```
 1 D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\Scripts\python.exe "C:\Program Files\
   JetBrains\PyCharm 2022.1.1\plugins\python\
   helpers\pydev\pydevconsole.py" --mode=client
    --port=51916
 2
 3 import sys; print('Python %s on %s' % (sys.
   version, sys.platform))
 4 import django; print('Django %s' % django.
   get_version())
 5 sys.path.extend(['D:\\Study\\UWindsor\\
   MAC2021\\MAY2022\\
   COMP8347_INTERNET_APPLICATIONS\\LABS\\LAB03
   ', 'C:\\Program Files\\JetBrains\\PyCharm
   2022.1.1\\plugins\\python\\helpers\\pycharm
   ', 'C:\\Program Files\\JetBrains\\PyCharm
   2022.1.1\\plugins\\python\\helpers\\pydev'])
 6 if 'setup' in dir(django): django.setup()
 7 import django_manage_shell;
   django_manage_shell.run("D:/Study/UWindsor/
   MAC2021/MAY2022/
   COMP8347_INTERNET_APPLICATIONS/LABS/LAB03")
 8 PyDev console: starting.
 9
10 Python 3.10.1 (tags/v3.10.1:2cd268a, Dec  6
   2021, 19:10:37) [MSC v.1929 64 bit (AMD64)]
   on win32
11 Django 4.0.4
12 >>> import django
13 >>> from myapp.models import Topic, Course,
   Student, Order
14 Traceback (most recent call last):
15   File "C:\Python310\lib\code.py", line 90,
   in runcode
```

```
16        exec(code, self.locals)
17   File "<input>", line 1, in <module>
18   File "C:\Program Files\JetBrains\PyCharm
    2022.1.1\plugins\python\helpers\pydev\
    _pydev_bundle\pydev_import_hook.py", line 21
    , in do_import
19      module = self._system_import(name, *args
    , **kwargs)
20 ModuleNotFoundError: No module named 'myapp'
21 >>> from myApp.models import Topic, Course,
    Student, Order
22 >>> Entry.objects.all()
23 Traceback (most recent call last):
24   File "C:\Python310\lib\code.py", line 90,
    in runcode
25      exec(code, self.locals)
26   File "<input>", line 1, in <module>
27 NameError: name 'Entry' is not defined
28 >>> students = Student.objects.all()
29 >>> students
30 <QuerySet [<Student: Mary Jones>, <Student:
    John Smith>, <Student: Alan George>, <Student
    : Josh Jones>, <Student: Chris Bill>]>
31 >>> courses = Course.objects.all()
32 >>> courses
33 <QuerySet [<Course: CCNA>, <Course: AWS>, <
    Course: CompTIA Security>, <Course: Oracle
    SQL>, <Course: Microeconomics>, <Course:
    Introduction to Economics>, <Course: Global
    Economics>, <Course: Web Development Bootcamp
    >, <Course: Web Design>, <Course: Web
    Development Masterclass>, <Course: Build
    Responsive Websites>, <Course: Innovation for
     Business>, <Course: Leadership Skills>, <
    Course: Project Management>]>
```

```
34 >>> orders = Order.objects.all()
35 >>> orders
36 <QuerySet [<Order: order#1 courseName: Web
   Development Bootcamp StudentId: Mary Jones
   >, <Order: order#2 courseName: Project
   Management StudentId: Mary Jones>, <Order:
   order#3 courseName: CCNA StudentId: John
   Smith>, <Order: order#4 courseName:
   Microeconomics StudentId: Chris Bill>, <Order
   : order#5 courseName: Build Responsive
   Websites StudentId: Chris Bill>, <Order:
   order#6 courseName: CCNA StudentId: Alan
   George>, <Order: order#7 courseName: CompTIA
   Security StudentId: Alan George>, <Order:
   order#8 courseName: Project Management
   StudentId: Josh Jones>, <Order: order#9
   courseName: Innovation for Business StudentId
   : Josh Jones>, <Order: order#10 courseName:
   Build Responsive Websites StudentId: John
   Smith>, <Order: order#11 courseName: Global
   Economics StudentId: Mary Jones>, <Order:
   order#12 courseName: Oracle SQL StudentId:
   Josh Jones>]>
37 >>> Student.objects.filter(LASTNAME = 'Jones
   ')
38 Traceback (most recent call last):
39   File "C:\Python310\lib\code.py", line 90,
   in runcode
40     exec(code, self.locals)
41   File "<input>", line 1, in <module>
42   File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\
   manager.py", line 85, in manager_method
43     return getattr(self.get_queryset(), name
```

```
43  )(*args, **kwargs)
44    File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\query
   .py", line 1071, in filter
45      return self._filter_or_exclude(False,
   args, kwargs)
46    File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\query
   .py", line 1089, in _filter_or_exclude
47      clone._filter_or_exclude_inplace(negate,
   args, kwargs)
48    File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\query
   .py", line 1096, in
   _filter_or_exclude_inplace
49      self._query.add_q(Q(*args, **kwargs))
50    File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\sql\
   query.py", line 1502, in add_q
51      clause, _ = self._add_q(q_object, self.
   used_aliases)
52    File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\sql\
   query.py", line 1532, in _add_q
53      child_clause, needed_inner = self.
   build_filter(
54    File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\sql\
   query.py", line 1377, in build_filter
```

```
55      lookups, parts, reffed_expression = self.
   solve_lookup_type(arg)
56   File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\sql\
   query.py", line 1187, in solve_lookup_type
57     _, field, _, lookup_parts = self.
   names_to_path(lookup_splitted, self.get_meta
   ())
58   File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\sql\
   query.py", line 1677, in names_to_path
59     raise FieldError(
60 django.core.exceptions.FieldError: Cannot
   resolve keyword 'LASTNAME' into field.
   Choices are: city, date_joined, email,
   first_name, groups, id, interested_in,
   is_active, is_staff, is_superuser, last_login
   , last_name, logentry, order, password,
   school, user_permissions, user_ptr,
   user_ptr_id, username
61 >>> Student.objects.filter(lastname='Jones')
62 Traceback (most recent call last):
63   File "C:\Python310\lib\code.py", line 90,
   in runcode
64     exec(code, self.locals)
65  File "<input>", line 1, in <module>
66   File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\
   manager.py", line 85, in manager_method
67     return getattr(self.get_queryset(), name
   )(*args, **kwargs)
68   File "D:\Study\UWindsor\MAC2021\MAY2022\
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```
68 COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\
   query.py", line 1071, in filter
69     return self._filter_or_exclude(False,
   args, kwargs)
70   File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\
   query.py", line 1089, in _filter_or_exclude
71     clone._filter_or_exclude_inplace(negate
   , args, kwargs)
72   File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\
   query.py", line 1096, in
   _filter_or_exclude_inplace
73     self._query.add_q(Q(*args, **kwargs))
74   File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\sql\
   query.py", line 1502, in add_q
75     clause, _ = self._add_q(q_object, self.
   used_aliases)
76   File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\sql\
   query.py", line 1532, in _add_q
77     child_clause, needed_inner = self.
   build_filter(
78   File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\sql\
   query.py", line 1377, in build_filter
79     lookups, parts, reffed_expression = self
   .solve_lookup_type(arg)
```

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80    File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\sql\
   query.py", line 1187, in solve_lookup_type
81      _, field, _, lookup_parts = self.
   names_to_path(lookup_splitted, self.get_meta
   ())
82    File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\sql\
   query.py", line 1677, in names_to_path
83      raise FieldError(
84 django.core.exceptions.FieldError: Cannot
   resolve keyword 'lastname' into field.
   Choices are: city, date_joined, email,
   first_name, groups, id, interested_in,
   is_active, is_staff, is_superuser,
   last_login, last_name, logentry, order,
   password, school, user_permissions, user_ptr
   , user_ptr_id, username
85 >>> Student.objects.filter(last_name='Jones
   ')
86 <QuerySet [<Student: Mary Jones>, <Student:
   Josh Jones>]>
87 >>> Course.objects.filter(topic='Management
   ')
88 Traceback (most recent call last):
89    File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\
   fields\__init__.py", line 1988, in
   get_prep_value
90      return int(value)
91 ValueError: invalid literal for int() with
   base 10: 'Management'
```

```
 92
 93 The above exception was the direct cause of
    the following exception:
 94
 95 Traceback (most recent call last):
 96   File "C:\Python310\lib\code.py", line 90,
    in runcode
 97     exec(code, self.locals)
 98   File "<input>", line 1, in <module>
 99   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    manager.py", line 85, in manager_method
100     return getattr(self.get_queryset(), name
    )(*args, **kwargs)
101   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 1071, in filter
102     return self._filter_or_exclude(False,
    args, kwargs)
103   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 1089, in _filter_or_exclude
104     clone._filter_or_exclude_inplace(negate
    , args, kwargs)
105   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 1096, in
    _filter_or_exclude_inplace
106     self._query.add_q(Q(*args, **kwargs))
107   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
```

```
107  venv\lib\site-packages\django\db\models\sql\
     query.py", line 1502, in add_q
108      clause, _ = self._add_q(q_object, self.
     used_aliases)
109    File "D:\Study\UWindsor\MAC2021\MAY2022\
     COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
     venv\lib\site-packages\django\db\models\sql\
     query.py", line 1532, in _add_q
110      child_clause, needed_inner = self.
     build_filter(
111    File "D:\Study\UWindsor\MAC2021\MAY2022\
     COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
     venv\lib\site-packages\django\db\models\sql\
     query.py", line 1448, in build_filter
112      condition = self.build_lookup(lookups,
     col, value)
113    File "D:\Study\UWindsor\MAC2021\MAY2022\
     COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
     venv\lib\site-packages\django\db\models\sql\
     query.py", line 1273, in build_lookup
114      lookup = lookup_class(lhs, rhs)
115    File "D:\Study\UWindsor\MAC2021\MAY2022\
     COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
     venv\lib\site-packages\django\db\models\
     lookups.py", line 27, in __init__
116      self.rhs = self.get_prep_lookup()
117    File "D:\Study\UWindsor\MAC2021\MAY2022\
     COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
     venv\lib\site-packages\django\db\models\
     fields\related_lookups.py", line 154, in
     get_prep_lookup
118      self.rhs = target_field.get_prep_value(
     self.rhs)
119    File "D:\Study\UWindsor\MAC2021\MAY2022\
     COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
```

```
119 venv\lib\site-packages\django\db\models\
    fields\__init__.py", line 1990, in
    get_prep_value
120     raise e.__class__(
121 ValueError: Field 'id' expected a number but
     got 'Management'.
122 >>> Course.objects.filter(topic='Management
    , Business')
123 Traceback (most recent call last):
124   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    fields\__init__.py", line 1988, in
    get_prep_value
125     return int(value)
126 ValueError: invalid literal for int() with
    base 10: 'Management, Business'
127
128 The above exception was the direct cause of
    the following exception:
129
130 Traceback (most recent call last):
131   File "C:\Python310\lib\code.py", line 90,
    in runcode
132     exec(code, self.locals)
133   File "<input>", line 1, in <module>
134   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    manager.py", line 85, in manager_method
135     return getattr(self.get_queryset(), name
    )(*args, **kwargs)
136   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
```

```
136 query.py", line 1071, in filter
137     return self._filter_or_exclude(False,
    args, kwargs)
138   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 1089, in _filter_or_exclude
139     clone._filter_or_exclude_inplace(negate
    , args, kwargs)
140   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 1096, in
    _filter_or_exclude_inplace
141     self._query.add_q(Q(*args, **kwargs))
142   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
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    query.py", line 1502, in add_q
143     clause, _ = self._add_q(q_object, self.
    used_aliases)
144   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\sql\
    query.py", line 1532, in _add_q
145     child_clause, needed_inner = self.
    build_filter(
146   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\sql\
    query.py", line 1448, in build_filter
147     condition = self.build_lookup(lookups,
    col, value)
148   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
```

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148 venv\lib\site-packages\django\db\models\sql\
    query.py", line 1273, in build_lookup
149     lookup = lookup_class(lhs, rhs)
150   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    lookups.py", line 27, in __init__
151     self.rhs = self.get_prep_lookup()
152   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    fields\related_lookups.py", line 154, in
    get_prep_lookup
153     self.rhs = target_field.get_prep_value(
    self.rhs)
154   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    fields\__init__.py", line 1990, in
    get_prep_value
155     raise e.__class__(
156 ValueError: Field 'id' expected a number but
     got 'Management, Business'.
157 >>> Course.objects.filter(topic='Management
    , Business')
158 Traceback (most recent call last):
159   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    fields\__init__.py", line 1988, in
    get_prep_value
160     return int(value)
161 ValueError: invalid literal for int() with
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    in runcode
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169   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    manager.py", line 85, in manager_method
170     return getattr(self.get_queryset(), name
    )(*args, **kwargs)
171   File "D:\Study\UWindsor\MAC2021\MAY2022\
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    venv\lib\site-packages\django\db\models\
    query.py", line 1071, in filter
172     return self._filter_or_exclude(False,
    args, kwargs)
173   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
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    query.py", line 1089, in _filter_or_exclude
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    , args, kwargs)
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    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 1096, in
    _filter_or_exclude_inplace
176     self._query.add_q(Q(*args, **kwargs))
177   File "D:\Study\UWindsor\MAC2021\MAY2022\
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```

```
177 query.py", line 1502, in add_q
178     clause, _ = self._add_q(q_object, self.
    used_aliases)
179   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\sql\
    query.py", line 1532, in _add_q
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181   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\sql\
    query.py", line 1448, in build_filter
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    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
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    query.py", line 1273, in build_lookup
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    venv\lib\site-packages\django\db\models\
    lookups.py", line 27, in __init__
186     self.rhs = self.get_prep_lookup()
187   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    fields\related_lookups.py", line 154, in
    get_prep_lookup
188     self.rhs = target_field.get_prep_value(
    self.rhs)
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    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
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189 fields\__init__.py", line 1990, in
    get_prep_value
190    raise e.__class__(
191 ValueError: Field 'id' expected a number but
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192 >>> Course.objects.all()
193 <QuerySet [<Course: CCNA>, <Course: AWS>, <
    Course: CompTIA Security>, <Course: Oracle
    SQL>, <Course: Microeconomics>, <Course:
    Introduction to Economics>, <Course: Global
    Economics>, <Course: Web Development
    Bootcamp>, <Course: Web Design>, <Course:
    Web Development Masterclass>, <Course: Build
     Responsive Websites>, <Course: Innovation
    for Business>, <Course: Leadership Skills
    >, <Course: Project Management>]>
194 >>> Course.objects.filter('Management ,
    Business')
195 Traceback (most recent call last):
196    File "C:\Python310\lib\code.py", line 90,
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200      return getattr(self.get_queryset(), name
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    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 1071, in filter
202      return self._filter_or_exclude(False,
    args, kwargs)
```

```
203    File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\
   query.py", line 1089, in _filter_or_exclude
204      clone._filter_or_exclude_inplace(negate
   , args, kwargs)
205    File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\
   query.py", line 1096, in
   _filter_or_exclude_inplace
206      self._query.add_q(Q(*args, **kwargs))
207    File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\sql\
   query.py", line 1502, in add_q
208      clause, _ = self._add_q(q_object, self.
   used_aliases)
209    File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\sql\
   query.py", line 1532, in _add_q
210      child_clause, needed_inner = self.
   build_filter(
211    File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\sql\
   query.py", line 1374, in build_filter
212      arg, value = filter_expr
213 ValueError: too many values to unpack (
   expected 2)
214 >>> Course.objects.filter('Management')
215 Traceback (most recent call last):
216    File "C:\Python310\lib\code.py", line 90,
   in runcode
```

```
217        exec(code, self.locals)
218    File "<input>", line 1, in <module>
219    File "D:\Study\UWindsor\MAC2021\MAY2022\
       COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
       venv\lib\site-packages\django\db\models\
       manager.py", line 85, in manager_method
220      return getattr(self.get_queryset(), name
       )(*args, **kwargs)
221    File "D:\Study\UWindsor\MAC2021\MAY2022\
       COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
       venv\lib\site-packages\django\db\models\
       query.py", line 1071, in filter
222      return self._filter_or_exclude(False,
       args, kwargs)
223    File "D:\Study\UWindsor\MAC2021\MAY2022\
       COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
       venv\lib\site-packages\django\db\models\
       query.py", line 1089, in _filter_or_exclude
224      clone._filter_or_exclude_inplace(negate
       , args, kwargs)
225    File "D:\Study\UWindsor\MAC2021\MAY2022\
       COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
       venv\lib\site-packages\django\db\models\
       query.py", line 1096, in
       _filter_or_exclude_inplace
226      self._query.add_q(Q(*args, **kwargs))
227    File "D:\Study\UWindsor\MAC2021\MAY2022\
       COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
       venv\lib\site-packages\django\db\models\sql\
       query.py", line 1502, in add_q
228      clause, _ = self._add_q(q_object, self.
       used_aliases)
229    File "D:\Study\UWindsor\MAC2021\MAY2022\
       COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
       venv\lib\site-packages\django\db\models\sql\
```

```
229 query.py", line 1532, in _add_q
230     child_clause, needed_inner = self.
    build_filter(
231   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\sql\
    query.py", line 1374, in build_filter
232     arg, value = filter_expr
233 ValueError: too many values to unpack (
    expected 2)
234 >>> Course.objects.filter(Topic='Management
    ')
235 Traceback (most recent call last):
236   File "C:\Python310\lib\code.py", line 90,
    in runcode
237     exec(code, self.locals)
238   File "<input>", line 1, in <module>
239   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    manager.py", line 85, in manager_method
240     return getattr(self.get_queryset(), name
    )(*args, **kwargs)
241   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 1071, in filter
242     return self._filter_or_exclude(False,
    args, kwargs)
243   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 1089, in _filter_or_exclude
244     clone._filter_or_exclude_inplace(negate
    , args, kwargs)
```

```
245     File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 1096, in
    _filter_or_exclude_inplace
246     self._query.add_q(Q(*args, **kwargs))
247     File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\sql\
    query.py", line 1502, in add_q
248     clause, _ = self._add_q(q_object, self.
    used_aliases)
249     File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\sql\
    query.py", line 1532, in _add_q
250     child_clause, needed_inner = self.
    build_filter(
251     File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\sql\
    query.py", line 1377, in build_filter
252     lookups, parts, reffed_expression = self
    .solve_lookup_type(arg)
253     File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\sql\
    query.py", line 1187, in solve_lookup_type
254     _, field, _, lookup_parts = self.
    names_to_path(lookup_splitted, self.get_meta
    ())
255     File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\sql\
    query.py", line 1677, in names_to_path
```

```
256      raise FieldError(
257 django.core.exceptions.FieldError: Cannot
    resolve keyword 'Topic' into field. Choices
    are: description, for_everyone, id, name,
    order, price, topic, topic_id
258 >>> Course.objects.filter(topic__startswith
    ='Management')
259 Traceback (most recent call last):
260   File "C:\Python310\lib\code.py", line 90,
    in runcode
261     exec(code, self.locals)
262   File "<input>", line 1, in <module>
263   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    manager.py", line 85, in manager_method
264     return getattr(self.get_queryset(), name
    )(*args, **kwargs)
265   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 1071, in filter
266     return self._filter_or_exclude(False,
    args, kwargs)
267   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 1089, in _filter_or_exclude
268     clone._filter_or_exclude_inplace(negate
    , args, kwargs)
269   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 1096, in
    _filter_or_exclude_inplace
```

```
270      self._query.add_q(Q(*args, **kwargs))
271    File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\sql\
    query.py", line 1502, in add_q
272      clause, _ = self._add_q(q_object, self.
    used_aliases)
273    File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\sql\
    query.py", line 1532, in _add_q
274      child_clause, needed_inner = self.
    build_filter(
275    File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\sql\
    query.py", line 1448, in build_filter
276      condition = self.build_lookup(lookups,
    col, value)
277    File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\sql\
    query.py", line 1262, in build_lookup
278      raise FieldError(
279 django.core.exceptions.FieldError: Related
    Field got invalid lookup: startswith
280 >>> Course.objects.filter(category='
    Management')
281 Traceback (most recent call last):
282    File "C:\Python310\lib\code.py", line 90,
    in runcode
283      exec(code, self.locals)
284    File "<input>", line 1, in <module>
285    File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
```

```
285 venv\lib\site-packages\django\db\models\
    manager.py", line 85, in manager_method
286     return getattr(self.get_queryset(), name
    )(*args, **kwargs)
287   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 1071, in filter
288     return self._filter_or_exclude(False,
    args, kwargs)
289   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 1089, in _filter_or_exclude
290     clone._filter_or_exclude_inplace(negate
    , args, kwargs)
291   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 1096, in
    _filter_or_exclude_inplace
292     self._query.add_q(Q(*args, **kwargs))
293   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\sql\
    query.py", line 1502, in add_q
294     clause, _ = self._add_q(q_object, self.
    used_aliases)
295   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\sql\
    query.py", line 1532, in _add_q
296     child_clause, needed_inner = self.
    build_filter(
297   File "D:\Study\UWindsor\MAC2021\MAY2022\
```

```
297 COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\sql\
    query.py", line 1377, in build_filter
298     lookups, parts, reffed_expression = self
    .solve_lookup_type(arg)
299   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\sql\
    query.py", line 1187, in solve_lookup_type
300     _, field, _, lookup_parts = self.
    names_to_path(lookup_splitted, self.get_meta
    ())
301   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\sql\
    query.py", line 1677, in names_to_path
302     raise FieldError(
303 django.core.exceptions.FieldError: Cannot
    resolve keyword 'category' into field.
    Choices are: description, for_everyone, id,
    name, order, price, topic, topic_id
304 >>> Student.objects.filter(last_name='Jones
    ')
305 <QuerySet [<Student: Mary Jones>, <Student:
    Josh Jones>]>
306 >>> Student.objects.filter(topic.last_name='
    Jones')
307 Traceback (most recent call last):
308   File "C:\Python310\lib\code.py", line 63,
    in runsource
309     code = self.compile(source, filename,
    symbol)
310   File "C:\Python310\lib\codeop.py", line
    185, in __call__
311     return _maybe_compile(self.compiler,
```

```
311 source, filename, symbol)
312   File "C:\Python310\lib\codeop.py", line
    102, in _maybe_compile
313     raise err1
314   File "C:\Python310\lib\codeop.py", line 91
    , in _maybe_compile
315     code1 = compiler(source + "\n", filename
    , symbol)
316   File "C:\Python310\lib\codeop.py", line
    150, in __call__
317     codeob = compile(source, filename,
    symbol, self.flags, True)
318   File "<input>", line 1
319     Student.objects.filter(topic.last_name='
    Jones')
320                        ^^^^^^^^^^^^^^^^
321 SyntaxError: expression cannot contain
    assignment, perhaps you meant "=="?
322 >>> Student.objects.filter(topic.last_name
    =='Jones')
323 Traceback (most recent call last):
324   File "C:\Python310\lib\code.py", line 90,
    in runcode
325     exec(code, self.locals)
326   File "<input>", line 1, in <module>
327 NameError: name 'topic' is not defined. Did
    you mean: 'Topic'?
328 >>> Student.objects.filter(Topic.last_name
    =='Jones')
329 Traceback (most recent call last):
330   File "C:\Python310\lib\code.py", line 90,
    in runcode
331     exec(code, self.locals)
332   File "<input>", line 1, in <module>
333 AttributeError: type object 'Topic' has no
```

```
333 attribute 'last_name'
334 >>> Student.objects.filter(Topic.Category='
    Jones')
335 Traceback (most recent call last):
336   File "C:\Python310\lib\code.py", line 90,
    in runcode
337     exec(code, self.locals)
338   File "<input>", line 1, in <module>
339 AttributeError: type object 'Topic' has no
    attribute 'Category'. Did you mean: '
    category'?
340 >>> Student.objects.filter(Topic.category='
    Management')
341 Traceback (most recent call last):
342   File "C:\Python310\lib\code.py", line 90,
    in runcode
343     exec(code, self.locals)
344   File "<input>", line 1, in <module>
345   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    manager.py", line 85, in manager_method
346     return getattr(self.get_queryset(), name
    )(*args, **kwargs)
347   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 1071, in filter
348     return self._filter_or_exclude(False,
    args, kwargs)
349   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 1089, in _filter_or_exclude
350     clone._filter_or_exclude_inplace(negate
```

```
350 , args, kwargs)
351   File "D:\Study\UWindsor\MAC2021\MAY2022\
      COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
      venv\lib\site-packages\django\db\models\
      query.py", line 1096, in
      _filter_or_exclude_inplace
352     self._query.add_q(Q(*args, **kwargs))
353   File "D:\Study\UWindsor\MAC2021\MAY2022\
      COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
      venv\lib\site-packages\django\db\models\sql\
      query.py", line 1502, in add_q
354     clause, _ = self._add_q(q_object, self.
      used_aliases)
355   File "D:\Study\UWindsor\MAC2021\MAY2022\
      COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
      venv\lib\site-packages\django\db\models\sql\
      query.py", line 1532, in _add_q
356     child_clause, needed_inner = self.
      build_filter(
357   File "D:\Study\UWindsor\MAC2021\MAY2022\
      COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
      venv\lib\site-packages\django\db\models\sql\
      query.py", line 1374, in build_filter
358     arg, value = filter_expr
359 TypeError: cannot unpack non-iterable bool
    object
360 >>> Course.objects.filter(Topic.Category
     == "Health & Fitness")
361 Traceback (most recent call last):
362   File "C:\Python310\lib\code.py", line 90,
    in runcode
363     exec(code, self.locals)
364   File "<input>", line 1, in <module>
365 AttributeError: type object 'Topic' has no
    attribute 'Category'. Did you mean: '
```

```
365 category'?
366 >>> Course.objects.filter(Topic.category
      == "Health & Fitness")
367 Traceback (most recent call last):
368   File "C:\Python310\lib\code.py", line 90,
    in runcode
369     exec(code, self.locals)
370   File "<input>", line 1, in <module>
371   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    manager.py", line 85, in manager_method
372     return getattr(self.get_queryset(), name
    )(*args, **kwargs)
373   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 1071, in filter
374     return self._filter_or_exclude(False,
    args, kwargs)
375   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 1089, in _filter_or_exclude
376     clone._filter_or_exclude_inplace(negate
    , args, kwargs)
377   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 1096, in
    _filter_or_exclude_inplace
378     self._query.add_q(Q(*args, **kwargs))
379   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\sql\
```

```
379 query.py", line 1502, in add_q
380     clause, _ = self._add_q(q_object, self.
    used_aliases)
381   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\sql\
    query.py", line 1532, in _add_q
382     child_clause, needed_inner = self.
    build_filter(
383   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\sql\
    query.py", line 1374, in build_filter
384     arg, value = filter_expr
385 TypeError: cannot unpack non-iterable bool
    object
386 >>> Course.objects.get(topic='Management')
387 Traceback (most recent call last):
388   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    fields\__init__.py", line 1988, in
    get_prep_value
389     return int(value)
390 ValueError: invalid literal for int() with
    base 10: 'Management'
391
392 The above exception was the direct cause of
    the following exception:
393
394 Traceback (most recent call last):
395   File "C:\Python310\lib\code.py", line 90,
    in runcode
396     exec(code, self.locals)
397   File "<input>", line 1, in <module>
```

```
398    File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    manager.py", line 85, in manager_method
399      return getattr(self.get_queryset(), name
    )(*args, **kwargs)
400    File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 482, in get
401      clone = self._chain() if self.query.
    combinator else self.filter(*args, **kwargs)
402    File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 1071, in filter
403      return self._filter_or_exclude(False,
    args, kwargs)
404    File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 1089, in _filter_or_exclude
405      clone._filter_or_exclude_inplace(negate
    , args, kwargs)
406    File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 1096, in
    _filter_or_exclude_inplace
407      self._query.add_q(Q(*args, **kwargs))
408    File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\sql\
    query.py", line 1502, in add_q
409      clause, _ = self._add_q(q_object, self.
```

```
409 used_aliases)
410   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\sql\
    query.py", line 1532, in _add_q
411     child_clause, needed_inner = self.
    build_filter(
412   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\sql\
    query.py", line 1448, in build_filter
413     condition = self.build_lookup(lookups,
    col, value)
414   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\sql\
    query.py", line 1273, in build_lookup
415     lookup = lookup_class(lhs, rhs)
416   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    lookups.py", line 27, in __init__
417     self.rhs = self.get_prep_lookup()
418   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    fields\related_lookups.py", line 154, in
    get_prep_lookup
419     self.rhs = target_field.get_prep_value(
    self.rhs)
420   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    fields\__init__.py", line 1990, in
    get_prep_value
```

```
421      raise e.__class__(
422 ValueError: Field 'id' expected a number but
    got 'Management'.
423 >>> Course.objects.filter(topic='Management
    ')
424 Traceback (most recent call last):
425   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    fields\__init__.py", line 1988, in
    get_prep_value
426     return int(value)
427 ValueError: invalid literal for int() with
    base 10: 'Management'
428
429 The above exception was the direct cause of
    the following exception:
430
431 Traceback (most recent call last):
432   File "C:\Python310\lib\code.py", line 90,
    in runcode
433     exec(code, self.locals)
434   File "<input>", line 1, in <module>
435   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    manager.py", line 85, in manager_method
436     return getattr(self.get_queryset(), name
    )(*args, **kwargs)
437   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 1071, in filter
438     return self._filter_or_exclude(False,
    args, kwargs)
```

```
439    File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\
   query.py", line 1089, in _filter_or_exclude
440      clone._filter_or_exclude_inplace(negate
   , args, kwargs)
441    File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\
   query.py", line 1096, in
   _filter_or_exclude_inplace
442      self._query.add_q(Q(*args, **kwargs))
443    File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\sql\
   query.py", line 1502, in add_q
444      clause, _ = self._add_q(q_object, self.
   used_aliases)
445    File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\sql\
   query.py", line 1532, in _add_q
446      child_clause, needed_inner = self.
   build_filter(
447    File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\sql\
   query.py", line 1448, in build_filter
448      condition = self.build_lookup(lookups,
   col, value)
449    File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\sql\
   query.py", line 1273, in build_lookup
450      lookup = lookup_class(lhs, rhs)
```

```
451    File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\
   lookups.py", line 27, in __init__
452      self.rhs = self.get_prep_lookup()
453    File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\
   fields\related_lookups.py", line 154, in
   get_prep_lookup
454      self.rhs = target_field.get_prep_value(
   self.rhs)
455    File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\
   fields\__init__.py", line 1990, in
   get_prep_value
456      raise e.__class__(
457 ValueError: Field 'id' expected a number but
    got 'Management'.
458 >>> Course.objects.filter(name='Management')
459 <QuerySet []>
460 >>> Course.objects.filter(Topic.name='
   Management, Business')
461 Traceback (most recent call last):
462   File "C:\Python310\lib\code.py", line 63,
   in runsource
463     code = self.compile(source, filename,
   symbol)
464   File "C:\Python310\lib\codeop.py", line
   185, in __call__
465     return _maybe_compile(self.compiler,
   source, filename, symbol)
466   File "C:\Python310\lib\codeop.py", line
   102, in _maybe_compile
```

```
467     raise err1
468   File "C:\Python310\lib\codeop.py", line 91
   , in _maybe_compile
469     code1 = compiler(source + "\n", filename
   , symbol)
470   File "C:\Python310\lib\codeop.py", line
   150, in __call__
471     codeob = compile(source, filename,
   symbol, self.flags, True)
472   File "<input>", line 1
473     Course.objects.filter(Topic.name='
   Management, Business')
474                        ^^^^^^^^^^
475 SyntaxError: expression cannot contain
   assignment, perhaps you meant "=="?
476 >>> Course.objects.filter(Topic.name=='
   Management, Business')
477 Traceback (most recent call last):
478   File "C:\Python310\lib\code.py", line 90,
   in runcode
479     exec(code, self.locals)
480   File "<input>", line 1, in <module>
481   File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\
   manager.py", line 85, in manager_method
482     return getattr(self.get_queryset(), name
   )(*args, **kwargs)
483   File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\
   query.py", line 1071, in filter
484     return self._filter_or_exclude(False,
   args, kwargs)
485   File "D:\Study\UWindsor\MAC2021\MAY2022\
```

```
485 COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 1089, in _filter_or_exclude
486     clone._filter_or_exclude_inplace(negate
    , args, kwargs)
487   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 1096, in
    _filter_or_exclude_inplace
488     self._query.add_q(Q(*args, **kwargs))
489   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\sql\
    query.py", line 1502, in add_q
490     clause, _ = self._add_q(q_object, self.
    used_aliases)
491   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\sql\
    query.py", line 1532, in _add_q
492     child_clause, needed_inner = self.
    build_filter(
493   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\sql\
    query.py", line 1374, in build_filter
494     arg, value = filter_expr
495 TypeError: cannot unpack non-iterable bool
    object
496 >>> Course.objects.filter(topic=='Management
    , Business')
497 Traceback (most recent call last):
498   File "C:\Python310\lib\code.py", line 90,
    in runcode
```

```
499       exec(code, self.locals)
500   File "<input>", line 1, in <module>
501 NameError: name 'topic' is not defined. Did
    you mean: 'Topic'?
502 >>> Course.objects.filter(topic__startswith
    ='Management').values()
503 Traceback (most recent call last):
504   File "C:\Python310\lib\code.py", line 90,
    in runcode
505       exec(code, self.locals)
506   File "<input>", line 1, in <module>
507   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    manager.py", line 85, in manager_method
508       return getattr(self.get_queryset(), name
    )(*args, **kwargs)
509   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 1071, in filter
510       return self._filter_or_exclude(False,
    args, kwargs)
511   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 1089, in _filter_or_exclude
512       clone._filter_or_exclude_inplace(negate
    , args, kwargs)
513   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 1096, in
    _filter_or_exclude_inplace
514       self._query.add_q(Q(*args, **kwargs))
```

```
515     File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\sql\
    query.py", line 1502, in add_q
516     clause, _ = self._add_q(q_object, self.
    used_aliases)
517     File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\sql\
    query.py", line 1532, in _add_q
518     child_clause, needed_inner = self.
    build_filter(
519     File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\sql\
    query.py", line 1448, in build_filter
520     condition = self.build_lookup(lookups,
    col, value)
521     File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\sql\
    query.py", line 1262, in build_lookup
522     raise FieldError(
523 django.core.exceptions.FieldError: Related
    Field got invalid lookup: startswith
524 >>> Course.objects.all()
525 <QuerySet [<Course: CCNA>, <Course: AWS>, <
    Course: CompTIA Security>, <Course: Oracle
    SQL>, <Course: Microeconomics>, <Course:
    Introduction to Economics>, <Course: Global
    Economics>, <Course: Web Development
    Bootcamp>, <Course: Web Design>, <Course:
    Web Development Masterclass>, <Course: Build
     Responsive Websites>, <Course: Innovation
    for Business>, <Course: Leadership Skills
```

```
525 >, <Course: Project Management>]>
526 >>> Course.objects.all()[:1].values()
527 <QuerySet [{'id': 1, 'topic_id': 4, 'name
    ': 'CCNA', 'price': Decimal('199.99'), '
    for_everyone': False, 'description': ''}]>
528 >>> Topic.objects.all()
529 <QuerySet [<Topic: Web Development ,
    Development>, <Topic: Management , Business
    >, <Topic: Economics , Finance&Accounting
    >, <Topic: IT certification , IT & Software
    >, <Topic: Sports , Health & Fitness>]>
530 >>> Topic.objects.all().values()
531 <QuerySet [{'id': 1, 'name': 'Web
    Development', 'category': 'Development'}, {'
    id': 2, 'name': 'Management', 'category': '
    Business'}, {'id': 3, 'name': 'Economics', '
    category': 'Finance&Accounting'}, {'id': 4
    , 'name': 'IT certification', 'category': '
    IT & Software'}, {'id': 5, 'name': 'Sports
    ', 'category': 'Health & Fitness'}]>
532 >>> Topic.objects.filter(name='Management')
533 <QuerySet [<Topic: Management , Business>]>
534 >>> Topic.objects.filter(name='Management').
    values(id)
535 Traceback (most recent call last):
536   File "C:\Python310\lib\code.py", line 90,
    in runcode
537     exec(code, self.locals)
538   File "<input>", line 1, in <module>
539   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 948, in values
540     clone = self._values(*fields, **
    expressions)
```

```
541    File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\
   query.py", line 943, in _values
542      clone.query.set_values(fields)
543    File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\sql\
   query.py", line 2425, in set_values
544      self.add_fields(field_names, True)
545    File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\sql\
   query.py", line 2108, in add_fields
546      name.split(LOOKUP_SEP), opts, alias,
   allow_many=allow_m2m
547 AttributeError: 'builtin_function_or_method
   ' object has no attribute 'split'
548 >>> Topic.objects.filter(name='Management').
   get(id)
549 Traceback (most recent call last):
550   File "C:\Python310\lib\code.py", line 90,
   in runcode
551      exec(code, self.locals)
552   File "<input>", line 1, in <module>
553    File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\
   query.py", line 482, in get
554      clone = self._chain() if self.query.
   combinator else self.filter(*args, **kwargs)
555    File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\
   query.py", line 1071, in filter
```

```
556     return self._filter_or_exclude(False,
    args, kwargs)
557   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 1089, in _filter_or_exclude
558     clone._filter_or_exclude_inplace(negate
    , args, kwargs)
559   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 1096, in
    _filter_or_exclude_inplace
560     self._query.add_q(Q(*args, **kwargs))
561   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\sql\
    query.py", line 1502, in add_q
562     clause, _ = self._add_q(q_object, self.
    used_aliases)
563   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\sql\
    query.py", line 1532, in _add_q
564     child_clause, needed_inner = self.
    build_filter(
565   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\sql\
    query.py", line 1374, in build_filter
566     arg, value = filter_expr
567 TypeError: cannot unpack non-iterable
    builtin_function_or_method object
568 >>> m_topic = Topic.objects.get(name='
    Management')
```

```
569 >>> m_topic
570 <Topic: Management , Business>
571 >>> m_topic.id
572 2
573 >>> Course.objects.filter(topic=m_topic.id)
574 <QuerySet [<Course: Innovation for Business
    >, <Course: Leadership Skills>, <Course:
    Project Management>]>
575 >>> Student.objects.all()[:1].values()
576 <QuerySet [{'id': 2, 'password': '222', '
    last_login': None, 'is_superuser': False, '
    username': 'mary', 'first_name': 'Mary', '
    last_name': 'Jones', 'email': '', 'is_staff
    ': False, 'is_active': True, 'date_joined':
    datetime.datetime(2022, 5, 26, 18, 7, 45,
    tzinfo=datetime.timezone.utc), 'user_ptr_id
    ': 2, 'school': '235 Sunset Avenue', 'city
    ': 'VC'}]>
577 >>> Student.objects.filter(school__contains
    ='Sunset Avenue')
578 <QuerySet [<Student: Mary Jones>, <Student:
    Josh Jones>]>
579 >>> Student.objects.filter(school__contains
    ='Avenue')
580 <QuerySet [<Student: Mary Jones>, <Student:
    John Smith>, <Student: Josh Jones>]>
581 >>> Student.objects.filter(school__contains
    ='Avenue').filter(city='WI')
582 <QuerySet []>
583 >>> Student.objects.filter(school__contains
    ='Avenue').filter(city='WS')
584 <QuerySet [<Student: John Smith>]>
585 >>> Orders.objects.all()[:1].values()
586 Traceback (most recent call last):
587   File "C:\Python310\lib\code.py", line 90,
```

```
587 in runcode
588    exec(code, self.locals)
589   File "<input>", line 1, in <module>
590 NameError: name 'Orders' is not defined. Did
     you mean: 'orders'?
591 >>> Orders.objects.all()[:1].value()
592 Traceback (most recent call last):
593   File "C:\Python310\lib\code.py", line 90,
     in runcode
594    exec(code, self.locals)
595   File "<input>", line 1, in <module>
596 NameError: name 'Orders' is not defined. Did
     you mean: 'orders'?
597 >>> Order.objects.all()[:1].value()
598 Traceback (most recent call last):
599   File "C:\Python310\lib\code.py", line 90,
     in runcode
600    exec(code, self.locals)
601   File "<input>", line 1, in <module>
602 AttributeError: 'QuerySet' object has no
     attribute 'value'. Did you mean: 'values'?
603 >>> Order.objects.all()[:1].values()
604 <QuerySet [{'id': 1, 'course_id': 8, '
     student_id': 2, 'levels': 1, 'order_status
     ': 1, 'order_date': datetime.date(2022, 6, 1
     )}]>
605 >>> Topic.objects.filter(category='Health &
     Fitness')
606 <QuerySet [<Topic: Sports , Health & Fitness
     >]>
607 >>> Topic.objects.filter(category='Health &
     Fitness').id
608 Traceback (most recent call last):
609   File "C:\Python310\lib\code.py", line 90,
     in runcode
```

```
610      exec(code, self.locals)
611   File "<input>", line 1, in <module>
612 AttributeError: 'QuerySet' object has no
    attribute 'id'
613 >>> Topic.objects.filter(category='Health &
    Fitness').values().id
614 Traceback (most recent call last):
615   File "C:\Python310\lib\code.py", line 90,
    in runcode
616      exec(code, self.locals)
617   File "<input>", line 1, in <module>
618 AttributeError: 'QuerySet' object has no
    attribute 'id'
619 >>> Topic.objects.filter(category='Health &
    Fitness').values()
620 <QuerySet [{'id': 5, 'name': 'Sports', '
    category': 'Health & Fitness'}]>
621 >>> Topic.objects.filter(category='Health &
    Fitness').values()[id]
622 Traceback (most recent call last):
623   File "C:\Python310\lib\code.py", line 90,
    in runcode
624      exec(code, self.locals)
625   File "<input>", line 1, in <module>
626   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 330, in __getitem__
627     raise TypeError(
628 TypeError: QuerySet indices must be integers
     or slices, not builtin_function_or_method.
629 >>> Topic.objects.filter(category='Health &
    Fitness').values()[id]
630 Traceback (most recent call last):
631   File "C:\Python310\lib\code.py", line 90,
```

```
631 in runcode
632     exec(code, self.locals)
633   File "<input>", line 1, in <module>
634    File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\
   query.py", line 330, in __getitem__
635     raise TypeError(
636 TypeError: QuerySet indices must be integers
    or slices, not builtin_function_or_method.
637 >>> Topic.objects.filter(category='Health &
   Fitness').values()
638 <QuerySet [{'id': 5, 'name': 'Sports', '
   category': 'Health & Fitness'}]>
639 >>> hf = Topic.objects.filter(category='
   Health & Fitness').values()
640 >>> hf.id
641 Traceback (most recent call last):
642   File "C:\Python310\lib\code.py", line 90,
   in runcode
643     exec(code, self.locals)
644   File "<input>", line 1, in <module>
645 AttributeError: 'QuerySet' object has no
   attribute 'id'
646 >>> hf
647 <QuerySet [{'id': 5, 'name': 'Sports', '
   category': 'Health & Fitness'}]>
648 >>> hf['id']
649 Traceback (most recent call last):
650   File "C:\Python310\lib\code.py", line 90,
   in runcode
651     exec(code, self.locals)
652   File "<input>", line 1, in <module>
653    File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
```

```
653 venv\lib\site-packages\django\db\models\
    query.py", line 330, in __getitem__
654     raise TypeError(
655 TypeError: QuerySet indices must be integers
     or slices, not str.
656 >>> hf[id]
657 Traceback (most recent call last):
658   File "C:\Python310\lib\code.py", line 90,
    in runcode
659     exec(code, self.locals)
660   File "<input>", line 1, in <module>
661   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 330, in __getitem__
662     raise TypeError(
663 TypeError: QuerySet indices must be integers
     or slices, not builtin_function_or_method.
664 >>> hf.id
665 Traceback (most recent call last):
666   File "C:\Python310\lib\code.py", line 90,
    in runcode
667     exec(code, self.locals)
668   File "<input>", line 1, in <module>
669 AttributeError: 'QuerySet' object has no
    attribute 'id'
670 >>> hf
671 <QuerySet [{'id': 5, 'name': 'Sports', '
    category': 'Health & Fitness'}]>
672 >>> hf[0].id
673 Traceback (most recent call last):
674   File "C:\Python310\lib\code.py", line 90,
    in runcode
675     exec(code, self.locals)
676   File "<input>", line 1, in <module>
```

```
677 AttributeError: 'dict' object has no
    attribute 'id'
678 >>> hf = Topic.objects.get(category='Health
     & Fitness').values()
679 Traceback (most recent call last):
680   File "C:\Python310\lib\code.py", line 90,
    in runcode
681     exec(code, self.locals)
682   File "<input>", line 1, in <module>
683 AttributeError: 'Topic' object has no
    attribute 'values'
684 >>> hf = Topic.objects.get(category='Health
     & Fitness')
685 >>> hf
686 <Topic: Sports , Health & Fitness>
687 >>> hf.id
688 5
689 >>> Orders.objects.filter(topic=hf.id)
690 Traceback (most recent call last):
691   File "C:\Python310\lib\code.py", line 90,
    in runcode
692     exec(code, self.locals)
693   File "<input>", line 1, in <module>
694 NameError: name 'Orders' is not defined. Did
     you mean: 'orders'?
695 >>> Order.objects.filter(topic=hf.id)
696 Traceback (most recent call last):
697   File "C:\Python310\lib\code.py", line 90,
    in runcode
698     exec(code, self.locals)
699   File "<input>", line 1, in <module>
700   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    manager.py", line 85, in manager_method
```

```
701      return getattr(self.get_queryset(), name
   )(*args, **kwargs)
702    File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\
   query.py", line 1071, in filter
703      return self._filter_or_exclude(False,
   args, kwargs)
704    File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\
   query.py", line 1089, in _filter_or_exclude
705      clone._filter_or_exclude_inplace(negate
   , args, kwargs)
706    File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\
   query.py", line 1096, in
   _filter_or_exclude_inplace
707      self._query.add_q(Q(*args, **kwargs))
708    File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\sql\
   query.py", line 1502, in add_q
709      clause, _ = self._add_q(q_object, self.
   used_aliases)
710    File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\sql\
   query.py", line 1532, in _add_q
711      child_clause, needed_inner = self.
   build_filter(
712    File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\sql\
```

```
712 query.py", line 1377, in build_filter
713     lookups, parts, reffed_expression = self
    .solve_lookup_type(arg)
714   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\sql\
    query.py", line 1187, in solve_lookup_type
715     _, field, _, lookup_parts = self.
    names_to_path(lookup_splitted, self.get_meta
    ())
716   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\sql\
    query.py", line 1677, in names_to_path
717     raise FieldError(
718 django.core.exceptions.FieldError: Cannot
    resolve keyword 'topic' into field. Choices
    are: course, course_id, id, levels,
    order_date, order_status, student,
    student_id
719 >>> Order.objects.filter(course=hf.id)
720 <QuerySet [<Order: order#4 courseName:
    Microeconomics StudentId: Chris Bill>]>
721 >>> hf.id
722 5
723 >>> Topic.objects.all().values()
724 <QuerySet [{'id': 1, 'name': 'Web
    Development', 'category': 'Development'}, {'
    id': 2, 'name': 'Management', 'category': '
    Business'}, {'id': 3, 'name': 'Economics', '
    category': 'Finance&Accounting'}, {'id': 4
    , 'name': 'IT certification', 'category': '
    IT & Software'}, {'id': 5, 'name': 'Sports
    ', 'category': 'Health & Fitness'}]>
725 >>> Order.objects.all().values()
```

726 <QuerySet [{'id': 1, 'course_id': 8, 'student_id': 2, 'levels': 1, 'order_status': 1, 'order_date': datetime.date(2022, 6, 1)}, {'id': 2, 'course_id': 14, 'student_id': 2, 'levels': 1, 'order_status': 1, 'order_date': datetime.date(2022, 6, 1)}, {'id': 3, 'course_id': 1, 'student_id': 3, 'levels': 1, 'order_status': 1, 'order_date': datetime.date(2022, 6, 1)}, {'id': 4, 'course_id': 5, 'student_id': 6, 'levels': 1, 'order_status': 1, 'order_date': datetime.date(2022, 6, 1)}, {'id': 5, 'course_id': 11, 'student_id': 6, 'levels': 1, 'order_status': 1, 'order_date': datetime.date(2022, 6, 1)}, {'id': 6, 'course_id': 1, 'student_id': 4, 'levels': 1, 'order_status': 1, 'order_date': datetime.date(2022, 6, 1)}, {'id': 7, 'course_id': 3, 'student_id': 4, 'levels': 1, 'order_status': 1, 'order_date': datetime.date(2022, 6, 1)}, {'id': 8, 'course_id': 14, 'student_id': 5, 'levels': 1, 'order_status': 1, 'order_date': datetime.date(2022, 6, 1)}, {'id': 9, 'course_id': 12, 'student_id': 5, 'levels': 1, 'order_status': 1, 'order_date': datetime.date(2022, 6, 1)}, {'id': 10, 'course_id': 11, 'student_id': 3, 'levels': 1, 'order_status': 0, 'order_date': datetime.date(2022, 6, 1)}, {'id': 11, 'course_id': 7, 'student_id': 2, 'levels': 1, 'order_status': 0, 'order_date': datetime.date(2022, 6, 1)}, {'id': 12, 'course_id': 4, 'student_id': 5, 'levels': 1, 'order_status': 0, 'order_date': datetime.

```
726 date(2022, 6, 1)}]>
727 >>> hf
728 <Topic: Sports , Health & Fitness>
729 >>> Student.objects.all()[:1].values()
730 <QuerySet [{'id': 2, 'password': '222', '
    last_login': None, 'is_superuser': False, '
    username': 'mary', 'first_name': 'Mary', '
    last_name': 'Jones', 'email': '', 'is_staff
    ': False, 'is_active': True, 'date_joined':
    datetime.datetime(2022, 5, 26, 18, 7, 45,
    tzinfo=datetime.timezone.utc), 'user_ptr_id
    ': 2, 'school': '235 Sunset Avenue', 'city
    ': 'VC'}]>
731 >>> Student.objects.filter(interested_in=hf.
    id)
732 <QuerySet []>
733 >>> Student.objects.filter(interested_in=2)
734 <QuerySet [<Student: John Smith>, <Student:
    Alan George>, <Student: Chris Bill>]>
735 >>> Course.objects.filter(price__gte=150)
736 <QuerySet [<Course: CCNA>, <Course: Oracle
    SQL>, <Course: Microeconomics>, <Course:
    Introduction to Economics>, <Course: Web
    Development Bootcamp>, <Course: Web Design
    >, <Course: Innovation for Business>, <
    Course: Leadership Skills>]>
737 >>> len(Course.objects.filter(price__gte=150
    ))
738 8
739 >>> Student.objects.exclude(city="WS")
740 <QuerySet [<Student: Mary Jones>, <Student:
    Alan George>, <Student: Josh Jones>]>
741 >>> Order.objects.all()[:1].values()
742 <QuerySet [{'id': 1, 'course_id': 8, '
    student_id': 2, 'levels': 1, 'order_status
```

```
742 ': 1, 'order_date': datetime.date(2022, 6, 1
    )}]>
743 >>> Order.objects.filter(student_id=Student.
    objects.filter(first_name='Chris'))
744 Traceback (most recent call last):
745   File "C:\Python310\lib\code.py", line 90,
    in runcode
746     exec(code, self.locals)
747   File "<input>", line 1, in <module>
748   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 296, in __repr__
749     data = list(self[: REPR_OUTPUT_SIZE + 1
    ])
750   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 302, in __len__
751     self._fetch_all()
752   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 1507, in _fetch_all
753     self._result_cache = list(self.
    _iterable_class(self))
754   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 57, in __iter__
755     results = compiler.execute_sql(
756   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\sql\
    compiler.py", line 1348, in execute_sql
```

```
757     sql, params = self.as_sql()
758   File "D:\Study\UWindsor\MAC2021\MAY2022\
      COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
      venv\lib\site-packages\django\db\models\sql\
      compiler.py", line 598, in as_sql
759       self.compile(self.where) if self.where
      is not None else ("", [])
760   File "D:\Study\UWindsor\MAC2021\MAY2022\
      COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
      venv\lib\site-packages\django\db\models\sql\
      compiler.py", line 496, in compile
761     sql, params = node.as_sql(self, self.
      connection)
762   File "D:\Study\UWindsor\MAC2021\MAY2022\
      COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
      venv\lib\site-packages\django\db\models\sql\
      where.py", line 90, in as_sql
763     sql, params = compiler.compile(child)
764   File "D:\Study\UWindsor\MAC2021\MAY2022\
      COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
      venv\lib\site-packages\django\db\models\sql\
      compiler.py", line 496, in compile
765     sql, params = node.as_sql(self, self.
      connection)
766   File "D:\Study\UWindsor\MAC2021\MAY2022\
      COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
      venv\lib\site-packages\django\db\models\
      fields\related_lookups.py", line 173, in
      as_sql
767     return super().as_sql(compiler,
      connection)
768   File "D:\Study\UWindsor\MAC2021\MAY2022\
      COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
      venv\lib\site-packages\django\db\models\
      lookups.py", line 356, in as_sql
```

```
769     return super().as_sql(compiler,
   connection)
770   File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\
   lookups.py", line 224, in as_sql
771     rhs_sql, rhs_params = self.process_rhs(
   compiler, connection)
772   File "D:\Study\UWindsor\MAC2021\MAY2022\
   COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
   venv\lib\site-packages\django\db\models\
   lookups.py", line 336, in process_rhs
773     raise ValueError(
774 ValueError: The QuerySet value for an exact
   lookup must be limited to one result using
   slicing.
775 >>> Order.objects.filter(student_id=Student.
   objects.filter(first_name='Chris').id)
776 Traceback (most recent call last):
777   File "C:\Python310\lib\code.py", line 90,
   in runcode
778     exec(code, self.locals)
779   File "<input>", line 1, in <module>
780 AttributeError: 'QuerySet' object has no
   attribute 'id'
781 >>> Order.objects.filter(student_id=Student.
   objects.get(first_name='Chris').id)
782 <QuerySet [<Order: order#4 courseName:
   Microeconomics StudentId: Chris Bill>, <
   Order: order#5 courseName: Build Responsive
   Websites StudentId: Chris Bill>]>
783 >>> Course.objects.filter(for_everyone='
   False')
784 <QuerySet [<Course: CCNA>, <Course: AWS>, <
   Course: CompTIA Security>, <Course: Oracle
```

```
784 SQL>, <Course: Microeconomics>, <Course:
    Introduction to Economics>, <Course: Global
    Economics>, <Course: Web Development
    Bootcamp>, <Course: Web Design>, <Course:
    Web Development Masterclass>, <Course: Build
     Responsive Websites>, <Course: Innovation
    for Business>, <Course: Leadership Skills
    >, <Course: Project Management>]>
785 >>> Course.objects.filter(for_everyone=False
    )
786 <QuerySet [<Course: CCNA>, <Course: AWS>, <
    Course: CompTIA Security>, <Course: Oracle
    SQL>, <Course: Microeconomics>, <Course:
    Introduction to Economics>, <Course: Global
    Economics>, <Course: Web Development
    Bootcamp>, <Course: Web Design>, <Course:
    Web Development Masterclass>, <Course: Build
     Responsive Websites>, <Course: Innovation
    for Business>, <Course: Leadership Skills
    >, <Course: Project Management>]>
787 >>> Student.objects.get(first_name=Order.
    objects.get(id=1))
788 Traceback (most recent call last):
789   File "C:\Python310\lib\code.py", line 90,
    in runcode
790     exec(code, self.locals)
791   File "<input>", line 1, in <module>
792   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    manager.py", line 85, in manager_method
793     return getattr(self.get_queryset(), name
    )(*args, **kwargs)
794   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
```

```
794 venv\lib\site-packages\django\db\models\
    query.py", line 496, in get
795     raise self.model.DoesNotExist(
796 myApp.models.Student.DoesNotExist: Student
    matching query does not exist.
797 >>> Student.objects.get(id=Order.objects.get
    (id=1).student)
798 Traceback (most recent call last):
799   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    fields\__init__.py", line 1988, in
    get_prep_value
800     return int(value)
801 TypeError: int() argument must be a string,
    a bytes-like object or a real number, not '
    Student'
802
803 The above exception was the direct cause of
    the following exception:
804
805 Traceback (most recent call last):
806   File "C:\Python310\lib\code.py", line 90,
    in runcode
807     exec(code, self.locals)
808   File "<input>", line 1, in <module>
809   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    manager.py", line 85, in manager_method
810     return getattr(self.get_queryset(), name
    )(*args, **kwargs)
811   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
```

```
811 query.py", line 482, in get
812     clone = self._chain() if self.query.
    combinator else self.filter(*args, **kwargs)
813   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 1071, in filter
814     return self._filter_or_exclude(False,
    args, kwargs)
815   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 1089, in _filter_or_exclude
816     clone._filter_or_exclude_inplace(negate
    , args, kwargs)
817   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 1096, in
    _filter_or_exclude_inplace
818     self._query.add_q(Q(*args, **kwargs))
819   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\sql\
    query.py", line 1502, in add_q
820     clause, _ = self._add_q(q_object, self.
    used_aliases)
821   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\sql\
    query.py", line 1532, in _add_q
822     child_clause, needed_inner = self.
    build_filter(
823   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
```

```
823  venv\lib\site-packages\django\db\models\sql\
     query.py", line 1448, in build_filter
824      condition = self.build_lookup(lookups,
     col, value)
825    File "D:\Study\UWindsor\MAC2021\MAY2022\
     COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
     venv\lib\site-packages\django\db\models\sql\
     query.py", line 1273, in build_lookup
826      lookup = lookup_class(lhs, rhs)
827    File "D:\Study\UWindsor\MAC2021\MAY2022\
     COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
     venv\lib\site-packages\django\db\models\
     lookups.py", line 27, in __init__
828      self.rhs = self.get_prep_lookup()
829    File "D:\Study\UWindsor\MAC2021\MAY2022\
     COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
     venv\lib\site-packages\django\db\models\
     lookups.py", line 85, in get_prep_lookup
830      return self.lhs.output_field.
     get_prep_value(self.rhs)
831    File "D:\Study\UWindsor\MAC2021\MAY2022\
     COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
     venv\lib\site-packages\django\db\models\
     fields\__init__.py", line 1990, in
     get_prep_value
832      raise e.__class__(
833  TypeError: Field 'id' expected a number but
     got <Student: Mary Jones>.
834  >>> Student.objects.get(id=Order.objects.get
     (id=1).student.id)
835  <Student: Mary Jones>
836  >>> Student.objects.get(id=Order.objects.get
     (id=1).student.id).first_name
837  'Mary'
838  >>> Student.objects.get(username='john').
```

```
838 interested_in
839 <django.db.models.fields.related_descriptors
    .create_forward_many_to_many_manager.<locals
    >.ManyRelatedManager object at
    0x000002C33B12E800>
840 >>> courses_in = Student.objects.get(
    username='john').interested_in
841 >>> courses_in
842 <django.db.models.fields.related_descriptors
    .create_forward_many_to_many_manager.<locals
    >.ManyRelatedManager object at
    0x000002C33B1CFC10>
843 >>> Student.objects.get(username='john')
844 <Student: John Smith>
845 >>> Student.objects.get(username='john').
    values()
846 Traceback (most recent call last):
847   File "C:\Python310\lib\code.py", line 90,
    in runcode
848     exec(code, self.locals)
849   File "<input>", line 1, in <module>
850 AttributeError: 'Student' object has no
    attribute 'values'
851 >>> Student.objects.filter(username='john').
    values()
852 <QuerySet [{'id': 3, 'password': '111', '
    last_login': None, 'is_superuser': False, '
    username': 'john', 'first_name': 'John', '
    last_name': 'Smith', 'email': '', 'is_staff
    ': False, 'is_active': True, 'date_joined':
    datetime.datetime(2022, 6, 1, 19, 57, 57,
    tzinfo=datetime.timezone.utc), 'user_ptr_id
    ': 3, 'school': '123 University Avenue', '
    city': 'WS'}]>
853 >>> Student.objects.get(username='john').
```

```
853 interested_in[0]
854 Traceback (most recent call last):
855   File "C:\Python310\lib\code.py", line 90,
    in runcode
856     exec(code, self.locals)
857   File "<input>", line 1, in <module>
858 TypeError: 'ManyRelatedManager' object is
    not subscriptable
859 >>> Student.objects.get(username='john').
    interested_in[1]
860 Traceback (most recent call last):
861   File "C:\Python310\lib\code.py", line 90,
    in runcode
862     exec(code, self.locals)
863   File "<input>", line 1, in <module>
864 TypeError: 'ManyRelatedManager' object is
    not subscriptable
865 >>> type(Student.objects.get(username='john
    ').interested_in)
866 <class 'django.db.models.fields.
    related_descriptors.
    create_forward_many_to_many_manager.<locals
    >.ManyRelatedManager'>
867 >>> Student.objects.get(username='john').
    interested_in[1]
868 Traceback (most recent call last):
869   File "C:\Python310\lib\code.py", line 90,
    in runcode
870     exec(code, self.locals)
871   File "<input>", line 1, in <module>
872 TypeError: 'ManyRelatedManager' object is
    not subscriptable
873 >>> Student.objects.get(username='john').
    interested_in
874 <django.db.models.fields.related_descriptors
```

```
874  .create_forward_many_to_many_manager.<locals
     >.ManyRelatedManager object at
     0x000002C33B22A3E0>
875  >>> Student.objects.get(username='john').
     interested_in.values()
876  <QuerySet [{'id': 1, 'name': 'Web
     Development', 'category': 'Development'}, {'
     id': 2, 'name': 'Management', 'category': '
     Business'}, {'id': 3, 'name': 'Economics', '
     category': 'Finance&Accounting'}, {'id': 4
     , 'name': 'IT certification', 'category': '
     IT & Software'}]>
877  >>> Course.objects.filter(price__lte=150,
     for_everyone=True)
878  <QuerySet []>
879  >>> Order.objects.all()[:1].values()
880  <QuerySet [{'id': 1, 'course_id': 8, '
     student_id': 2, 'levels': 1, 'order_status
     ': 1, 'order_date': datetime.date(2022, 6, 1
     )}]>
881  >>> Course.objects.get(name='Web dev
     BootCamp')
882  Traceback (most recent call last):
883    File "C:\Python310\lib\code.py", line 90,
     in runcode
884      exec(code, self.locals)
885    File "<input>", line 1, in <module>
886    File "D:\Study\UWindsor\MAC2021\MAY2022\
     COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
     venv\lib\site-packages\django\db\models\
     manager.py", line 85, in manager_method
887      return getattr(self.get_queryset(), name
     )(*args, **kwargs)
888    File "D:\Study\UWindsor\MAC2021\MAY2022\
     COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
```

```
888 venv\lib\site-packages\django\db\models\
    query.py", line 496, in get
889     raise self.model.DoesNotExist(
890 myApp.models.Course.DoesNotExist: Course
    matching query does not exist.
891 >>> Course.objects.get(name='Web Dev
    Bootcamp')
892 Traceback (most recent call last):
893   File "C:\Python310\lib\code.py", line 90,
    in runcode
894     exec(code, self.locals)
895   File "<input>", line 1, in <module>
896   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    manager.py", line 85, in manager_method
897     return getattr(self.get_queryset(), name
    )(*args, **kwargs)
898   File "D:\Study\UWindsor\MAC2021\MAY2022\
    COMP8347_INTERNET_APPLICATIONS\LABS\LAB03\
    venv\lib\site-packages\django\db\models\
    query.py", line 496, in get
899     raise self.model.DoesNotExist(
900 myApp.models.Course.DoesNotExist: Course
    matching query does not exist.
901 >>> Course.objects.all().values()
902 <QuerySet [{'id': 1, 'topic_id': 4, 'name
    ': 'CCNA', 'price': Decimal('199.99'), '
    for_everyone': False, 'description': ''}, {'
    id': 2, 'topic_id': 4, 'name': 'AWS', 'price
    ': Decimal('119.99'), 'for_everyone': False
    , 'description': ''}, {'id': 3, 'topic_id':
    4, 'name': 'CompTIA Security', 'price':
    Decimal('139.99'), 'for_everyone': False, '
    description': ''}, {'id': 4, 'topic_id': 4
```

```
902  , 'name': 'Oracle SQL', 'price': Decimal('
     159.99'), 'for_everyone': False, '
     description': ''}, {'id': 5, 'topic_id': 3
     , 'name': 'Microeconomics', 'price': Decimal
     ('199.99'), 'for_everyone': False, '
     description': ''}, {'id': 6, 'topic_id': 3
     , 'name': 'Introduction to Economics', '
     price': Decimal('174.99'), 'for_everyone':
     False, 'description': ''}, {'id': 7, '
     topic_id': 3, 'name': 'Global Economics', '
     price': Decimal('149.99'), 'for_everyone':
     False, 'description': ''}, {'id': 8, '
     topic_id': 1, 'name': 'Web Development
     Bootcamp', 'price': Decimal('199.99'), '
     for_everyone': False, 'description': ''}, {'
     id': 9, 'topic_id': 1, 'name': 'Web Design
     ', 'price': Decimal('159.99'), 'for_everyone
     ': False, 'description': ''}, {'id': 10, '
     topic_id': 1, 'name': 'Web Development
     Masterclass', 'price': Decimal('124.99'), '
     for_everyone': False, 'description': ''}, {'
     id': 11, 'topic_id': 1, 'name': 'Build
     Responsive Websites', 'price': Decimal('149.
     99'), 'for_everyone': False, 'description
     ': ''}, {'id': 12, 'topic_id': 2, 'name': '
     Innovation for Business', 'price': Decimal('
     174.99'), 'for_everyone': False, '
     description': ''}, {'id': 13, 'topic_id': 2
     , 'name': 'Leadership Skills', 'price':
     Decimal('184.99'), 'for_everyone': False, '
     description': ''}, {'id': 14, 'topic_id': 2
     , 'name': 'Project Management', 'price':
     Decimal('149.99'), 'for_everyone': False, '
     description': ''}]>
903  >>> Course.objects.get(name='Web Development
```

```
903  Bootcamp')
904 <Course: Web Development Bootcamp>
905 >>> Course.objects.get(name='Web Development
      Bootcamp').id
906 8
907 >>> Order.objects.filter(course_id=Course.
    objects.get(name='Web Development Bootcamp
    ').id)
908 <QuerySet [<Order: order#1 courseName: Web
    Development Bootcamp StudentId: Mary Jones
    >]>
909 >>> Order.objects.get(course_id=Course.
    objects.get(name='Web Development Bootcamp
    ').id).student_id
910 2
911 >>> Student.objects.get(id=Order.objects.get
    (course_id=Course.objects.get(name='Web
    Development Bootcamp').id).student_id).
    interested_in.values()
912 <QuerySet [{'id': 1, 'name': 'Web
    Development', 'category': 'Development'}, {'
    id': 3, 'name': 'Economics', 'category': '
    Finance&Accounting'}]>
913 >>> Student.objects.get(id=Order.objects.get
    (course_id=Course.objects.get(name='Web
    Development Bootcamp').id).student_id).
    interested_in.values().category
914 Traceback (most recent call last):
915   File "C:\Python310\lib\code.py", line 90,
    in runcode
916     exec(code, self.locals)
917   File "<input>", line 1, in <module>
918 AttributeError: 'QuerySet' object has no
    attribute 'category'
919 >>> Student.objects.get(id=Order.objects.get
```

```
919 (course_id=Course.objects.get(name='Web
    Development Bootcamp').id).student_id).
    interested_in.values()[:2].category
920 Traceback (most recent call last):
921   File "C:\Python310\lib\code.py", line 90,
    in runcode
922     exec(code, self.locals)
923   File "<input>", line 1, in <module>
924 AttributeError: 'QuerySet' object has no
    attribute 'category'
925 >>> Student.objects.get(id=Order.objects.get
    (course_id=Course.objects.get(name='Web
    Development Bootcamp').id).student_id).
    interested_in.values()
926 <QuerySet [{'id': 1, 'name': 'Web
    Development', 'category': 'Development'}, {'
    id': 3, 'name': 'Economics', 'category': '
    Finance&Accounting'}]>
927 >>> for k in Student.objects.get(id=Order.
    objects.get(course_id=Course.objects.get(
    name='Web Development Bootcamp').id).
    student_id).interested_in.values():
928 ...     print(k.category)
929 ...
930 Traceback (most recent call last):
931   File "C:\Python310\lib\code.py", line 90,
    in runcode
932     exec(code, self.locals)
933   File "<input>", line 2, in <module>
934 AttributeError: 'dict' object has no
    attribute 'category'
935 >>> for k in Student.objects.get(id=Order.
    objects.get(course_id=Course.objects.get(
    name='Web Development Bootcamp').id).
    student_id).interested_in.values():
```

```
936 ...        print(k)
937 ...
938 {'id': 1, 'name': 'Web Development', '
    category': 'Development'}
939 {'id': 3, 'name': 'Economics', 'category': '
    Finance&Accounting'}
940 >>> k
941 {'id': 3, 'name': 'Economics', 'category': '
    Finance&Accounting'}
942 >>> k.category
943 Traceback (most recent call last):
944   File "C:\Python310\lib\code.py", line 90,
    in runcode
945     exec(code, self.locals)
946   File "<input>", line 1, in <module>
947 AttributeError: 'dict' object has no
    attribute 'category'
948 >>> k['category']
949 'Finance&Accounting'
950 >>> for k in Student.objects.get(id=Order.
    objects.get(course_id=Course.objects.get(
    name='Web Development Bootcamp').id).
    student_id).interested_in.values():
951 ...        print(k['category'])
952 ...
953 Development
954 Finance&Accounting
955 >>> for k in Student.objects.get(first_name
    ="Alan").interested_in.values():
956 ...        print(k['category'])
957 ...
958 Business
959 IT & Software
960 >>> Student.objects.get(first_name="Alan").
    interested_in
```

```
961 <django.db.models.fields.related_descriptors
    .create_forward_many_to_many_manager.<locals
    >.ManyRelatedManager object at
    0x000002C33B12E800>
962 >>> Student.objects.get(first_name="Alan").
    interested_in.values()
963 <QuerySet [{'id': 2, 'name': 'Management', '
    category': 'Business'}, {'id': 4, 'name': '
    IT certification', 'category': 'IT &
    Software'}]>
964 >>> Student.objects.get(first_name="Alan").
    interested_in.values()
965 <QuerySet [{'id': 2, 'name': 'Management', '
    category': 'Business'}, {'id': 3, 'name': '
    Economics', 'category': 'Finance&Accounting
    '}, {'id': 4, 'name': 'IT certification', '
    category': 'IT & Software'}]>
966 >>> for k in Student.objects.get(first_name
    ="Alan").interested_in.values():
967 ...     print(k['category'])
968 ...
969 Business
970 Finance&Accounting
971 IT & Software
972
```