
print(yucel_df[['Fiyat(Euro)', 'Fiyat(TürkLirasi)']].head())
```

```
Yeni sütun (Fiyat(TürkLirasi)) eklendikten sonraki DataFrame:
   Fiyat(Euro)  Fiyat(TürkLirasi)
0      1339.69           49568.53
1       898.94           33260.78
2       575.00           21275.00
3      2537.45           93885.65
4      1803.60           66733.20
```

1. DataFrame'den bir sütunu geçici olarak siliniz.

```
# Fiyat(Euro) sütununu geçici olarak silme
gecici_df = yucel_df.drop('Fiyat(Euro)', axis=1)

# Geçici DataFrame'i ekrana yazdırma
print("Geçici DataFrame (Fiyat(Euro) sütunu silindi):")
print(gecici_df.head())
```

```
# Orijinal DataFrame'e bakalım (Fiyat(Euro) sütunu hala mevcut)
print("\nOrijinal DataFrame:")
print(yucel_df.head())
```

```
Geçici DataFrame (Fiyat(Euro) sütunu silindi):
  Sirket         Urun    Tur Adi   Inc   Ram Isletim Sistemi  Agirlik
\
0  Apple  MacBook Pro  Ultrabook  13.3   8.0           macOS     1.37

1  Apple  Macbook Air  Ultrabook  13.3   8.0           macOS     1.34

2     HP       250 G6   Notebook  15.6   8.0           No OS     1.86

3  Apple  MacBook Pro  Ultrabook  15.4  16.0           macOS     1.83

4  Apple  MacBook Pro  Ultrabook  13.3   8.0           macOS     1.37


      Ekran  Ekran Genisligi  Ekran Yuksekligi  ... Islemci Sirketi  \
0  Standard           2560.0            1600.0  ...            Intel
1  Standard           1440.0             900.0  ...            Intel
2   Full HD           1920.0            1080.0  ...            Intel
3  Standard           2880.0            1800.0  ...            Intel
4  Standard           2560.0            1600.0  ...            Intel

  Islemci Frekansi Islemci Modeli Birincil Depolama  Ikincil Depolama
\
0              2.3        Core i5             128.0               0.0

1              1.8        Core i5             128.0               0.0

2              2.5  Core i5 7200U             256.0               0.0

3              2.7        Core i7             512.0               0.0

4              3.1        Core i5             256.0               0.0


  Birincil Depolama Turu  Ikincil Depolama Turu  Grafik Karti Sirketi
\
0                    SSD                     No                 Intel

1          Flash Storage                     No                 Intel

2                    SSD                     No                 Intel

3                    SSD                     No                   AMD

4                    SSD                     No                 Intel
```

```
      Grafik Karti Modeli Fiyat(TürkLirasi)
0  Iris Plus Graphics 640          49568.53
1        HD Graphics 6000          33260.78
2         HD Graphics 620          21275.00
3          Radeon Pro 455          93885.65
4  Iris Plus Graphics 650          66733.20

[5 rows x 23 columns]

Orijinal DataFrame:
  Sirket         Urun    Tur Adi   Inc   Ram Isletim Sistemi  Agirlik
\
0  Apple  MacBook Pro  Ultrabook  13.3   8.0           macOS     1.37

1  Apple  Macbook Air  Ultrabook  13.3   8.0           macOS     1.34

2     HP       250 G6   Notebook  15.6   8.0           No OS     1.86

3  Apple  MacBook Pro  Ultrabook  15.4  16.0           macOS     1.83

4  Apple  MacBook Pro  Ultrabook  13.3   8.0           macOS     1.37


   Fiyat(Euro)     Ekran  Ekran Genisligi  ...  Islemci Sirketi  \
0      1339.69  Standard           2560.0  ...            Intel
1       898.94  Standard           1440.0  ...            Intel
2       575.00   Full HD           1920.0  ...            Intel
3      2537.45  Standard           2880.0  ...            Intel
4      1803.60  Standard           2560.0  ...            Intel

  Islemci Frekansi Islemci Modeli Birincil Depolama Ikincil
Depolama  \
0              2.3        Core i5             128.0              0.0

1              1.8        Core i5             128.0              0.0

2              2.5  Core i5 7200U             256.0              0.0

3              2.7        Core i7             512.0              0.0

4              3.1        Core i5             256.0              0.0


   Birincil Depolama Turu Ikincil Depolama Turu  Grafik Karti Sirketi
\
0                     SSD                    No                 Intel

1           Flash Storage                    No                 Intel

2                     SSD                    No                 Intel
```

```
3                      SSD                      No                     AMD

4                      SSD                      No                   Intel


      Grafik Karti Modeli Fiyat(TürkLirasi)
0  Iris Plus Graphics 640          49568.53
1        HD Graphics 6000          33260.78
2         HD Graphics 620          21275.00
3          Radeon Pro 455          93885.65
4  Iris Plus Graphics 650          66733.20

[5 rows x 24 columns]
```

1. DataFrame'den bir sütunu kalıcı olarak siliniz.

```
# Fiyat(Euro) sütununu kalıcı olarak silmek için inplace=True
kullanıyoruz
yucel_df.drop('Fiyat(Euro)', axis=1, inplace=True)

# Orijinal DataFrame'i gösterelim (Fiyat(Euro) sütunu kalıcı olarak
silindi)
print("Kalıcı olarak Fiyat(Euro) sütunu silindikten sonra DataFrame:")
print(yucel_df.head())

Kalıcı olarak Fiyat(Euro) sütunu silindikten sonra DataFrame:
  Sirket         Urun    Tur Adi   Inc   Ram Isletim Sistemi  Agirlik
\
0  Apple  MacBook Pro  Ultrabook  13.3   8.0           macOS     1.37

1  Apple  Macbook Air  Ultrabook  13.3   8.0           macOS     1.34

2     HP       250 G6   Notebook  15.6   8.0           No OS     1.86

3  Apple  MacBook Pro  Ultrabook  15.4  16.0           macOS     1.83

4  Apple  MacBook Pro  Ultrabook  13.3   8.0           macOS     1.37


      Ekran  Ekran Genisligi  Ekran Yuksekligi  ... Islemci Sirketi  \
0  Standard           2560.0            1600.0  ...            Intel
1  Standard           1440.0             900.0  ...            Intel
2   Full HD           1920.0            1080.0  ...            Intel
3  Standard           2880.0            1800.0  ...            Intel
4  Standard           2560.0            1600.0  ...            Intel

  Islemci Frekansi Islemci Modeli Birincil Depolama  Ikincil Depolama
\
0              2.3        Core i5             128.0               0.0
```

```
1              1.8        Core i5              128.0                0.0

2              2.5  Core i5 7200U              256.0                0.0

3              2.7        Core i7              512.0                0.0

4              3.1        Core i5              256.0                0.0


  Birincil Depolama Turu  Ikincil Depolama Turu  Grafik Karti Sirketi
\
0                    SSD                      No                 Intel

1          Flash Storage                      No                 Intel

2                    SSD                      No                 Intel

3                    SSD                      No                   AMD

4                    SSD                      No                 Intel


      Grafik Karti Modeli Fiyat(TürkLirasi)
0  Iris Plus Graphics 640          49568.53
1        HD Graphics 6000          33260.78
2         HD Graphics 620          21275.00
3          Radeon Pro 455          93885.65
4  Iris Plus Graphics 650          66733.20

[5 rows x 23 columns]
```

1. DataFrame hakkındaki genel bilgiyi ekranda listeleyiniz.

```
# DataFrame hakkındaki genel bilgileri ekrana yazdırma
print("DataFrame hakkında genel bilgi:")
yucel_df.info()
```

```
DataFrame hakkında genel bilgi:
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 1275 entries, 0 to 1274
Data columns (total 23 columns):
 #   Column                  Non-Null Count  Dtype
---  ------                  --------------  -----
 0   Sirket                  1275 non-null   object
 1   Urun                    1267 non-null   object
 2   Tur Adi                 1267 non-null   object
 3   Inc                     1267 non-null   float64
 4   Ram                     1267 non-null   float64
 5   Isletim Sistemi         1267 non-null   object
 6   Agirlik                 1267 non-null   float64
 7   Ekran                   1267 non-null   object
```

```
 8   Ekran Genisligi          1267 non-null   float64
 9   Ekran Yuksekligi         1267 non-null   float64
 10  Dokunmatik Ekran         1267 non-null   object
 11  IPS Panel                1267 non-null   object
 12  Retina Ekran             1267 non-null   object
 13  Islemci Sirketi          1267 non-null   object
 14  Islemci Frekansi         1267 non-null   float64
 15  Islemci Modeli           1267 non-null   object
 16  Birincil Depolama        1267 non-null   float64
 17  Ikincil Depolama         1267 non-null   float64
 18  Birincil Depolama Turu   1267 non-null   object
 19  Ikincil Depolama Turu    1267 non-null   object
 20  Grafik Karti Sirketi     1267 non-null   object
 21  Grafik Karti Modeli      1267 non-null   object
 22  Fiyat(TürkLirasi)        1267 non-null   float64
dtypes: float64(9), object(14)
memory usage: 229.2+ KB
```

1. System Kütüphanesi versiyonunu bulunuz.

```
import sys

# Python versiyonunu bulma
python_version = sys.version

# Python versiyonunu ekrana yazdırma
print(f"Sistem kütüphanesi Python versiyonu: {python_version}")
```

```
Sistem kütüphanesi Python versiyonu: 3.12.1 (tags/v3.12.1:2305ca5, Dec
7 2023, 22:03:25) [MSC v.1937 64 bit (AMD64)]
```

1. Pandas Kütüphanesinin versiyonunu bulunuz.

```
import pandas as pd

# Pandas kütüphanesinin versiyonunu bulma
pandas_version = pd.__version__

# Pandas versiyonunu ekrana yazdırma
print(f"Pandas kütüphanesi versiyonu: {pandas_version}")
```

```
Pandas kütüphanesi versiyonu: 2.2.2
```

1. Matplotlib kütüphanesinin versiyonunu bulunuz.

```
import matplotlib

# Matplotlib kütüphanesinin versiyonunu bulma
matplotlib_version = matplotlib.__version__
```

```
# Matplotlib versiyonunu ekrana yazdırma
print(f"Matplotlib kütüphanesi versiyonu: {matplotlib_version}")
```

```
Matplotlib kütüphanesi versiyonu: 3.9.2
```

1. Veri setindeki min, max, mean, count değerlerini bulunuz.

```
# Veri setindeki min, max, mean, count değerlerini bulma
istatistikler = yucel_df.describe()

# İstatistikleri ekrana yazdırma
print("Veri setindeki min, max, mean, count değerleri:")
print(istatistikler)
```

```
Veri setindeki min, max, mean, count değerleri:
                Inc           Ram      Agirlik  Ekran Genisligi  \
count  1267.000000  1267.000000  1267.000000      1267.000000
mean     15.036306     8.449882     2.046069      1898.099448
std       1.418550     5.110746     0.666810       494.116071
min      10.100000     2.000000     0.690000      1366.000000
25%      14.000000     4.000000     1.500000      1760.000000
50%      15.600000     8.000000     2.040000      1920.000000
75%      15.600000     8.000000     2.310000      1920.000000
max      18.400000    64.000000     4.700000      3840.000000

       Ekran Yuksekligi  Islemci Frekansi  Birincil Depolama  \
count       1267.000000       1267.000000        1267.000000
mean        1072.161010          2.309645         445.404893
std          283.656579          0.498277         366.248057
min          768.000000          0.900000           8.000000
25%          990.000000          2.000000         256.000000
50%         1080.000000          2.500000         256.000000
75%         1080.000000          2.700000         512.000000
max         2160.000000          3.600000        2048.000000

       Ikincil Depolama  Fiyat(TürkLirasi)
count       1267.000000        1267.000000
mean         177.180742       42020.326456
std          417.036556       25972.514509
min            0.000000        6438.000000
25%            0.000000       22533.000000
50%            0.000000       36445.000000
75%            0.000000       55426.000000
max         2048.000000      225663.000000
```

1. "pd.pivot.table()" metodunu kullanarak, dataFrame'deki bir sütundan tek indeksli "pivot table" oluşturunuz.

```
# Sirket sütununa göre ortalama Fiyat(TürkLirasi) değerini hesaplayan
pivot table oluşturma
```

```
pivot_table = pd.pivot_table(yucel_df, values='Fiyat(TürkLirasi)',
index='Sirket', aggfunc='mean')

# Oluşturulan pivot table'ı ekrana yazdırma
print("Sirket sütununa göre ortalama Fiyat(Euro) değerleri:")
print(pivot_table)
```

```
Sirket sütununa göre ortalama Fiyat(Euro) değerleri:
           Fiyat(TürkLirasi)
Sirket
Acer             23438.184851
Apple            62082.966000
Asus             41581.700263
Chuwi            16613.000000
Dell             44371.329450
Fujitsu          26973.000000
Google           62073.666667
HP               39971.642575
Huawei           52688.000000
LG               77663.000000
Lenovo           40472.901938
MSI              63969.601481
Mediacom         10915.000000
Microsoft        59655.408333
Razer           123807.285714
Samsung          52297.444444
Toshiba          46909.062500
Vero              8044.725000
Xiaomi           41938.112500
```

1. "pd.pivot.table()" metodunu kullanarak, dataFrame'deki birden fazla sütundan çok indeksli "pivot table" oluşturunuz.

```
# Sirket ve Isletim Sistemi sütunlarına göre ortalama
Fiyat(TürkLirasi) ve Ram değerlerini hesaplayan pivot table
pivot_table_multi = pd.pivot_table(
    yucel_df,
    values=['Fiyat(TürkLirasi)', 'Ram'],
    index=['Sirket', 'Isletim Sistemi'],
    aggfunc='mean'
)

# Oluşturulan pivot table'ı ekrana yazdırma
print("Sirket ve Isletim Sistemi'ne göre ortalama Fiyat(TürkLirasi) ve
Ram değerleri:")
print(pivot_table_multi)
```

```
Sirket ve Isletim Sistemi'ne göre ortalama Fiyat(TürkLirasi) ve Ram
değerleri:
                           Fiyat(TürkLirasi)        Ram
```

```
Sirket     Isletim Sistemi
Acer       Chrome OS              11486.818182   3.454545
           Linux                  20671.371429   5.714286
           Windows 10             25677.664079   6.447368
Apple      Mac OS X               48062.722500   9.000000
           macOS                  67181.236364  10.181818
Asus       Chrome OS              26096.100000   5.333333
           Linux                  17941.189000   5.600000
           No OS                  33623.750000   9.000000
           Windows 10             44401.185113  10.285714
           Windows 10 S           11432.815000   4.000000
Chuwi      Windows 10             16613.000000   6.000000
Dell       Chrome OS              10915.000000   4.000000
           Linux                  25462.224706   6.705882
           Windows 10             47146.633333   9.694779
           Windows 7              42273.504286   5.714286
Fujitsu    Windows 10             26973.000000   6.666667
Google     Chrome OS              62073.666667  10.666667
HP         Chrome OS              19517.500000   5.000000
           No OS                  13735.232500   4.333333
           Windows 10             38793.517642   7.082969
           Windows 7              68947.473043   7.478261
Huawei     Windows 10             52688.000000   8.000000
LG         Windows 10             77663.000000  10.666667
Lenovo     Android                16058.000000   4.000000
           Chrome OS              12948.766667   4.000000
           No OS                  21347.992340   6.468085
           Windows 10             43723.293125   8.357143
           Windows 7              63717.927692  10.153846
MSI        Windows 10             63969.601481  13.037037
Mediacom   Windows 10             10915.000000   3.714286
Microsoft  Windows 10 S           59655.408333   8.000000
Razer      Windows 10            123807.285714  19.428571
Samsung    Chrome OS              17168.000000   4.000000
           Windows 10             62334.428571  12.571429
Toshiba    Windows 10             46813.043478   8.782609
           Windows 7              49117.500000   6.000000
Vero       Windows 10              8044.725000   3.500000
Xiaomi     No OS                  44385.816667  10.666667
           Windows 10             34595.000000   8.000000
```

1. Pivot_table'da "aggfunc=np.sum" fonksiyonunu kullanınız.

```
import numpy as np
# Sirket ve Isletim Sistemi sütunlarına göre toplam Fiyat(TürkLirasi)
ve Ram değerlerini hesaplayan pivot table
pivot_table_sum = pd.pivot_table(
    yucel_df,
    values=['Fiyat(TürkLirasi)', 'Ram'],
    index=['Sirket', 'Isletim Sistemi'],
```

```
    aggfunc=np.sum
)

# Oluşturulan pivot table'ı ekrana yazdırma
print("Sirket ve Isletim Sistemi'ne göre toplam Fiyat(TürkLirasi) ve
Ram değerleri:")
print(pivot_table_sum)
```

```
Sirket ve Isletim Sistemi'ne göre toplam Fiyat(TürkLirasi) ve Ram
değerleri:
                          Fiyat(TürkLirasi)     Ram
Sirket    Isletim Sistemi
Acer      Chrome OS                126355.00    38.0
          Linux                    289399.20    80.0
          Windows 10              1951502.47   490.0
Apple     Mac OS X                 192250.89    36.0
          macOS                    738993.60   112.0
Asus      Chrome OS                 78288.30    16.0
          Linux                    179411.89    56.0
          No OS                    134495.00    36.0
          Windows 10              5905357.62  1368.0
          Windows 10 S              22865.63     8.0
Chuwi     Windows 10                16613.00     6.0
Dell      Chrome OS                 10915.00     4.0
          Linux                    865715.64   228.0
          Windows 10             11739511.70  2414.0
          Windows 7                295914.53    40.0
Fujitsu   Windows 10                80919.00    20.0
Google    Chrome OS                186221.00    32.0
HP        Chrome OS                 78070.00    20.0
          No OS                    164822.79    52.0
          Windows 10              8883715.54  1622.0
          Windows 7               1585791.88   172.0
Huawei    Windows 10               105376.00    16.0
LG        Windows 10               232989.00    32.0
Lenovo    Android                   32116.00     8.0
          Chrome OS                 38846.30    12.0
          No OS                   1003355.64   304.0
          Windows 10              9794017.66  1872.0
          Windows 7                828333.06   132.0
MSI       Windows 10              3454358.48   704.0
Mediacom  Windows 10                76405.00    26.0
Microsoft Windows 10 S             357932.45    48.0
Razer     Windows 10               866651.00   136.0
Samsung   Chrome OS                 34336.00     8.0
          Windows 10               436341.00    88.0
Toshiba   Windows 10              2153400.00   404.0
          Windows 7                 98235.00    12.0
Vero      Windows 10                32178.90    14.0
```

```
Xiaomi    No OS                    133157.45    32.0
          Windows 10                34595.00     8.0

C:\Users\yavuz.yucel\AppData\Local\Temp\
ipykernel_3788\2492793619.py:3: FutureWarning: The provided callable
<function sum at 0x000001AF2326D120> is currently using
DataFrameGroupBy.sum. In a future version of pandas, the provided
callable will be used directly. To keep current behavior pass the
string "sum" instead.
  pivot_table_sum = pd.pivot_table(
```

1. dataFrame'i CSV dosyası olarak kaydediniz.

```
# DataFrame'i CSV dosyası olarak kaydetme
yucel_df.to_csv('yucel_df_kayit.csv', index=False)

# Kaydedilen dosyanın adı: 'yucel_df_kayit.csv'
print("DataFrame, CSV dosyası olarak kaydedildi.")

DataFrame, CSV dosyası olarak kaydedildi.
```

1. dataFrame'i excel dosyası olarak kaydediniz.

```
# Pandas, Excel dosyalarını kaydetmek için bir dış kütüphaneye ihtiyac
duyar.
!pip install openpyxl

Requirement already satisfied: openpyxl in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (3.1.5)
Requirement already satisfied: et-xmlfile in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
openpyxl) (1.1.0)


[notice] A new release of pip is available: 24.0 -> 24.2
[notice] To update, run: python.exe -m pip install --upgrade pip


# DataFrame'i Excel dosyası olarak kaydetme
yucel_df.to_excel('yucel_df_kayit.xlsx', index=False)

print("DataFrame, Excel dosyası olarak kaydedildi.")

DataFrame, Excel dosyası olarak kaydedildi.
```

1. DataFrame'i HTML dosyası olarak kaydetme

```
# DataFrame'i HTML dosyası olarak kaydetme
yucel_df.to_html('yucel_df_kayit.html', index=False)

print("DataFrame, HTML dosyası olarak kaydedildi.")
```

```
DataFrame, HTML dosyası olarak kaydedildi.
```

1. DataFrame'i JSON dosyası olarak kaydetme

```
# DataFrame'i JSON dosyası olarak kaydetme
yucel_df.to_json('yucel_df_kayit.json')

print("DataFrame, JSON dosyası olarak kaydedildi.")
```

```
DataFrame, JSON dosyası olarak kaydedildi.
```

1. DataFrame'i TXT dosyası olarak kaydetme

```
# DataFrame'i TXT dosyası olarak kaydetme (CSV formatında .txt
uzantısı ile)
yucel_df.to_csv('yucel_df_kayit.txt', index=False, sep='\t')

print("DataFrame, TXT dosyası olarak kaydedildi.")
```

```
DataFrame, TXT dosyası olarak kaydedildi.
```

1. dataFrame'deki bir sütunu küçükten büyüğe sıralayınız.

```
# Fiyat(TürkLirasi) sütununu büyükten küçüğe sıralama
sorted_df_desc = yucel_df.sort_values(by='Fiyat(TürkLirasi)',
ascending=True)

# Sadece Sirket, Fiyat(TürkLirasi) ve Ram sütunlarını gösterecek
şekilde sıralı veriyi yazdırma
print("Fiyat(TürkLirasi) sütununa göre büyükten küçüğe sıralanmış
DataFrame (sadece belirli sütunlar):")
print(sorted_df_desc[['Sirket', 'Fiyat(TürkLirasi)']].head())
```

```
Fiyat(TürkLirasi) sütununa göre büyükten küçüğe sıralanmış DataFrame
(sadece belirli sütunlar):
     Sirket  Fiyat(TürkLirasi)
1215   Acer             6438.0
20     Asus             7100.3
1120   Vero             7252.0
290    Acer             7363.0
31     Asus             7363.0
```

1. dataFrame'deki bir sütunu büyükten küçüğe sıralayınız.

```
# Fiyat(TürkLirasi) sütununu büyükten küçüğe sıralama
sorted_df_desc = yucel_df.sort_values(by='Fiyat(TürkLirasi)',
ascending=False)

# Sadece Sirket, Fiyat(TürkLirasi) ve Ram sütunlarını gösterecek
şekilde sıralı veriyi yazdırma
print("Fiyat(TürkLirasi) sütununa göre büyükten küçüğe sıralanmış
```

```
DataFrame (sadece belirli sütunlar):")
print(sorted_df_desc[['Sirket', 'Fiyat(TürkLirasi)']].head(10))
```

```
Fiyat(TürkLirasi) sütununa göre büyükten küçüğe sıralanmış DataFrame
(sadece belirli sütunlar):
      Sirket  Fiyat(TürkLirasi)
196    Razer           225663.0
830    Razer           203463.0
610   Lenovo           181263.0
749       HP           162393.0
1066    Asus           147075.0
1136      HP           146127.8
238     Asus           143930.0
723     Dell           135397.8
780     Dell           132785.6
1231   Razer           129463.0
```

1. dataFrame'deki iki sütunu küçükten büyüğe sıralayınız.

```
# Fiyat(TürkLirasi) ve Ram sütunlarını küçükten büyüğe sıralama
sorted_df_two_columns = yucel_df.sort_values(by=['Fiyat(TürkLirasi)',
'Ram'], ascending=True)

# Sıralanmış DataFrame'in ilk 5 satırını ekrana yazdırma
print("Fiyat(TürkLirasi) ve Ram sütunlarına göre küçükten büyüğe
sıralanmış DataFrame:")
print(sorted_df_two_columns[['Sirket', 'Fiyat(TürkLirasi)',
'Ram']].head())
```

```
Fiyat(TürkLirasi) ve Ram sütunlarına göre küçükten büyüğe sıralanmış
DataFrame:
     Sirket  Fiyat(TürkLirasi)  Ram
1215   Acer             6438.0  2.0
20     Asus             7100.3  2.0
1120   Vero             7252.0  4.0
31     Asus             7363.0  2.0
290    Acer             7363.0  2.0
```

1. dataFrame'deki iki sütunu büyükten küçüğe sıralayınız.

```
# Fiyat(TürkLirasi) ve Ram sütunlarını büyükten küçüğe sıralama
sorted_df_two_columns_desc =
yucel_df.sort_values(by=['Fiyat(TürkLirasi)', 'Ram'], ascending=False)

# Sıralanmış DataFrame'in ilk 5 satırını ekrana yazdırma
print("Fiyat(TürkLirasi) ve Ram sütunlarına göre büyükten küçüğe
sıralanmış DataFrame:")
print(sorted_df_two_columns_desc[['Sirket', 'Fiyat(TürkLirasi)',
'Ram']].head())
```

```
Fiyat(TürkLirasi) ve Ram sütunlarına göre büyükten küçüğe sıralanmış
DataFrame:
      Sirket  Fiyat(TürkLirasi)   Ram
196    Razer           225663.0  32.0
830    Razer           203463.0  32.0
610   Lenovo           181263.0  32.0
749       HP           162393.0  16.0
1066    Asus           147075.0  64.0
```

1. dataFrame'deki 5 veriyi tesadüfi olarak listeleyiniz.

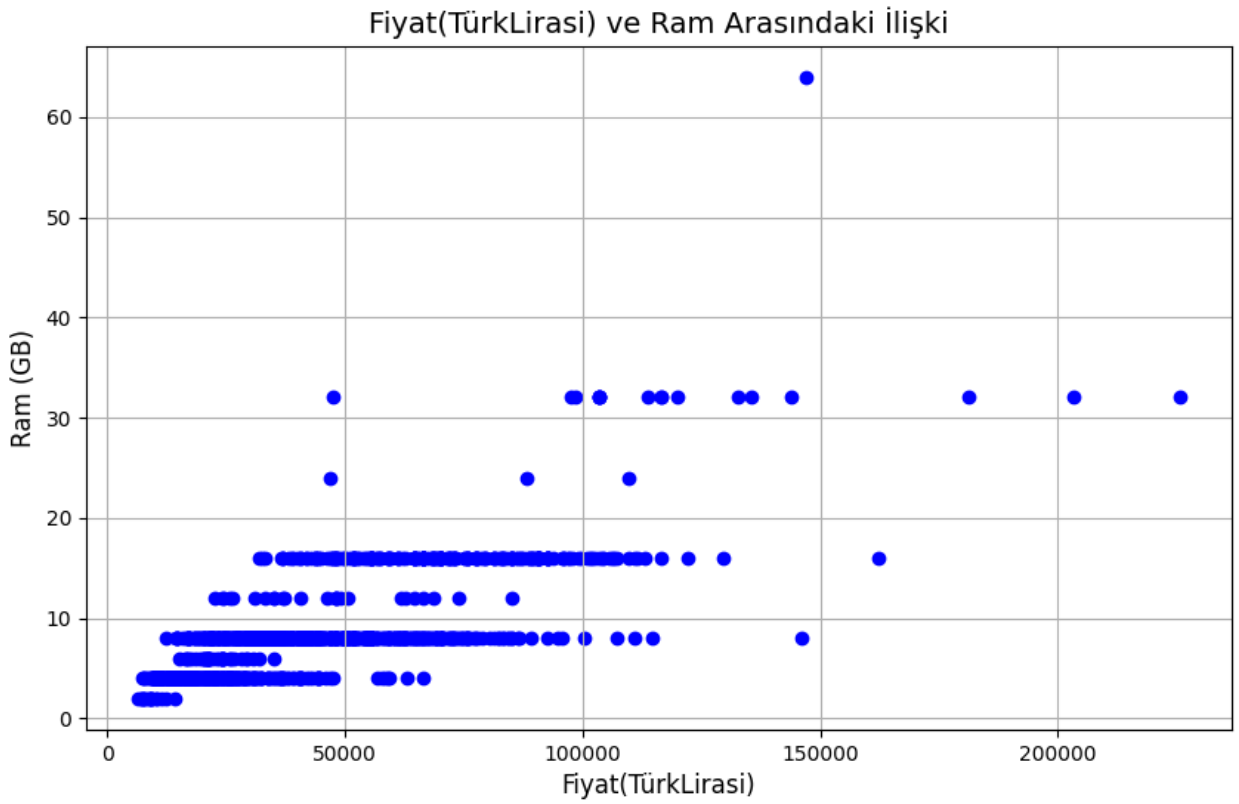
```
# DataFrame'den tesadüfi 5 veri seçme
random_sample = yucel_df.sample(n=5)

# Tesadüfi seçilen 5 veriyi ekrana yazdırma
print("Tesadüfi seçilen 5 veri:")
print(random_sample)
```

```
Tesadüfi seçilen 5 veri:
      Sirket                Urun    Tur Adi   Inc  Ram Isletim Sistemi
\
417       HP      EliteBook 1040  Ultrabook  14.0  8.0      Windows 10

1005      HP       EliteBook 840   Notebook  14.0  4.0      Windows 10

366     Dell       Inspiron 5770   Notebook  17.3  8.0      Windows 10

534     Asus           ROG Strix     Gaming  15.6  8.0      Windows 10

142   Lenovo  Legion Y520-15IKBN     Gaming  15.6  8.0           No OS


      Agirlik     Ekran  Ekran Genisligi  Ekran Yuksekligi  ...  \
417      1.43   Full HD           1920.0            1080.0  ...
1005     1.48  Standard           1366.0             768.0  ...
366      2.80   Full HD           1920.0            1080.0  ...
534      2.30   Full HD           1920.0            1080.0  ...
142      2.40   Full HD           1920.0            1080.0  ...

     Islemci Sirketi Islemci Frekansi  Islemci Modeli Birincil
Depolama  \
417            Intel              2.5   Core i7 6500U
256.0
1005           Intel              2.4   Core i5 6300U
256.0
366            Intel              1.6   Core i5 8250U
128.0
534            Intel              2.5  Core i5 7300HQ
128.0
142            Intel              2.8  Core i7 7700HQ
```

```
256.0

      Ikincil Depolama Birincil Depolama Turu  Ikincil Depolama
Turu  \
417                0.0                     SSD                      No

1005               0.0                     SSD                      No

366             1024.0                     SSD                     HDD

534             1024.0                     SSD                     HDD

142                0.0                     SSD                      No


      Grafik Karti Sirketi Grafik Karti Modeli Fiyat(TürkLirasi)
417                  Intel     HD Graphics 520          55500.00
1005                 Intel     HD Graphics 520          40699.63
366                    AMD          Radeon 530          40145.00
534                 Nvidia    GeForce GTX 1060          61013.00
142                 Nvidia   GeForce GTX 1050M          32153.00

[5 rows x 23 columns]
```

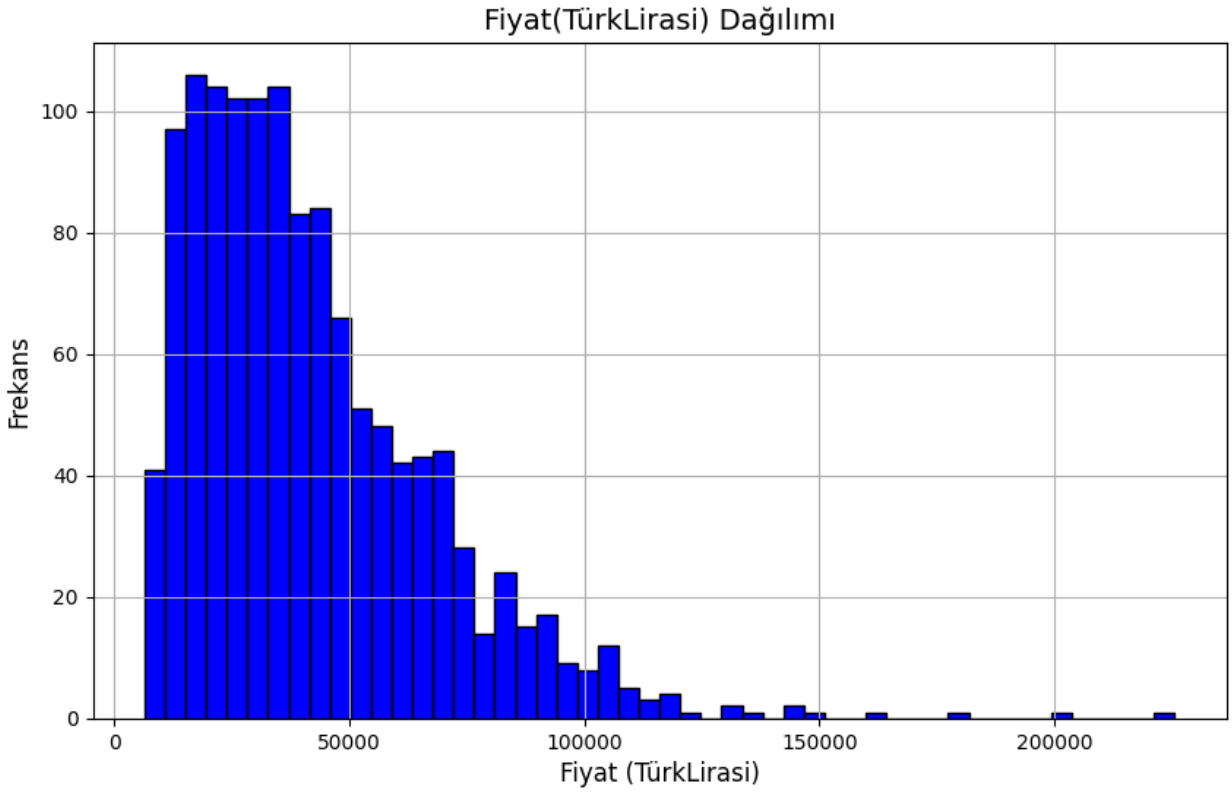
1. Veri seti ile ilgili olarak, Scatter plot

```python
import matplotlib.pyplot as plt

# Scatter plot oluşturma (Fiyat(TürkLirasi) ve Ram)
plt.figure(figsize=(10, 6))
plt.scatter(yucel_df['Fiyat(TürkLirasi)'], yucel_df['Ram'],
color='blue')

# Grafiğe başlık ve eksen etiketleri ekleme
plt.title("Fiyat(TürkLirasi) ve Ram Arasındaki İlişki", fontsize=14)
plt.xlabel("Fiyat(TürkLirasi)", fontsize=12)
plt.ylabel("Ram (GB)", fontsize=12)

# Scatter plot'u gösterme
plt.grid(True)
plt.show()
```

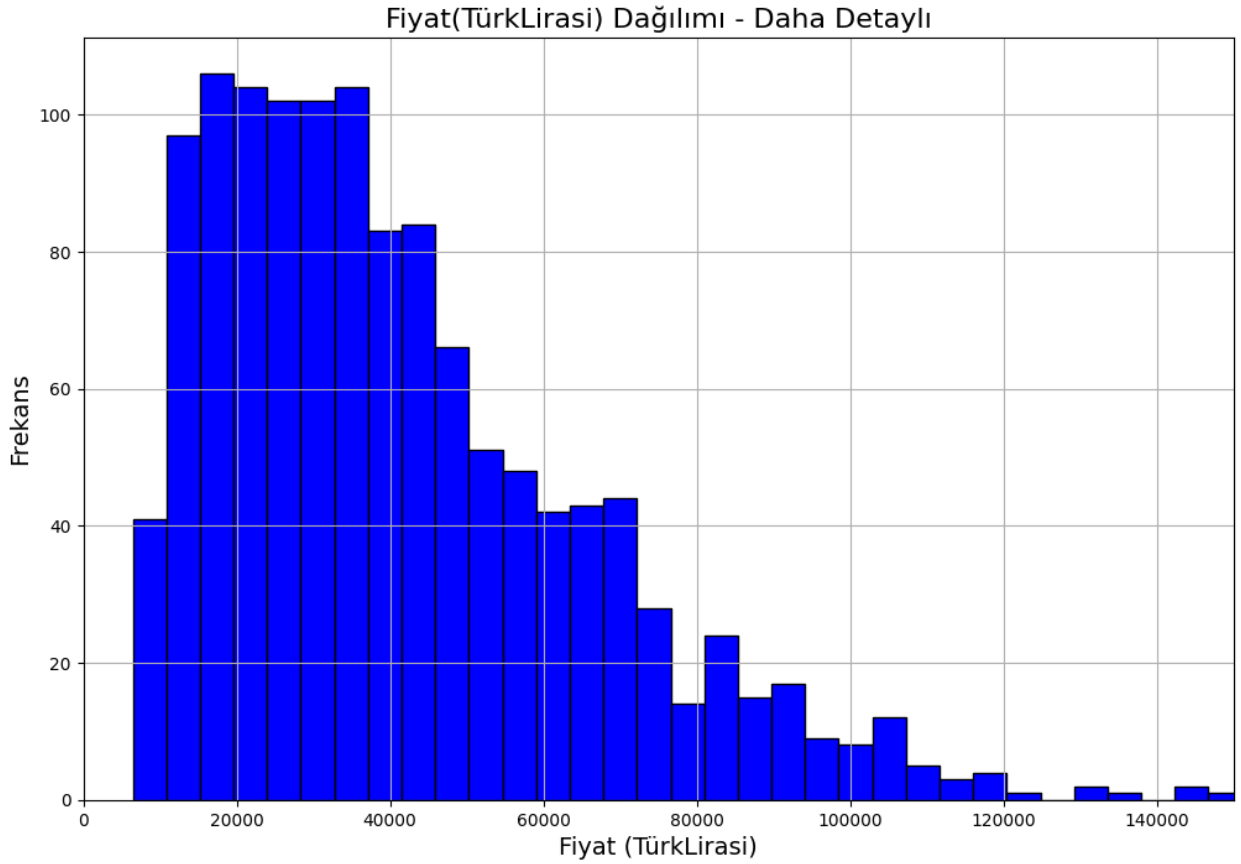


1. Histogram

```
import matplotlib.pyplot as plt

# Histogram oluşturma (Fiyat(TürkLirasi) sütunu)
plt.figure(figsize=(10, 6))
plt.hist(yucel_df['Fiyat(TürkLirasi)'], bins=50, color='blue',
edgecolor='black')

# Grafiğe başlık ve eksen etiketleri ekleme
plt.title("Fiyat(TürkLirasi) Dağılımı", fontsize=14)
plt.xlabel("Fiyat (TürkLirasi)", fontsize=12)
plt.ylabel("Frekans", fontsize=12)

# Histogram'ı gösterme
plt.grid(True)
plt.show()
```



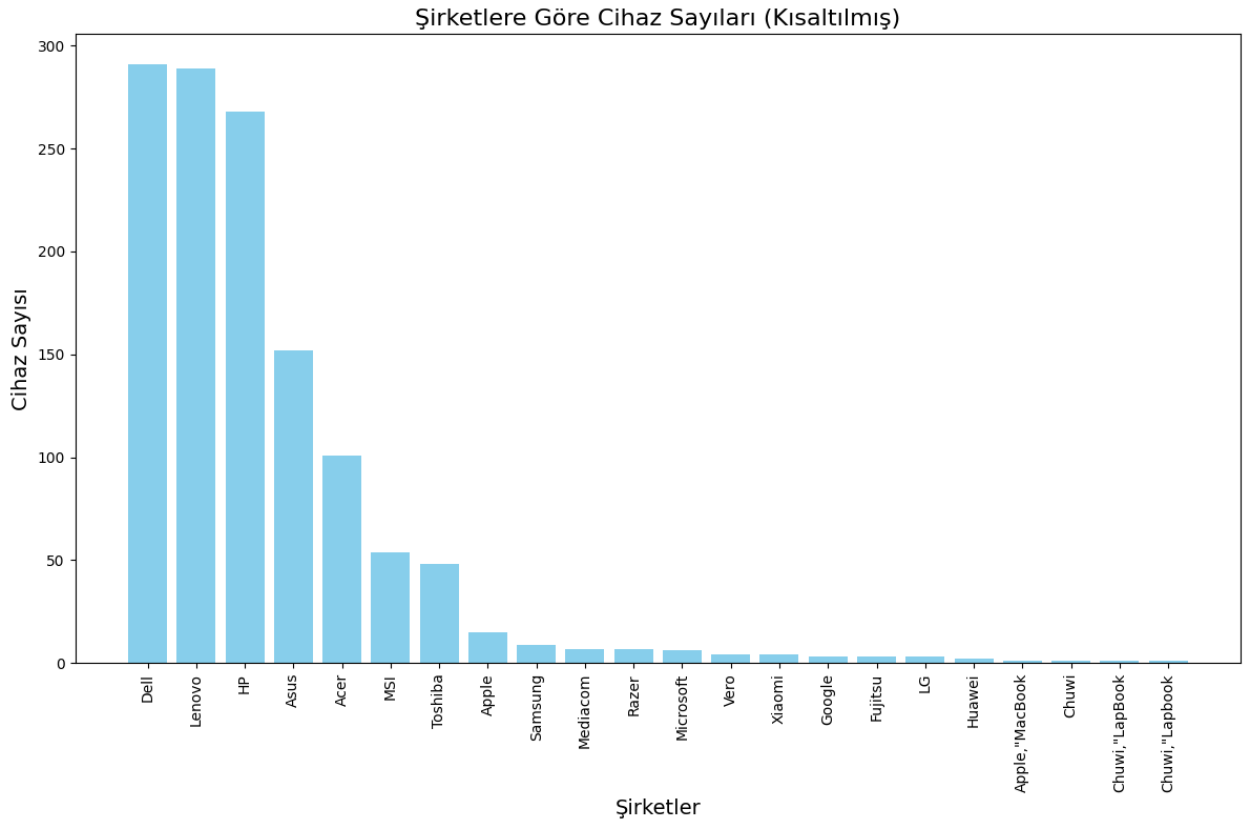

```
import matplotlib.pyplot as plt

# Daha detaylı histogram oluşturma (Fiyat(TürkLirasi) sütunu)
plt.figure(figsize=(12, 8))  # Grafiğin boyutunu büyüttük
plt.hist(yucel_df['Fiyat(TürkLirasi)'], bins=50, color='blue',
edgecolor='black')  # bins sayısını artırdık

# X eksenindeki sınırları belirleme (opsiyonel)
plt.xlim(0, 150000)  # X ekseninde 0 ile 150.000 TL arasında detaylı
görünüm sağlanıyor

# Grafiğe başlık ve eksen etiketleri ekleme
plt.title("Fiyat(TürkLirasi) Dağılımı - Daha Detaylı", fontsize=16)
plt.xlabel("Fiyat (TürkLirasi)", fontsize=14)
plt.ylabel("Frekans", fontsize=14)

# Histogram'ı gösterme
plt.grid(True)
plt.show()
```



54.Bar chart

```
import matplotlib.pyplot as plt

# Sirket sütunundaki her şirketin kaç adet cihazı olduğunu hesaplama
sirket_sayilari = yucel_df['Sirket'].value_counts()

# Şirket isimlerini kısaltma (örneğin, ilk 10 karakteri alalım)
sirket_sayilari.index = [isim[:14] for isim in sirket_sayilari.index]

# Bar chart oluşturma
plt.figure(figsize=(12, 8))
plt.bar(sirket_sayilari.index, sirket_sayilari.values,
color='skyblue')

# Grafiğe başlık ve eksen etiketleri ekleme
plt.title("Şirketlere Göre Cihaz Sayıları (Kısaltılmış)", fontsize=16)
plt.xlabel("Şirketler", fontsize=14)
plt.ylabel("Cihaz Sayısı", fontsize=14)

# X ekseni yazılarını döndürme
plt.xticks(rotation=90, fontsize=10)

# Bar chart'ı gösterme
```

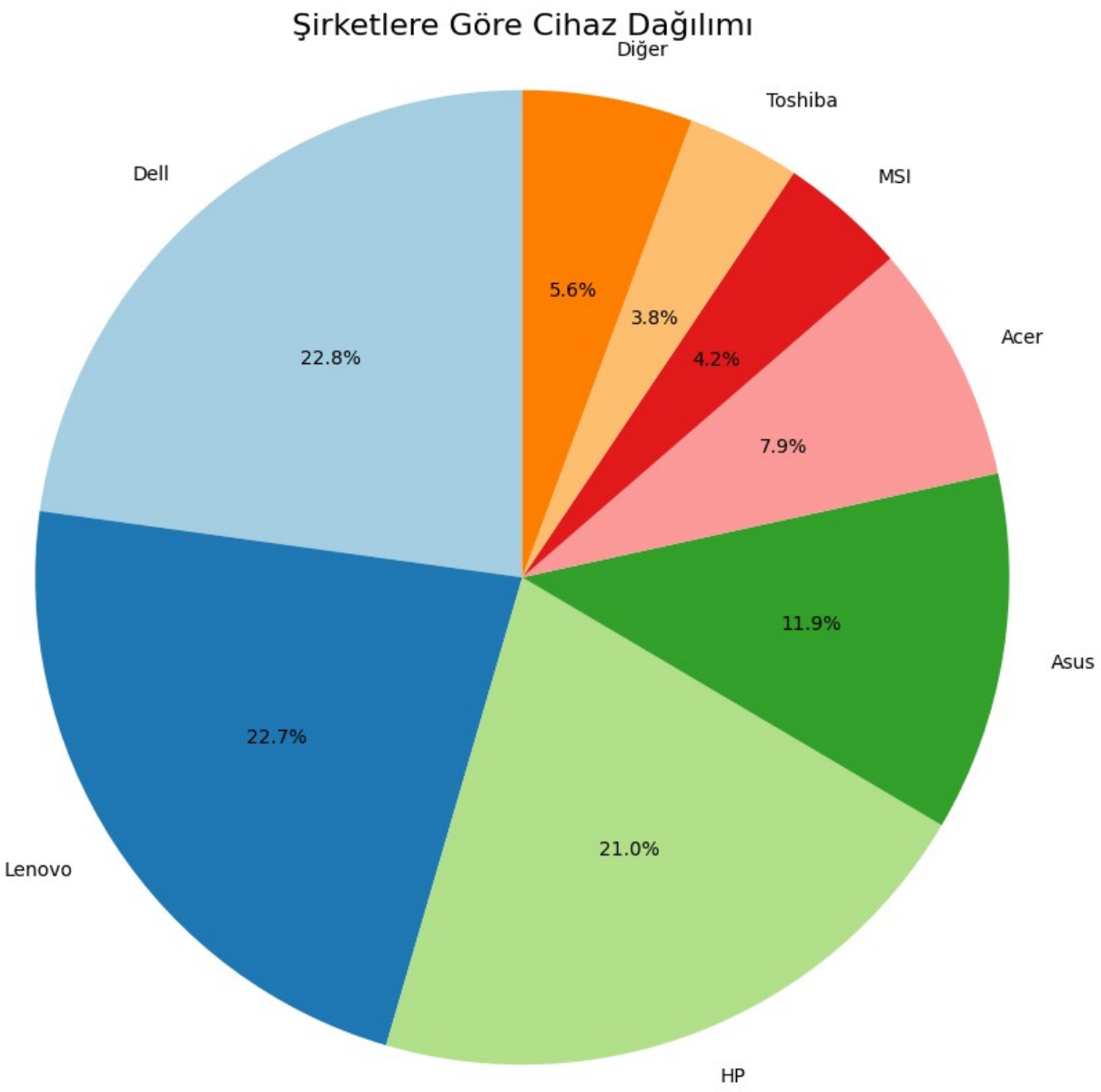
```
plt.tight_layout()  # Grafiği daha sıkı yerleştirerek yazıların
grafiğe sığmasını sağlarız
plt.show()
```



1. Pie chart

```
import matplotlib.pyplot as plt

# Sirket sütunundaki her şirketin kaç adet cihazı olduğunu hesaplama
sirket_sayilari = yucel_df['Sirket'].value_counts()

# %3'ten az olan şirketleri 'Diğer' olarak birleştirme
threshold = 0.03 * sirket_sayilari.sum()  # %3 sınırını belirledik
sirket_sayilari['Diğer'] = sirket_sayilari[sirket_sayilari <
threshold].sum()
sirket_sayilari = sirket_sayilari[sirket_sayilari >= threshold]

# Pie chart oluşturma
plt.figure(figsize=(10, 10))
plt.pie(sirket_sayilari.values, labels=sirket_sayilari.index,
autopct='%1.1f%%', startangle=90, colors=plt.cm.Paired.colors)

# Grafiğe başlık ekleme
plt.title("Şirketlere Göre Cihaz Dağılımı", fontsize=16)
```

```
# Pie chart'ı gösterme
plt.axis('equal')  # Grafiğin dairesel olmasını sağlama
plt.show()
```



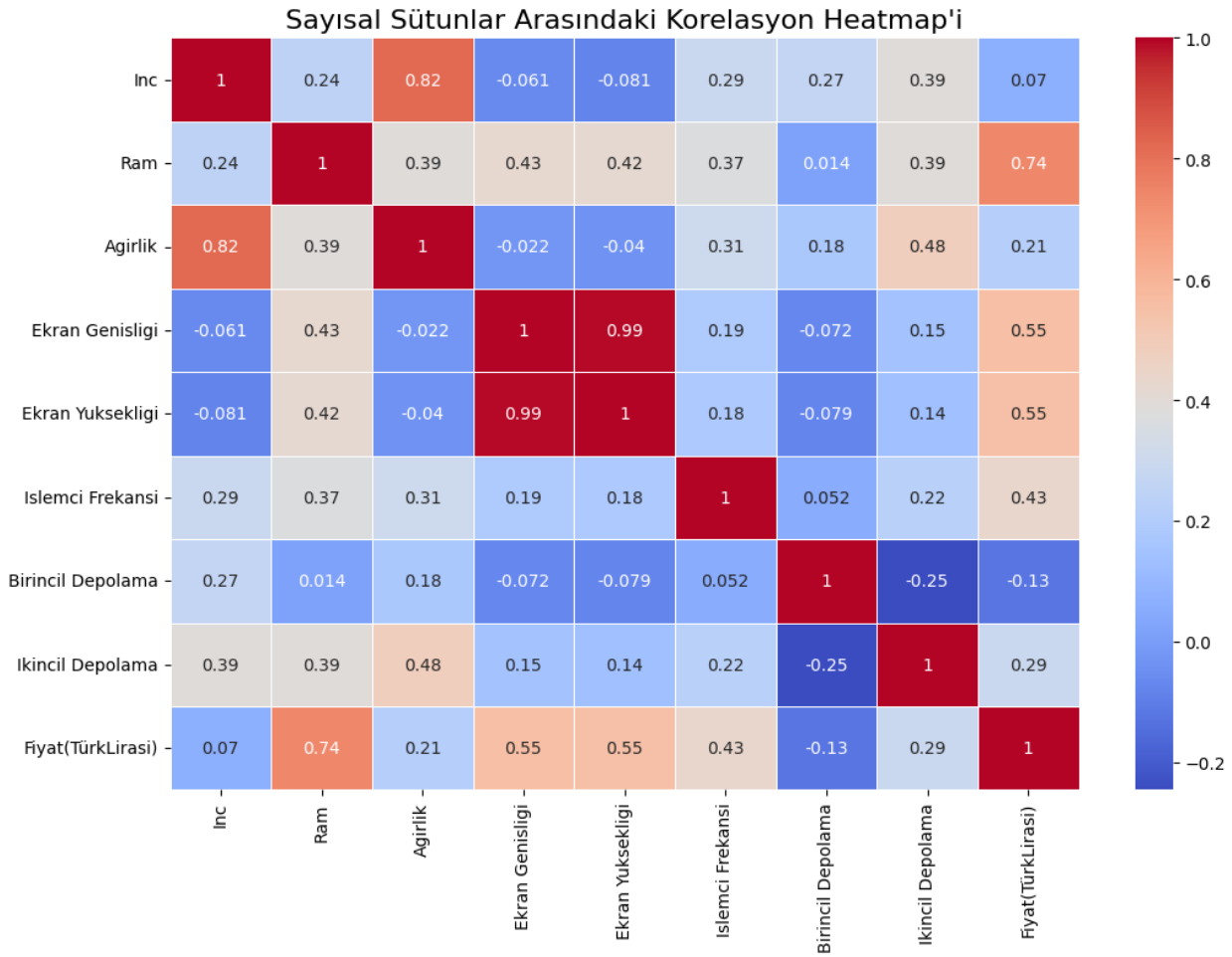
1. Heat Map grafiklerini çiziniz.

```
!pip install seaborn

Requirement already satisfied: seaborn in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (0.13.2)
Requirement already satisfied: numpy!=1.24.0,>=1.20 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from seaborn) (1.26.4)
```

```
Requirement already satisfied: pandas>=1.2 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
seaborn) (2.2.2)
Requirement already satisfied: matplotlib!=3.6.1,>=3.4 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from seaborn) (3.9.2)
Requirement already satisfied: contourpy>=1.0.1 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from matplotlib!=3.6.1,>=3.4->seaborn) (1.3.0)
Requirement already satisfied: cycler>=0.10 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
matplotlib!=3.6.1,>=3.4->seaborn) (0.12.1)
Requirement already satisfied: fonttools>=4.22.0 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from matplotlib!=3.6.1,>=3.4->seaborn) (4.54.1)
Requirement already satisfied: kiwisolver>=1.3.1 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from matplotlib!=3.6.1,>=3.4->seaborn) (1.4.7)
Requirement already satisfied: packaging>=20.0 in c:\users\
yavuz.yucel\appdata\roaming\python\python312\site-packages (from
matplotlib!=3.6.1,>=3.4->seaborn) (23.2)
Requirement already satisfied: pillow>=8 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
matplotlib!=3.6.1,>=3.4->seaborn) (11.0.0)
Requirement already satisfied: pyparsing>=2.3.1 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from matplotlib!=3.6.1,>=3.4->seaborn) (3.2.0)
Requirement already satisfied: python-dateutil>=2.7 in c:\users\
yavuz.yucel\appdata\roaming\python\python312\site-packages (from
matplotlib!=3.6.1,>=3.4->seaborn) (2.8.2)
Requirement already satisfied: pytz>=2020.1 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
pandas>=1.2->seaborn) (2024.2)
Requirement already satisfied: tzdata>=2022.7 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
pandas>=1.2->seaborn) (2024.1)
Requirement already satisfied: six>=1.5 in c:\users\yavuz.yucel\
appdata\roaming\python\python312\site-packages (from python-
dateutil>=2.7->matplotlib!=3.6.1,>=3.4->seaborn) (1.16.0)


[notice] A new release of pip is available: 24.0 -> 24.2
[notice] To update, run: python.exe -m pip install --upgrade pip
```

```
import seaborn as sns
import matplotlib.pyplot as plt

# Sadece sayısal sütunları seçiyoruz
numeric_df = yucel_df.select_dtypes(include='number')
```

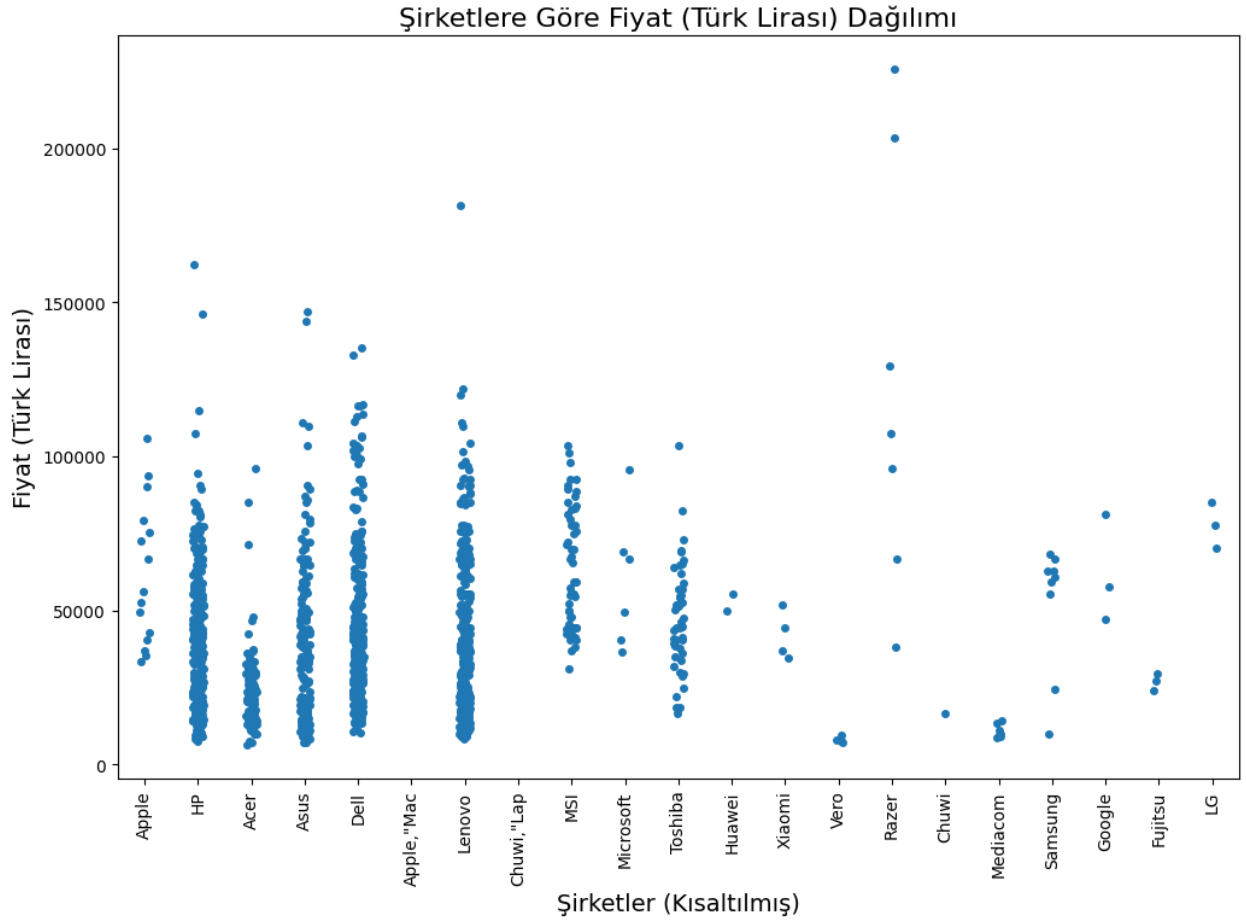
```
# Korelasyon matrisini hesaplama
corr_matrix = numeric_df.corr()

# Heatmap oluşturma
plt.figure(figsize=(12, 8))
sns.heatmap(corr_matrix, annot=True, cmap='coolwarm', linewidths=0.5)

# Grafiğe başlık ekleme
plt.title("Sayısal Sütunlar Arasındaki Korelasyon Heatmap'i",
fontsize=16)

# Heatmap'i gösterme
plt.show()
```



1. Stripplot

```
import seaborn as sns
import matplotlib.pyplot as plt

# Şirket isimlerini kısaltma (örneğin, ilk 10 karakteri alalım)
```

```
yucel_df['Sirket_Kisaltma'] = yucel_df['Sirket'].apply(lambda x:
x[:10])

# Stripplot oluşturma
plt.figure(figsize=(12, 8))
sns.stripplot(x='Sirket_Kisaltma', y='Fiyat(TürkLirasi)',
data=yucel_df, jitter=True)

# Grafiğe başlık ekleme
plt.title("Şirketlere Göre Fiyat (Türk Lirası) Dağılımı", fontsize=16)
plt.xlabel("Şirketler (Kısaltılmış)", fontsize=14)
plt.ylabel("Fiyat (Türk Lirası)", fontsize=14)

# X ekseni etiketlerini döndürme
plt.xticks(rotation=90)

# Grafiği gösterme
plt.show()
```

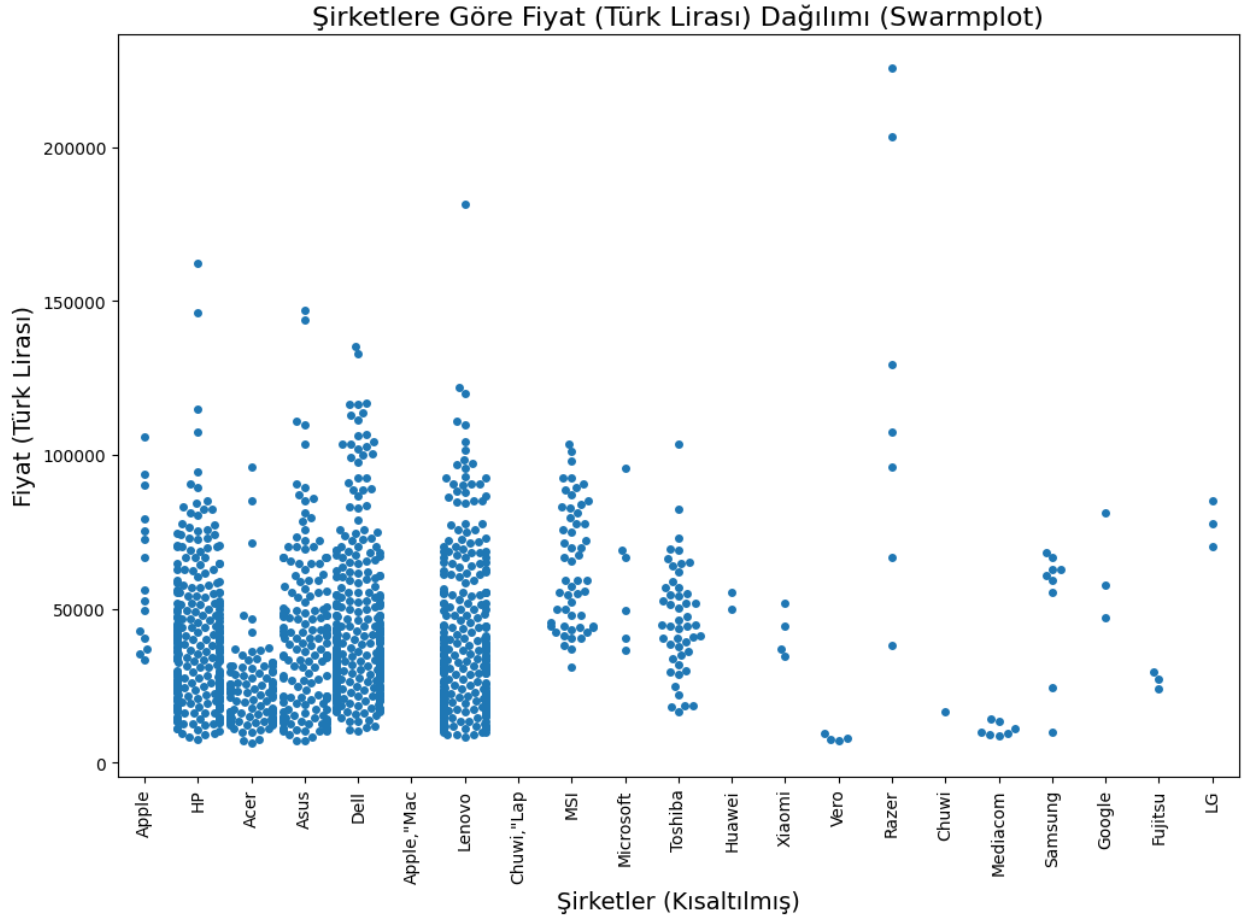


1. "Swarmplot"

```
# Şirket isimlerini kısaltma (örneğin, ilk 10 karakteri alalım)
yucel_df['Sirket_Kisaltma'] = yucel_df['Sirket'].apply(lambda x:
x[:10])

# Swarmplot oluşturma
plt.figure(figsize=(12, 8))
sns.swarmplot(x='Sirket_Kisaltma', y='Fiyat(TürkLirasi)',
data=yucel_df)

# Grafiğe başlık ekleme
plt.title("Şirketlere Göre Fiyat (Türk Lirası) Dağılımı (Swarmplot)",
fontsize=16)
plt.xlabel("Şirketler (Kısaltılmış)", fontsize=14)
plt.ylabel("Fiyat (Türk Lirası)", fontsize=14)

# X ekseni etiketlerini döndürme
plt.xticks(rotation=90)

# Grafiği gösterme
plt.show()
```

```
c:\Users\yavuz.yucel\AppData\Local\Programs\Python\Python312\Lib\site-
packages\seaborn\categorical.py:3399: UserWarning: 54.9% of the points
cannot be placed; you may want to decrease the size of the markers or
use stripplot.
  warnings.warn(msg, UserWarning)
c:\Users\yavuz.yucel\AppData\Local\Programs\Python\Python312\Lib\site-
packages\seaborn\categorical.py:3399: UserWarning: 45.5% of the points
cannot be placed; you may want to decrease the size of the markers or
use stripplot.
  warnings.warn(msg, UserWarning)
c:\Users\yavuz.yucel\AppData\Local\Programs\Python\Python312\Lib\site-
packages\seaborn\categorical.py:3399: UserWarning: 33.6% of the points
cannot be placed; you may want to decrease the size of the markers or
use stripplot.
  warnings.warn(msg, UserWarning)
c:\Users\yavuz.yucel\AppData\Local\Programs\Python\Python312\Lib\site-
packages\seaborn\categorical.py:3399: UserWarning: 53.3% of the points
cannot be placed; you may want to decrease the size of the markers or
use stripplot.
  warnings.warn(msg, UserWarning)
c:\Users\yavuz.yucel\AppData\Local\Programs\Python\Python312\Lib\site-
packages\seaborn\categorical.py:3399: UserWarning: 55.0% of the points
cannot be placed; you may want to decrease the size of the markers or
use stripplot.
  warnings.warn(msg, UserWarning)
c:\Users\yavuz.yucel\AppData\Local\Programs\Python\Python312\Lib\site-
packages\seaborn\categorical.py:3399: UserWarning: 7.4% of the points
cannot be placed; you may want to decrease the size of the markers or
use stripplot.
```

```
  warnings.warn(msg, UserWarning)
c:\Users\yavuz.yucel\AppData\Local\Programs\Python\Python312\Lib\site-packages\seaborn\categorical.py:3399: UserWarning: 53.7% of the points cannot be placed; you may want to decrease the size of the markers or use stripplot.
  warnings.warn(msg, UserWarning)
c:\Users\yavuz.yucel\AppData\Local\Programs\Python\Python312\Lib\site-packages\seaborn\categorical.py:3399: UserWarning: 43.6% of the points cannot be placed; you may want to decrease the size of the markers or use stripplot.
  warnings.warn(msg, UserWarning)
c:\Users\yavuz.yucel\AppData\Local\Programs\Python\Python312\Lib\site-packages\seaborn\categorical.py:3399: UserWarning: 31.6% of the points cannot be placed; you may want to decrease the size of the markers or use stripplot.
  warnings.warn(msg, UserWarning)
c:\Users\yavuz.yucel\AppData\Local\Programs\Python\Python312\Lib\site-packages\seaborn\categorical.py:3399: UserWarning: 52.2% of the points cannot be placed; you may want to decrease the size of the markers or use stripplot.
  warnings.warn(msg, UserWarning)
```



1. Keras kütüphanesini yükleyiniz.

```
!pip install tensorflow
import tensorflow as tf
from tensorflow import keras
```

```
Requirement already satisfied: tensorflow in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (2.17.0)
Requirement already satisfied: tensorflow-intel==2.17.0 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from tensorflow) (2.17.0)
Requirement already satisfied: absl-py>=1.0.0 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
tensorflow-intel==2.17.0->tensorflow) (2.1.0)
Requirement already satisfied: astunparse>=1.6.0 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from tensorflow-intel==2.17.0->tensorflow) (1.6.3)
Requirement already satisfied: flatbuffers>=24.3.25 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from tensorflow-intel==2.17.0->tensorflow) (24.3.25)
Requirement already satisfied: gast!=0.5.0,!=0.5.1,!=0.5.2,>=0.2.1 in
c:\users\yavuz.yucel\appdata\local\programs\python\python312\lib\site-
packages (from tensorflow-intel==2.17.0->tensorflow) (0.6.0)
Requirement already satisfied: google-pasta>=0.1.1 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from tensorflow-intel==2.17.0->tensorflow) (0.2.0)
Requirement already satisfied: h5py>=3.10.0 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
tensorflow-intel==2.17.0->tensorflow) (3.12.1)
Requirement already satisfied: libclang>=13.0.0 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from tensorflow-intel==2.17.0->tensorflow) (18.1.1)
Requirement already satisfied: ml-dtypes<0.5.0,>=0.3.1 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from tensorflow-intel==2.17.0->tensorflow) (0.4.1)
Requirement already satisfied: opt-einsum>=2.3.2 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from tensorflow-intel==2.17.0->tensorflow) (3.4.0)
Requirement already satisfied: packaging in c:\users\yavuz.yucel\
appdata\roaming\python\python312\site-packages (from tensorflow-
intel==2.17.0->tensorflow) (23.2)
Requirement already satisfied: protobuf!=4.21.0,!=4.21.1,!=4.21.2,!
=4.21.3,!=4.21.4,!=4.21.5,<5.0.0dev,>=3.20.3 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
tensorflow-intel==2.17.0->tensorflow) (4.25.5)
Requirement already satisfied: requests<3,>=2.21.0 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from tensorflow-intel==2.17.0->tensorflow) (2.32.3)
Requirement already satisfied: setuptools in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
```

```
tensorflow-intel==2.17.0->tensorflow) (69.1.1)
Requirement already satisfied: six>=1.12.0 in c:\users\yavuz.yucel\
appdata\roaming\python\python312\site-packages (from tensorflow-
intel==2.17.0->tensorflow) (1.16.0)
Requirement already satisfied: termcolor>=1.1.0 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from tensorflow-intel==2.17.0->tensorflow) (2.5.0)
Requirement already satisfied: typing-extensions>=3.6.6 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from tensorflow-intel==2.17.0->tensorflow) (4.12.0)
Requirement already satisfied: wrapt>=1.11.0 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
tensorflow-intel==2.17.0->tensorflow) (1.16.0)
Requirement already satisfied: grpcio<2.0,>=1.24.3 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from tensorflow-intel==2.17.0->tensorflow) (1.67.0)
Requirement already satisfied: tensorboard<2.18,>=2.17 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from tensorflow-intel==2.17.0->tensorflow) (2.17.1)
Requirement already satisfied: keras>=3.2.0 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
tensorflow-intel==2.17.0->tensorflow) (3.6.0)
Requirement already satisfied: numpy<2.0.0,>=1.26.0 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from tensorflow-intel==2.17.0->tensorflow) (1.26.4)
Requirement already satisfied: wheel<1.0,>=0.23.0 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from astunparse>=1.6.0->tensorflow-intel==2.17.0->tensorflow)
(0.44.0)
Requirement already satisfied: rich in c:\users\yavuz.yucel\appdata\
local\programs\python\python312\lib\site-packages (from keras>=3.2.0-
>tensorflow-intel==2.17.0->tensorflow) (13.9.3)
Requirement already satisfied: namex in c:\users\yavuz.yucel\appdata\
local\programs\python\python312\lib\site-packages (from keras>=3.2.0-
>tensorflow-intel==2.17.0->tensorflow) (0.0.8)
Requirement already satisfied: optree in c:\users\yavuz.yucel\appdata\
local\programs\python\python312\lib\site-packages (from keras>=3.2.0-
>tensorflow-intel==2.17.0->tensorflow) (0.13.0)
Requirement already satisfied: charset-normalizer<4,>=2 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from requests<3,>=2.21.0->tensorflow-intel==2.17.0->tensorflow)
(3.3.2)
Requirement already satisfied: idna<4,>=2.5 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
requests<3,>=2.21.0->tensorflow-intel==2.17.0->tensorflow) (3.7)
Requirement already satisfied: urllib3<3,>=1.21.1 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from requests<3,>=2.21.0->tensorflow-intel==2.17.0->tensorflow)
(2.2.1)
```

```
Requirement already satisfied: certifi>=2017.4.17 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from requests<3,>=2.21.0->tensorflow-intel==2.17.0->tensorflow)
(2024.2.2)
Requirement already satisfied: markdown>=2.6.8 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from tensorboard<2.18,>=2.17->tensorflow-intel==2.17.0->tensorflow)
(3.7)
Requirement already satisfied: tensorboard-data-server<0.8.0,>=0.7.0
in c:\users\yavuz.yucel\appdata\local\programs\python\python312\lib\
site-packages (from tensorboard<2.18,>=2.17->tensorflow-intel==2.17.0-
>tensorflow) (0.7.2)
Requirement already satisfied: werkzeug>=1.0.1 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from tensorboard<2.18,>=2.17->tensorflow-intel==2.17.0->tensorflow)
(3.0.4)
Requirement already satisfied: MarkupSafe>=2.1.1 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from werkzeug>=1.0.1->tensorboard<2.18,>=2.17->tensorflow-
intel==2.17.0->tensorflow) (2.1.5)
Requirement already satisfied: markdown-it-py>=2.2.0 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from rich->keras>=3.2.0->tensorflow-intel==2.17.0->tensorflow)
(3.0.0)
Requirement already satisfied: pygments<3.0.0,>=2.13.0 in c:\users\
yavuz.yucel\appdata\roaming\python\python312\site-packages (from rich-
>keras>=3.2.0->tensorflow-intel==2.17.0->tensorflow) (2.17.2)
Requirement already satisfied: mdurl~=0.1 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
markdown-it-py>=2.2.0->rich->keras>=3.2.0->tensorflow-intel==2.17.0-
>tensorflow) (0.1.2)


[notice] A new release of pip is available: 24.0 -> 24.2
[notice] To update, run: python.exe -m pip install --upgrade pip
```

1. Keras kütüphanesinin versiyonunu bulunuz.

```
# Keras'ın versiyonunu kontrol etme
print("Keras versiyonu:", keras.__version__)

Keras versiyonu: 3.6.0
```

1. CSV dataset'den sadece iki sütunu dataframe'e import ediniz.

```
import pandas as pd

# CSV dosyasının sütun isimlerini görüntüleme
```

```
df = pd.read_csv('YUCEL_DF.csv')
print(df.columns)
```

```
Index(['Sirket', ' Urun', ' Tur Adi', ' Inc', ' Ram', ' Isletim
Sistemi',
       ' Agirlik', 'Fiyat(Euro)', ' Ekran', ' Ekran Genisligi',
       ' Ekran Yukseklikgi', ' Dokunmatik Ekran', ' IPS Panel', '
Retina Ekran',
       ' Islemci Sirketi', ' Islemci Frekansi', ' Islemci Modeli',
       ' Birincil Depolama', ' Ikincil Depolama', ' Birincil Depolama
Turu',
       ' Ikincil Depolama Turu', ' Grafik Karti Sirketi',
       ' Grafik Karti Modeli'],
      dtype='object')
```

```
# Doğru sütun isimleriyle CSV'den iki sütunu alalım
yeni_df = pd.read_csv('YUCEL_DF.csv', usecols=['Fiyat(Euro)',
'Sirket'])
print(yeni_df.head())
```

```
  Sirket  Fiyat(Euro)
0  Apple      1339.69
1  Apple       898.94
2     HP       575.00
3  Apple      2537.45
4  Apple      1803.60
```

1. İki sayıyı toplamak çıkartmak, bölmek ve çarpmak için .PY uzantılı bir SCRIPT veya MODÜL oluşturunuz. Jupyter Notebook'tan 2 sayı parametre olarak gönderilip toplama ve çarpma işlemlerini yapınız.

```
# Jupyter Notebook'ta hesap_makinesi modülünü import etme
import hesap_makinesi

# İki sayıyı toplama ve çarpma işlemi
sayi1 = 10
sayi2 = 5

toplam = hesap_makinesi.toplama(sayi1, sayi2)
carpim = hesap_makinesi.carpma(sayi1, sayi2)

print(f"{sayi1} + {sayi2} = {toplam}")
print(f"{sayi1} * {sayi2} = {carpim}")
```

```
10 + 5 = 15
10 * 5 = 50
```

1. Python Sweetviz Kütüphanesini, Keşifsel Veri Analizi yapmak için kullanınız.

```
!pip install sweetviz
```

```
Requirement already satisfied: sweetviz in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (2.3.1)
Requirement already satisfied: pandas!=1.0.0,!=1.0.1,!=1.0.2,>=0.25.3
in c:\users\yavuz.yucel\appdata\local\programs\python\python312\lib\
site-packages (from sweetviz) (2.2.2)
Requirement already satisfied: numpy>=1.16.0 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
sweetviz) (1.26.4)
Requirement already satisfied: matplotlib>=3.1.3 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from sweetviz) (3.9.2)
Requirement already satisfied: tqdm>=4.43.0 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
sweetviz) (4.66.4)
Requirement already satisfied: scipy>=1.3.2 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
sweetviz) (1.13.1)
Requirement already satisfied: jinja2>=2.11.1 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
sweetviz) (3.1.4)
Requirement already satisfied: importlib-resources>=1.2.0 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from sweetviz) (6.4.5)
Requirement already satisfied: MarkupSafe>=2.0 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from jinja2>=2.11.1->sweetviz) (2.1.5)
Requirement already satisfied: contourpy>=1.0.1 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from matplotlib>=3.1.3->sweetviz) (1.3.0)
Requirement already satisfied: cycler>=0.10 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
matplotlib>=3.1.3->sweetviz) (0.12.1)
Requirement already satisfied: fonttools>=4.22.0 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from matplotlib>=3.1.3->sweetviz) (4.54.1)
Requirement already satisfied: kiwisolver>=1.3.1 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from matplotlib>=3.1.3->sweetviz) (1.4.7)
Requirement already satisfied: packaging>=20.0 in c:\users\
yavuz.yucel\appdata\roaming\python\python312\site-packages (from
matplotlib>=3.1.3->sweetviz) (23.2)
Requirement already satisfied: pillow>=8 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
matplotlib>=3.1.3->sweetviz) (11.0.0)
Requirement already satisfied: pyparsing>=2.3.1 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from matplotlib>=3.1.3->sweetviz) (3.2.0)
Requirement already satisfied: python-dateutil>=2.7 in c:\users\
yavuz.yucel\appdata\roaming\python\python312\site-packages (from
matplotlib>=3.1.3->sweetviz) (2.8.2)
```

```
Requirement already satisfied: pytz>=2020.1 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
pandas!=1.0.0,!=1.0.1,!=1.0.2,>=0.25.3->sweetviz) (2024.2)
Requirement already satisfied: tzdata>=2022.7 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
pandas!=1.0.0,!=1.0.1,!=1.0.2,>=0.25.3->sweetviz) (2024.1)
Requirement already satisfied: colorama in c:\users\yavuz.yucel\
appdata\roaming\python\python312\site-packages (from tqdm>=4.43.0-
>sweetviz) (0.4.6)
Requirement already satisfied: six>=1.5 in c:\users\yavuz.yucel\
appdata\roaming\python\python312\site-packages (from python-
dateutil>=2.7->matplotlib>=3.1.3->sweetviz) (1.16.0)


[notice] A new release of pip is available: 24.0 -> 24.2
[notice] To update, run: python.exe -m pip install --upgrade pip
```

```
import pandas as pd
import sweetviz as sv

# CSV dosyasını pandas ile okuma
df = pd.read_csv('YUCEL_DF.csv')

# Sweetviz analiz raporu oluşturma
rapor = sv.analyze(df)

# Sweetviz raporunu HTML formatında kaydetme
rapor.show_html('sweetviz_raporu.html')

# Çıktı olarak HTML dosyasını verir
print("Sweetviz raporu 'sweetviz_raporu.html' olarak kaydedildi.")
```

```
c:\Users\yavuz.yucel\AppData\Local\Programs\Python\Python312\Lib\site-
packages\tqdm\auto.py:21: TqdmWarning: IProgress not found. Please
update jupyter and ipywidgets. See
https://ipywidgets.readthedocs.io/en/stable/user_install.html
  from .autonotebook import tqdm as notebook_tqdm
Done! Use 'show' commands to display/save.   |████████| [100%]
00:00 -> (00:00 left)

Report sweetviz_raporu.html was generated! NOTEBOOK/COLAB USERS: the
web browser MAY not pop up, regardless, the report IS saved in your
notebook/colab files.
Sweetviz raporu 'sweetviz_raporu.html' olarak kaydedildi.
```

1. ydata_profiling kütüphanesi kullanılarak dataFrame'deki veriler hakkında "html" rapor hazırlayınız.

```
!pip install --user ydata-profiling
```

```
Requirement already satisfied: ydata-profiling in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(4.11.0)
Requirement already satisfied: scipy<1.14,>=1.4.1 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from ydata-profiling) (1.13.1)
Requirement already satisfied: pandas!=1.4.0,<3,>1.1 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from ydata-profiling) (2.2.2)
Requirement already satisfied: matplotlib<3.10,>=3.5 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from ydata-profiling) (3.9.2)
Requirement already satisfied: pydantic>=2 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from ydata-
profiling) (2.7.2)
Requirement already satisfied: PyYAML<6.1,>=5.0.0 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from ydata-profiling) (6.0.2)
Requirement already satisfied: jinja2<3.2,>=2.11.1 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from ydata-profiling) (3.1.4)
Requirement already satisfied: visions<0.7.7,>=0.7.5 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from visions[type_image_path]<0.7.7,>=0.7.5->ydata-profiling) (0.7.6)
Requirement already satisfied: numpy<2.2,>=1.16.0 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from ydata-profiling) (1.26.4)
Requirement already satisfied: htmlmin==0.1.12 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from ydata-profiling) (0.1.12)
Requirement already satisfied: phik<0.13,>=0.11.1 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from ydata-profiling) (0.12.4)
Requirement already satisfied: requests<3,>=2.24.0 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from ydata-profiling) (2.32.3)
Requirement already satisfied: tqdm<5,>=4.48.2 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from ydata-profiling) (4.66.4)
Requirement already satisfied: seaborn<0.14,>=0.10.1 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from ydata-profiling) (0.13.2)
Requirement already satisfied: multimethod<2,>=1.4 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from ydata-profiling) (1.12)
Requirement already satisfied: statsmodels<1,>=0.13.2 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from ydata-profiling) (0.14.4)
Requirement already satisfied: typeguard<5,>=3 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
```

```
(from ydata-profiling) (4.3.0)
Requirement already satisfied: imagehash==4.3.1 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from ydata-profiling) (4.3.1)
Requirement already satisfied: wordcloud>=1.9.3 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from ydata-profiling) (1.9.3)
Requirement already satisfied: dacite>=1.8 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from ydata-
profiling) (1.8.1)
Requirement already satisfied: numba<1,>=0.56.0 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from ydata-profiling) (0.60.0)
Requirement already satisfied: PyWavelets in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
imagehash==4.3.1->ydata-profiling) (1.7.0)
Requirement already satisfied: pillow in c:\users\yavuz.yucel\appdata\
local\programs\python\python312\lib\site-packages (from
imagehash==4.3.1->ydata-profiling) (11.0.0)
Requirement already satisfied: MarkupSafe>=2.0 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from jinja2<3.2,>=2.11.1->ydata-profiling) (2.1.5)
Requirement already satisfied: contourpy>=1.0.1 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from matplotlib<3.10,>=3.5->ydata-profiling) (1.3.0)
Requirement already satisfied: cycler>=0.10 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
matplotlib<3.10,>=3.5->ydata-profiling) (0.12.1)
Requirement already satisfied: fonttools>=4.22.0 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from matplotlib<3.10,>=3.5->ydata-profiling) (4.54.1)
Requirement already satisfied: kiwisolver>=1.3.1 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from matplotlib<3.10,>=3.5->ydata-profiling) (1.4.7)
Requirement already satisfied: packaging>=20.0 in c:\users\
yavuz.yucel\appdata\roaming\python\python312\site-packages (from
matplotlib<3.10,>=3.5->ydata-profiling) (23.2)
Requirement already satisfied: pyparsing>=2.3.1 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from matplotlib<3.10,>=3.5->ydata-profiling) (3.2.0)
Requirement already satisfied: python-dateutil>=2.7 in c:\users\
yavuz.yucel\appdata\roaming\python\python312\site-packages (from
matplotlib<3.10,>=3.5->ydata-profiling) (2.8.2)
Requirement already satisfied: llvmlite<0.44,>=0.43.0dev0 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from numba<1,>=0.56.0->ydata-profiling) (0.43.0)
Requirement already satisfied: pytz>=2020.1 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
pandas!=1.4.0,<3,>1.1->ydata-profiling) (2024.2)
Requirement already satisfied: tzdata>=2022.7 in c:\users\yavuz.yucel\
```

```
appdata\local\programs\python\python312\lib\site-packages (from
pandas!=1.4.0,<3,>1.1->ydata-profiling) (2024.1)
Requirement already satisfied: joblib>=0.14.1 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
phik<0.13,>=0.11.1->ydata-profiling) (1.4.2)
Requirement already satisfied: annotated-types>=0.4.0 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from pydantic>=2->ydata-profiling) (0.7.0)
Requirement already satisfied: pydantic-core==2.18.3 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from pydantic>=2->ydata-profiling) (2.18.3)
Requirement already satisfied: typing-extensions>=4.6.1 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from pydantic>=2->ydata-profiling) (4.12.0)
Requirement already satisfied: charset-normalizer<4,>=2 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from requests<3,>=2.24.0->ydata-profiling) (3.3.2)
Requirement already satisfied: idna<4,>=2.5 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
requests<3,>=2.24.0->ydata-profiling) (3.7)
Requirement already satisfied: urllib3<3,>=1.21.1 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from requests<3,>=2.24.0->ydata-profiling) (2.2.1)
Requirement already satisfied: certifi>=2017.4.17 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from requests<3,>=2.24.0->ydata-profiling) (2024.2.2)
Requirement already satisfied: patsy>=0.5.6 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
statsmodels<1,>=0.13.2->ydata-profiling) (0.5.6)
Requirement already satisfied: colorama in c:\users\yavuz.yucel\
appdata\roaming\python\python312\site-packages (from tqdm<5,>=4.48.2-
>ydata-profiling) (0.4.6)
Requirement already satisfied: attrs>=19.3.0 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
visions<0.7.7,>=0.7.5->visions[type_image_path]<0.7.7,>=0.7.5->ydata-
profiling) (23.2.0)
Requirement already satisfied: networkx>=2.4 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
visions<0.7.7,>=0.7.5->visions[type_image_path]<0.7.7,>=0.7.5->ydata-
profiling) (3.4.2)
Requirement already satisfied: six in c:\users\yavuz.yucel\appdata\
roaming\python\python312\site-packages (from patsy>=0.5.6-
>statsmodels<1,>=0.13.2->ydata-profiling) (1.16.0)


[notice] A new release of pip is available: 24.0 -> 24.2
[notice] To update, run: python.exe -m pip install --upgrade pip

import pandas as pd
from ydata_profiling import ProfileReport
```

```
# CSV dosyasını pandas ile okuma
df = pd.read_csv('YUCEL_DF.csv')

# Profil raporu oluşturma
profil_raporu = ProfileReport(df, title="Veri Seti Profil Raporu",
explorative=True)

# HTML raporunu kaydetme
profil_raporu.to_file("profil_raporu.html")

print("Profil raporu 'profil_raporu.html' olarak kaydedildi.")
```

```
Summarize dataset: 100%|██████████| 114/114 [00:09<00:00, 12.16it/s,
Completed]
Generate report structure: 100%|██████████| 1/1 [00:05<00:00,
5.29s/it]
Render HTML: 100%|██████████| 1/1 [00:01<00:00,  1.85s/it]
Export report to file: 100%|██████████| 1/1 [00:00<00:00, 49.77it/s]

Profil raporu 'profil_raporu.html' olarak kaydedildi.
```

1. yfinance kütüphanesini kullanınız.

```
pip install yfinance
```

```
Requirement already satisfied: yfinance in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (0.2.46)
Requirement already satisfied: pandas>=1.3.0 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
yfinance) (2.2.2)
Requirement already satisfied: numpy>=1.16.5 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
yfinance) (1.26.4)
Requirement already satisfied: requests>=2.31 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
yfinance) (2.32.3)
Requirement already satisfied: multitasking>=0.0.7 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from yfinance) (0.0.11)
Requirement already satisfied: lxml>=4.9.1 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
yfinance) (5.2.2)
Requirement already satisfied: platformdirs>=2.0.0 in c:\users\
yavuz.yucel\appdata\roaming\python\python312\site-packages (from
yfinance) (4.2.0)
Requirement already satisfied: pytz>=2022.5 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
yfinance) (2024.2)
```

```
Requirement already satisfied: frozendict>=2.3.4 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from yfinance) (2.4.6)
Requirement already satisfied: peewee>=3.16.2 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
yfinance) (3.17.7)
Requirement already satisfied: beautifulsoup4>=4.11.1 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from yfinance) (4.12.3)
Requirement already satisfied: html5lib>=1.1 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
yfinance) (1.1)
Requirement already satisfied: soupsieve>1.2 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
beautifulsoup4>=4.11.1->yfinance) (2.6)
Requirement already satisfied: six>=1.9 in c:\users\yavuz.yucel\
appdata\roaming\python\python312\site-packages (from html5lib>=1.1-
>yfinance) (1.16.0)
Requirement already satisfied: webencodings in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
html5lib>=1.1->yfinance) (0.5.1)
Requirement already satisfied: python-dateutil>=2.8.2 in c:\users\
yavuz.yucel\appdata\roaming\python\python312\site-packages (from
pandas>=1.3.0->yfinance) (2.8.2)
Requirement already satisfied: tzdata>=2022.7 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
pandas>=1.3.0->yfinance) (2024.1)
Requirement already satisfied: charset-normalizer<4,>=2 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from requests>=2.31->yfinance) (3.3.2)
Requirement already satisfied: idna<4,>=2.5 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
requests>=2.31->yfinance) (3.7)
Requirement already satisfied: urllib3<3,>=1.21.1 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from requests>=2.31->yfinance) (2.2.1)
Requirement already satisfied: certifi>=2017.4.17 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from requests>=2.31->yfinance) (2024.2.2)
Note: you may need to restart the kernel to use updated packages.


[notice] A new release of pip is available: 24.0 -> 24.2
[notice] To update, run: python.exe -m pip install --upgrade pip
```

```
import yfinance as yf

# Apple hisse senedi için bir "Ticker" nesnesi oluşturuyoruz
aapl = yf.Ticker("AAPL")
```

```python
# Son 5 günlük fiyat verilerini alıyoruz
data = aapl.history(period="5d")

# Veriyi ekrana yazdırıyoruz
print(data)
```

```
                                  Open        High         Low
Close  \
Date

2024-10-17 00:00:00-04:00  233.429993  233.850006  230.520004
232.149994
2024-10-18 00:00:00-04:00  236.179993  236.179993  234.009995
235.000000
2024-10-21 00:00:00-04:00  234.449997  236.850006  234.449997
236.479996
2024-10-22 00:00:00-04:00  233.889999  236.220001  232.600006
235.860001
2024-10-23 00:00:00-04:00  234.080002  235.139999  227.759995
230.759995

                             Volume  Dividends  Stock Splits
Date
2024-10-17 00:00:00-04:00  32993800        0.0           0.0
2024-10-18 00:00:00-04:00  46431500        0.0           0.0
2024-10-21 00:00:00-04:00  36254500        0.0           0.0
2024-10-22 00:00:00-04:00  38846600        0.0           0.0
2024-10-23 00:00:00-04:00  52037200        0.0           0.0
```

```python
# Hisse senedinin genel bilgilerini almak
info = aapl.info
print("Apple Hisse Senedi Bilgileri:", info)

# Temettü bilgilerini almak
dividends = aapl.dividends
print("Apple Temettü Bilgileri:", dividends)
```

```
Apple Hisse Senedi Bilgileri: {'address1': 'One Apple Park Way',
'city': 'Cupertino', 'state': 'CA', 'zip': '95014', 'country': 'United
States', 'phone': '408 996 1010', 'website': 'https://www.apple.com',
'industry': 'Consumer Electronics', 'industryKey': 'consumer-
electronics', 'industryDisp': 'Consumer Electronics', 'sector':
'Technology', 'sectorKey': 'technology', 'sectorDisp': 'Technology',
'longBusinessSummary': 'Apple Inc. designs, manufactures, and markets
smartphones, personal computers, tablets, wearables, and accessories
worldwide. The company offers iPhone, a line of smartphones; Mac, a
line of personal computers; iPad, a line of multi-purpose tablets; and
wearables, home, and accessories comprising AirPods, Apple TV, Apple
Watch, Beats products, and HomePod. It also provides AppleCare support
and cloud services; and operates various platforms, including the App
```

Store that allow customers to discover and download applications and digital content, such as books, music, video, games, and podcasts. In addition, the company offers various services, such as Apple Arcade, a game subscription service; Apple Fitness+, a personalized fitness service; Apple Music, which offers users a curated listening experience with on-demand radio stations; Apple News+, a subscription news and magazine service; Apple TV+, which offers exclusive original content; Apple Card, a co-branded credit card; and Apple Pay, a cashless payment service, as well as licenses its intellectual property. The company serves consumers, and small and mid-sized businesses; and the education, enterprise, and government markets. It distributes third-party applications for its products through the App Store. The company also sells its products through its retail and online stores, and direct sales force; and third-party cellular network carriers, wholesalers, retailers, and resellers. Apple Inc. was founded in 1976 and is headquartered in Cupertino, California.', 'fullTimeEmployees': 161000, 'companyOfficers': [{'maxAge': 1, 'name': 'Mr. Timothy D. Cook', 'age': 62, 'title': 'CEO & Director', 'yearBorn': 1961, 'fiscalYear': 2023, 'totalPay': 16239562, 'exercisedValue': 0, 'unexercisedValue': 0}, {'maxAge': 1, 'name': 'Mr. Luca Maestri', 'age': 60, 'title': 'CFO & Senior VP', 'yearBorn': 1963, 'fiscalYear': 2023, 'totalPay': 4612242, 'exercisedValue': 0, 'unexercisedValue': 0}, {'maxAge': 1, 'name': 'Mr. Jeffrey E. Williams', 'age': 59, 'title': 'Chief Operating Officer', 'yearBorn': 1964, 'fiscalYear': 2023, 'totalPay': 4637585, 'exercisedValue': 0, 'unexercisedValue': 0}, {'maxAge': 1, 'name': 'Ms. Katherine L. Adams', 'age': 59, 'title': 'Senior VP, General Counsel & Secretary', 'yearBorn': 1964, 'fiscalYear': 2023, 'totalPay': 4618064, 'exercisedValue': 0, 'unexercisedValue': 0}, {'maxAge': 1, 'name': "Ms. Deirdre O'Brien", 'age': 56, 'title': 'Senior Vice President of Retail', 'yearBorn': 1967, 'fiscalYear': 2023, 'totalPay': 4613369, 'exercisedValue': 0, 'unexercisedValue': 0}, {'maxAge': 1, 'name': 'Mr. Chris Kondo', 'title': 'Senior Director of Corporate Accounting', 'fiscalYear': 2023, 'exercisedValue': 0, 'unexercisedValue': 0}, {'maxAge': 1, 'name': 'Mr. James Wilson', 'title': 'Chief Technology Officer', 'fiscalYear': 2023, 'exercisedValue': 0, 'unexercisedValue': 0}, {'maxAge': 1, 'name': 'Suhasini Chandramouli', 'title': 'Director of Investor Relations', 'fiscalYear': 2023, 'exercisedValue': 0, 'unexercisedValue': 0}, {'maxAge': 1, 'name': 'Mr. Greg Joswiak', 'title': 'Senior Vice President of Worldwide Marketing', 'fiscalYear': 2023, 'exercisedValue': 0, 'unexercisedValue': 0}, {'maxAge': 1, 'name': 'Mr. Adrian Perica', 'age': 49, 'title': 'Head of Corporate Development', 'yearBorn': 1974, 'fiscalYear': 2023, 'exercisedValue': 0, 'unexercisedValue': 0}], 'auditRisk': 6, 'boardRisk': 1, 'compensationRisk': 2, 'shareHolderRightsRisk': 1, 'overallRisk': 1, 'governanceEpochDate': 1727740800, 'compensationAsOfEpochDate': 1703980800, 'irWebsite': 'http://investor.apple.com/', 'maxAge': 86400, 'priceHint': 2, 'previousClose': 235.86, 'open': 234.32,

'dayLow': 227.76, 'dayHigh': 235.144, 'regularMarketPreviousClose': 235.86, 'regularMarketOpen': 234.32, 'regularMarketDayLow': 227.76, 'regularMarketDayHigh': 235.144, 'dividendRate': 1.0, 'dividendYield': 0.0043, 'exDividendDate': 1723420800, 'payoutRatio': 0.1476, 'fiveYearAvgDividendYield': 0.64, 'beta': 1.239, 'trailingPE': 35.06991, 'forwardPE': 30.891567, 'volume': 50657958, 'regularMarketVolume': 50657958, 'averageVolume': 50834700, 'averageVolume10days': 40522200, 'averageDailyVolume10Day': 40522200, 'marketCap': 3508498071552, 'fiftyTwoWeekLow': 164.08, 'fiftyTwoWeekHigh': 237.49, 'priceToSalesTrailing12Months': 9.098731, 'fiftyDayAverage': 226.4908, 'twoHundredDayAverage': 200.6015, 'trailingAnnualDividendRate': 0.97, 'trailingAnnualDividendYield': 0.004112609, 'currency': 'USD', 'enterpriseValue': 3548009725952, 'profitMargins': 0.26441, 'floatShares': 15179506298, 'sharesOutstanding': 15204100096, 'sharesShort': 141741381, 'sharesShortPriorMonth': 135042504, 'sharesShortPreviousMonthDate': 1724976000, 'dateShortInterest': 1727654400, 'sharesPercentSharesOut': 0.0093, 'heldPercentInsiders': 0.02704, 'heldPercentInstitutions': 0.60877997, 'shortRatio': 2.32, 'shortPercentOfFloat': 0.0093, 'impliedSharesOutstanding': 15228399616, 'bookValue': 4.382, 'priceToBook': 52.660885, 'lastFiscalYearEnd': 1696032000, 'nextFiscalYearEnd': 1727654400, 'mostRecentQuarter': 1719619200, 'earningsQuarterlyGrowth': 0.079, 'netIncomeToCommon': 101956001792, 'trailingEps': 6.58, 'forwardEps': 7.47, 'pegRatio': 3.12, 'lastSplitFactor': '4:1', 'lastSplitDate': 1598832000, 'enterpriseToRevenue': 9.201, 'enterpriseToEbitda': 26.924, '52WeekChange': 0.38270712, 'SandP52WeekChange': 0.40128052, 'lastDividendValue': 0.25, 'lastDividendDate': 1723420800, 'exchange': 'NMS', 'quoteType': 'EQUITY', 'symbol': 'AAPL', 'underlyingSymbol': 'AAPL', 'shortName': 'Apple Inc.', 'longName': 'Apple Inc.', 'firstTradeDateEpochUtc': 345479400, 'timeZoneFullName': 'America/New_York', 'timeZoneShortName': 'EDT', 'uuid': '8b10e4ae-9eeb-3684-921a-9ab27e4d87aa', 'messageBoardId': 'finmb_24937', 'gmtOffSetMilliseconds': -14400000, 'currentPrice': 230.76, 'targetHighPrice': 300.0, 'targetLowPrice': 183.86, 'targetMeanPrice': 240.78, 'targetMedianPrice': 243.0, 'recommendationMean': 2.1, 'recommendationKey': 'buy', 'numberOfAnalystOpinions': 40, 'totalCash': 61801000960, 'totalCashPerShare': 4.065, 'ebitda': 131781001216, 'totalDebt': 101304000512, 'quickRatio': 0.798, 'currentRatio': 0.953, 'totalRevenue': 385603010560, 'debtToEquity': 151.862, 'revenuePerShare': 24.957, 'returnOnAssets': 0.22612, 'returnOnEquity': 1.60583, 'freeCashflow': 86158123008, 'operatingCashflow': 113040998400, 'earningsGrowth': 0.111, 'revenueGrowth': 0.049, 'grossMargins': 0.45962003, 'ebitdaMargins': 0.34175, 'operatingMargins': 0.29556, 'financialCurrency': 'USD', 'trailingPegRatio': 2.3356}
Apple Temettü Bilgileri: Series([], Name: Dividends, dtype: float64)

1. DASK büyük veri kütüphanesini kullanınız.

```
pip install dask
```

```
Requirement already satisfied: dask in c:\users\yavuz.yucel\appdata\
local\programs\python\python312\lib\site-packages (2024.10.0)Note: you
may need to restart the kernel to use updated packages.

Requirement already satisfied: click>=8.1 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from dask)
(8.1.7)
Requirement already satisfied: cloudpickle>=3.0.0 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from dask) (3.1.0)
Requirement already satisfied: fsspec>=2021.09.0 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from dask) (2024.10.0)
Requirement already satisfied: packaging>=20.0 in c:\users\
yavuz.yucel\appdata\roaming\python\python312\site-packages (from dask)
(23.2)
Requirement already satisfied: partd>=1.4.0 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from dask)
(1.4.2)
Requirement already satisfied: pyyaml>=5.3.1 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from dask)
(6.0.2)
Requirement already satisfied: toolz>=0.10.0 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from dask)
(1.0.0)
Requirement already satisfied: colorama in c:\users\yavuz.yucel\
appdata\roaming\python\python312\site-packages (from click>=8.1->dask)
(0.4.6)
Requirement already satisfied: locket in c:\users\yavuz.yucel\appdata\
local\programs\python\python312\lib\site-packages (from partd>=1.4.0-
>dask) (1.0.0)


[notice] A new release of pip is available: 24.0 -> 24.2
[notice] To update, run: python.exe -m pip install --upgrade pip
```

```
import dask.dataframe as dd

# CSV dosyasını Dask ile okuma
df = dd.read_csv('YUCEL_DF.csv', assume_missing=True)

# İlk birkaç satırı ekrana yazdırma (head() fonksiyonu ile lazy olarak
çalışır)
print(df.head())

# DataFrame'in toplam satır sayısını öğrenme
satir_sayisi = df.shape[0].compute()
sutun_sayisi = df.shape[1]
```

```
print(f"Satır Sayısı: {satir_sayisi}")
print(f"Sütun Sayısı: {sutun_sayisi}")
```

```
  Sirket         Urun    Tur Adi   Inc   Ram  Isletim Sistemi
Agirlik  \
0  Apple  MacBook Pro  Ultrabook  13.3   8.0            macOS
1.37
1  Apple  Macbook Air  Ultrabook  13.3   8.0            macOS
1.34
2     HP       250 G6   Notebook  15.6   8.0            No OS
1.86
3  Apple  MacBook Pro  Ultrabook  15.4  16.0            macOS
1.83
4  Apple  MacBook Pro  Ultrabook  13.3   8.0            macOS
1.37

   Fiyat(Euro)     Ekran   Ekran Genisligi  ...   Retina Ekran  \
0      1339.69  Standard            2560.0  ...             Yes
1       898.94  Standard            1440.0  ...              No
2       575.00   Full HD            1920.0  ...              No
3      2537.45  Standard            2880.0  ...             Yes
4      1803.60  Standard            2560.0  ...             Yes

   Islemci Sirketi  Islemci Frekansi  Islemci Modeli  Birincil
Depolama  \
0            Intel               2.3         Core i5
128.0
1            Intel               1.8         Core i5
128.0
2            Intel               2.5   Core i5 7200U
256.0
3            Intel               2.7         Core i7
512.0
4            Intel               3.1         Core i5
256.0

    Ikincil Depolama  Birincil Depolama Turu   Ikincil Depolama
Turu  \
0                0.0                     SSD                      No

1                0.0           Flash Storage                      No

2                0.0                     SSD                      No

3                0.0                     SSD                      No

4                0.0                     SSD                      No


    Grafik Karti Sirketi     Grafik Karti Modeli
```

```
0                  Intel  Iris Plus Graphics 640
1                  Intel        HD Graphics 6000
2                  Intel         HD Graphics 620
3                    AMD          Radeon Pro 455
4                  Intel  Iris Plus Graphics 650

[5 rows x 23 columns]
Satır Sayısı: 1275
Sütun Sayısı: 23

c:\Users\yavuz.yucel\AppData\Local\Programs\Python\Python312\Lib\site-
packages\dask\dataframe\__init__.py:42: FutureWarning:
Dask dataframe query planning is disabled because dask-expr is not
installed.

You can install it with `pip install dask[dataframe]` or `conda
install dask`.
This will raise in a future version.

  warnings.warn(msg, FutureWarning)
```

1. Vaex kütüphanesini kullanınız.

```
pip install vaex

Collecting vaex
  Using cached vaex-4.17.0-py3-none-any.whl.metadata (6.0 kB)
Collecting vaex-core~=4.17.1 (from vaex)
  Downloading vaex-core-4.17.1.tar.gz (2.5 MB)
Note: you may need to restart the kernel to use updated packages.

ERROR: Could not install packages due to an OSError: [Errno 13]
Permission denied: 'C:\\Users\\yavuz.yucel\\AppData\\Local\\Temp\\pip-
unpack-ugofoazn\\vaex-core-4.17.1.tar.gz'
Consider using the `--user` option or check the permissions.


[notice] A new release of pip is available: 24.0 -> 24.2
[notice] To update, run: python.exe -m pip install --upgrade pip
```

```
# 1 Euro = 35 Türk Lirası olarak varsayalım
df['Fiyat (TürkLirasi)'] = df['Fiyat(Euro)'] * 35

# Oluşturulan yeni sütunu kontrol edelim
print(df[['Fiyat(Euro)', 'Fiyat (TürkLirasi)']].head())
```

```
   Fiyat(Euro)  Fiyat (TürkLirasi)
0      1339.69            46889.15
1       898.94            31462.90
2       575.00            20125.00
```

```
3      2537.45             88810.75
4      1803.60             63126.00

# Fiyat (TürkLirasi) sütununun normalize edilmesi
df['Fiyat_Normalized'] = (df['Fiyat (TürkLirasi)'] - df['Fiyat
(TürkLirasi)'].mean()) / df['Fiyat (TürkLirasi)'].std()

# Sonuçları kontrol edelim
print(df[['Fiyat (TürkLirasi)', 'Fiyat_Normalized']].head())

   Fiyat (TürkLirasi)  Fiyat_Normalized
0            46889.15          0.290623
1            31462.90         -0.337262
2            20125.00         -0.798742
3            88810.75          1.996931
4            63126.00          0.951501
```

1. Bir metni farklı dillere çeviriniz.

```
pip install deep-translator

Requirement already satisfied: deep-translator in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(1.11.4)
Requirement already satisfied: beautifulsoup4<5.0.0,>=4.9.1 in c:\
users\yavuz.yucel\appdata\local\programs\python\python312\lib\site-
packages (from deep-translator) (4.12.3)
Requirement already satisfied: requests<3.0.0,>=2.23.0 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from deep-translator) (2.32.3)
Requirement already satisfied: soupsieve>1.2 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
beautifulsoup4<5.0.0,>=4.9.1->deep-translator) (2.6)
Requirement already satisfied: charset-normalizer<4,>=2 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from requests<3.0.0,>=2.23.0->deep-translator) (3.3.2)
Requirement already satisfied: idna<4,>=2.5 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
requests<3.0.0,>=2.23.0->deep-translator) (3.7)
Requirement already satisfied: urllib3<3,>=1.21.1 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from requests<3.0.0,>=2.23.0->deep-translator) (2.2.1)
Requirement already satisfied: certifi>=2017.4.17 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from requests<3.0.0,>=2.23.0->deep-translator) (2024.2.2)
Note: you may need to restart the kernel to use updated packages.


[notice] A new release of pip is available: 24.0 -> 24.2
[notice] To update, run: python.exe -m pip install --upgrade pip
```

```
from deep_translator import GoogleTranslator

# Çeviri yapmak için GoogleTranslator kullanımı
metin = "Merhaba, nasılsınız?"

# Farklı dillere çeviri
ceviri_ingilizce = GoogleTranslator(source='tr',
target='en').translate(metin)
ceviri_almanca = GoogleTranslator(source='tr',
target='de').translate(metin)
ceviri_fransizca = GoogleTranslator(source='tr',
target='fr').translate(metin)

# Sonuçları ekrana yazdırma
print(f"Orijinal Metin: {metin}")
print(f"İngilizce: {ceviri_ingilizce}")
print(f"Almanca: {ceviri_almanca}")
print(f"Fransızca: {ceviri_fransizca}")

Orijinal Metin: Merhaba, nasılsınız?
İngilizce: Hello how are you?
Almanca: Hallo, wie geht es dir?
Fransızca: Bonjour comment allez-vous?
```

1. Bir metnin özetini çıkarınız.

```
pip install transformers

Requirement already satisfied: transformers in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (4.45.2)
Requirement already satisfied: filelock in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
transformers) (3.16.1)
Requirement already satisfied: huggingface-hub<1.0,>=0.23.2 in c:\
users\yavuz.yucel\appdata\local\programs\python\python312\lib\site-
packages (from transformers) (0.26.1)
Requirement already satisfied: numpy>=1.17 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
transformers) (1.26.4)
Requirement already satisfied: packaging>=20.0 in c:\users\
yavuz.yucel\appdata\roaming\python\python312\site-packages (from
transformers) (23.2)
Requirement already satisfied: pyyaml>=5.1 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
transformers) (6.0.2)
Requirement already satisfied: regex!=2019.12.17 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from transformers) (2024.9.11)
Requirement already satisfied: requests in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
```

```
transformers) (2.32.3)
Requirement already satisfied: safetensors>=0.4.1 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from transformers) (0.4.5)
Requirement already satisfied: tokenizers<0.21,>=0.20 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from transformers) (0.20.1)
Requirement already satisfied: tqdm>=4.27 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
transformers) (4.66.4)
Requirement already satisfied: fsspec>=2023.5.0 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from huggingface-hub<1.0,>=0.23.2->transformers) (2024.10.0)
Requirement already satisfied: typing-extensions>=3.7.4.3 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from huggingface-hub<1.0,>=0.23.2->transformers) (4.12.0)
Requirement already satisfied: colorama in c:\users\yavuz.yucel\
appdata\roaming\python\python312\site-packages (from tqdm>=4.27-
>transformers) (0.4.6)
Requirement already satisfied: charset-normalizer<4,>=2 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from requests->transformers) (3.3.2)
Requirement already satisfied: idna<4,>=2.5 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
requests->transformers) (3.7)
Requirement already satisfied: urllib3<3,>=1.21.1 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from requests->transformers) (2.2.1)
Requirement already satisfied: certifi>=2017.4.17 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from requests->transformers) (2024.2.2)
Note: you may need to restart the kernel to use updated packages.


[notice] A new release of pip is available: 24.0 -> 24.2
[notice] To update, run: python.exe -m pip install --upgrade pip
```

```
pip install tf-keras
```

```
Requirement already satisfied: tf-keras in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (2.17.0)
Requirement already satisfied: tensorflow<2.18,>=2.17 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from tf-keras) (2.17.0)
Requirement already satisfied: tensorflow-intel==2.17.0 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from tensorflow<2.18,>=2.17->tf-keras) (2.17.0)
Requirement already satisfied: absl-py>=1.0.0 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
tensorflow-intel==2.17.0->tensorflow<2.18,>=2.17->tf-keras) (2.1.0)
```

```
Requirement already satisfied: astunparse>=1.6.0 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from tensorflow-intel==2.17.0->tensorflow<2.18,>=2.17->tf-keras)
(1.6.3)
Requirement already satisfied: flatbuffers>=24.3.25 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from tensorflow-intel==2.17.0->tensorflow<2.18,>=2.17->tf-keras)
(24.3.25)
Requirement already satisfied: gast!=0.5.0,!=0.5.1,!=0.5.2,>=0.2.1 in
c:\users\yavuz.yucel\appdata\local\programs\python\python312\lib\site-
packages (from tensorflow-intel==2.17.0->tensorflow<2.18,>=2.17->tf-
keras) (0.6.0)
Requirement already satisfied: google-pasta>=0.1.1 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from tensorflow-intel==2.17.0->tensorflow<2.18,>=2.17->tf-keras)
(0.2.0)
Requirement already satisfied: h5py>=3.10.0 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
tensorflow-intel==2.17.0->tensorflow<2.18,>=2.17->tf-keras) (3.12.1)
Requirement already satisfied: libclang>=13.0.0 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from tensorflow-intel==2.17.0->tensorflow<2.18,>=2.17->tf-keras)
(18.1.1)
Requirement already satisfied: ml-dtypes<0.5.0,>=0.3.1 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from tensorflow-intel==2.17.0->tensorflow<2.18,>=2.17->tf-keras)
(0.4.1)
Requirement already satisfied: opt-einsum>=2.3.2 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from tensorflow-intel==2.17.0->tensorflow<2.18,>=2.17->tf-keras)
(3.4.0)
Requirement already satisfied: packaging in c:\users\yavuz.yucel\
appdata\roaming\python\python312\site-packages (from tensorflow-
intel==2.17.0->tensorflow<2.18,>=2.17->tf-keras) (23.2)
Requirement already satisfied: protobuf!=4.21.0,!=4.21.1,!=4.21.2,!
=4.21.3,!=4.21.4,!=4.21.5,<5.0.0dev,>=3.20.3 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
tensorflow-intel==2.17.0->tensorflow<2.18,>=2.17->tf-keras) (4.25.5)
Requirement already satisfied: requests<3,>=2.21.0 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from tensorflow-intel==2.17.0->tensorflow<2.18,>=2.17->tf-keras)
(2.32.3)
Requirement already satisfied: setuptools in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
tensorflow-intel==2.17.0->tensorflow<2.18,>=2.17->tf-keras) (69.1.1)
Requirement already satisfied: six>=1.12.0 in c:\users\yavuz.yucel\
appdata\roaming\python\python312\site-packages (from tensorflow-
intel==2.17.0->tensorflow<2.18,>=2.17->tf-keras) (1.16.0)
Requirement already satisfied: termcolor>=1.1.0 in c:\users\
```

```
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from tensorflow-intel==2.17.0->tensorflow<2.18,>=2.17->tf-keras)
(2.5.0)
Requirement already satisfied: typing-extensions>=3.6.6 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from tensorflow-intel==2.17.0->tensorflow<2.18,>=2.17->tf-keras)
(4.12.0)
Requirement already satisfied: wrapt>=1.11.0 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
tensorflow-intel==2.17.0->tensorflow<2.18,>=2.17->tf-keras) (1.16.0)
Requirement already satisfied: grpcio<2.0,>=1.24.3 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from tensorflow-intel==2.17.0->tensorflow<2.18,>=2.17->tf-keras)
(1.67.0)
Requirement already satisfied: tensorboard<2.18,>=2.17 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from tensorflow-intel==2.17.0->tensorflow<2.18,>=2.17->tf-keras)
(2.17.1)
Requirement already satisfied: keras>=3.2.0 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
tensorflow-intel==2.17.0->tensorflow<2.18,>=2.17->tf-keras) (3.6.0)
Requirement already satisfied: numpy<2.0.0,>=1.26.0 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from tensorflow-intel==2.17.0->tensorflow<2.18,>=2.17->tf-keras)
(1.26.4)
Requirement already satisfied: wheel<1.0,>=0.23.0 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from astunparse>=1.6.0->tensorflow-intel==2.17.0-
>tensorflow<2.18,>=2.17->tf-keras) (0.44.0)
Requirement already satisfied: rich in c:\users\yavuz.yucel\appdata\
local\programs\python\python312\lib\site-packages (from keras>=3.2.0-
>tensorflow-intel==2.17.0->tensorflow<2.18,>=2.17->tf-keras) (13.9.3)
Requirement already satisfied: namex in c:\users\yavuz.yucel\appdata\
local\programs\python\python312\lib\site-packages (from keras>=3.2.0-
>tensorflow-intel==2.17.0->tensorflow<2.18,>=2.17->tf-keras) (0.0.8)
Requirement already satisfied: optree in c:\users\yavuz.yucel\appdata\
local\programs\python\python312\lib\site-packages (from keras>=3.2.0-
>tensorflow-intel==2.17.0->tensorflow<2.18,>=2.17->tf-keras) (0.13.0)
Requirement already satisfied: charset-normalizer<4,>=2 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from requests<3,>=2.21.0->tensorflow-intel==2.17.0-
>tensorflow<2.18,>=2.17->tf-keras) (3.3.2)
Requirement already satisfied: idna<4,>=2.5 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
requests<3,>=2.21.0->tensorflow-intel==2.17.0->tensorflow<2.18,>=2.17-
>tf-keras) (3.7)
Requirement already satisfied: urllib3<3,>=1.21.1 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from requests<3,>=2.21.0->tensorflow-intel==2.17.0-
```

```
>tensorflow<2.18,>=2.17->tf-keras) (2.2.1)
Requirement already satisfied: certifi>=2017.4.17 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from requests<3,>=2.21.0->tensorflow-intel==2.17.0-
>tensorflow<2.18,>=2.17->tf-keras) (2024.2.2)
Requirement already satisfied: markdown>=2.6.8 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from tensorboard<2.18,>=2.17->tensorflow-intel==2.17.0-
>tensorflow<2.18,>=2.17->tf-keras) (3.7)
Requirement already satisfied: tensorboard-data-server<0.8.0,>=0.7.0
in c:\users\yavuz.yucel\appdata\local\programs\python\python312\lib\
site-packages (from tensorboard<2.18,>=2.17->tensorflow-intel==2.17.0-
>tensorflow<2.18,>=2.17->tf-keras) (0.7.2)
Requirement already satisfied: werkzeug>=1.0.1 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from tensorboard<2.18,>=2.17->tensorflow-intel==2.17.0-
>tensorflow<2.18,>=2.17->tf-keras) (3.0.4)
Requirement already satisfied: MarkupSafe>=2.1.1 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from werkzeug>=1.0.1->tensorboard<2.18,>=2.17->tensorflow-
intel==2.17.0->tensorflow<2.18,>=2.17->tf-keras) (2.1.5)
Requirement already satisfied: markdown-it-py>=2.2.0 in c:\users\
yavuz.yucel\appdata\local\programs\python\python312\lib\site-packages
(from rich->keras>=3.2.0->tensorflow-intel==2.17.0-
>tensorflow<2.18,>=2.17->tf-keras) (3.0.0)
Requirement already satisfied: pygments<3.0.0,>=2.13.0 in c:\users\
yavuz.yucel\appdata\roaming\python\python312\site-packages (from rich-
>keras>=3.2.0->tensorflow-intel==2.17.0->tensorflow<2.18,>=2.17->tf-
keras) (2.17.2)
Requirement already satisfied: mdurl~=0.1 in c:\users\yavuz.yucel\
appdata\local\programs\python\python312\lib\site-packages (from
markdown-it-py>=2.2.0->rich->keras>=3.2.0->tensorflow-intel==2.17.0-
>tensorflow<2.18,>=2.17->tf-keras) (0.1.2)
Note: you may need to restart the kernel to use updated packages.


[notice] A new release of pip is available: 24.0 -> 24.2
[notice] To update, run: python.exe -m pip install --upgrade pip
```

```python
from transformers import pipeline

# Özetleme için HuggingFace pipeline'ı oluşturma
ozetleyici = pipeline("summarization")

# Özetlemek istediğiniz metin
metin = """
Yapay zeka, insan zekasını taklit edebilen makineler geliştirme
alanıdır. Bu alandaki çalışmalar,
robotik, dil işleme, öğrenme ve planlama gibi çeşitli alanlarda yer
almaktadır.
```

```
Son yıllarda yapay zeka alanında büyük ilerlemeler kaydedilmiştir ve
bu, sağlık, eğitim, iş ve eğlence gibi
pek çok sektörde devrim niteliğinde değişikliklere yol açmıştır.
"""

# Metni özetleme
ozet = ozetleyici(metin, max_length=50, min_length=20,
do_sample=False)

# Özeti ekrana yazdırma
print("Özet:", ozet[0]['summary_text'])
```

```
No model was supplied, defaulted to sshleifer/distilbart-cnn-12-6 and
revision a4f8f3e (https://huggingface.co/sshleifer/distilbart-cnn-12-
6).
Using a pipeline without specifying a model name and revision in
production is not recommended.

Özet:  Yapay zeka, insan zekasını taklit edebilen makineler geliştirme
alanıdır. Bu alandaki çalış
```

1. Bir metnin Anahtar Kelimelerini bulunuz.

```
import string

# Analiz edilecek metin
metin = "Python programlama dili, veri analizi, yapay zeka ve makine
öğrenimi gibi alanlarda yaygın olarak kullanılan güçlü bir dildir."

# Noktalama işaretlerini kaldırma
metin = metin.translate(str.maketrans('', '', string.punctuation))

# Metni kelimelere ayırma (boşluklara göre)
kelimeler = metin.split()

# Anahtar kelimeleri yazdırma
print("Kelimeler:", kelimeler)
```

```
Kelimeler: ['Python', 'programlama', 'dili', 'veri', 'analizi',
'yapay', 'zeka', 've', 'makine', 'öğrenimi', 'gibi', 'alanlarda',
'yaygın', 'olarak', 'kullanılan', 'güçlü', 'bir', 'dildir']
```