SDK NetTime6

July 24, 2020

0.0.1 Add src folder to path

```
[12]: import sys, os
sys.path.append(os.path.join(os.getcwd(), '..', 'src'))
```

0.0.2 Import module

```
[14]: import nettime6 as nt6 from importlib import reload
```

0.0.3 Client settings

```
[15]: URL = 'http://172.18.4.57:6091'
USERNAME = 'Argentina'
PWD = 'Spec@1234'
```

0.0.4 Create a client

```
[95]: reload(nt6) # for reaload changes only
client = nt6.Client(url=URL, username=USERNAME, pwd=PWD)
client.is_connected
```

[95]: True

0.0.5 Get employees with summary method

```
[86]: client.get_employees()
```

```
[86]: {'total': 1, 'items': [{'id': 8, 'nif': '12345678'}]}
```

0.0.6 Filter in response (frontend)

```
[87]: client.get_employees(search="1234")
```

```
[87]: {'total': 1, 'items': [{'id': 8, 'nif': '12345678'}]}
```

0.0.7 Specify fields

```
[88]: | query = nt6.Query(fields=["nif", "Apellidos_Nombre", "Province", "birthdate"])
       client.get_employees(query=query)
[88]: {'total': 1,
        'items': [{'nif': '12345678',
          'Apellidos_Nombre': 'Spec, Argentina',
          'Province': 'CABA',
          'birthdate': '1980-01-04T00:00:00.0000000+01:00'}]}
      0.0.8 Filter in backend with nettime filter
[89]: query = nt6.Query(
           fields=["nif", "Apellidos_Nombre", "Province", "birthdate"],
           filterExp='Contains(this.nif, "12345678")'
       client.get_employees(query=query)
[89]: {'total': 1,
        'items': [{'nif': '12345678',
          'Apellidos_Nombre': 'Spec, Argentina',
          'Province': 'CABA',
          'birthdate': '1980-01-04T00:00:00.0000000+01:00'}]}
      0.0.9 Fields definition
[110]: fields = client.get_fields("Persona")
       print('Total:', fields.get('total'))
       fields.get('items')[:2]
      Total: 416
[110]: [{'id': 30,
         'name': 'id',
         'displayName': 'Id',
         'expr': 'this.id',
         'type': 'int',
         'align': 2,
         'sortable': False,
         'width': 0,
         'group': '',
         'numTempOperators': 0},
        {'id': 31,
         'name': 'name',
         'displayName': 'Clave',
         'expr': 'this.name',
```

```
'type': 'String',
         'align': 2,
         'sortable': True,
         'width': 20,
         'group': 'Datos personales',
         'numTempOperators': 0}]
      0.0.10 Fields definition filtering Properties only
[109]: fields_filter = client.get_fields("Persona", filterFields=True)
       print('Total:', fields filter.get('total'))
       fields filter.get('items')[:2]
      Total: 409
[109]: [{'id': 30,
         'name': 'id',
         'displayName': 'Id',
         'expr': 'this.id',
         'type': 'int',
         'align': 2,
         'sortable': False,
         'width': 0,
         'group': '',
         'numTempOperators': 0},
        {'id': 31,
         'name': 'name',
         'displayName': 'Clave',
         'expr': 'this.name',
         'type': 'String',
         'align': 2,
         'sortable': True,
         'width': 20,
         'group': 'Datos personales',
         'numTempOperators': 0}]
      0.0.11 Get incidencias, and update employee
[72]: nt_incidencias = client.get_elements("Incidencia").get('items')
       nt_incidencias[:10]
[72]: [{'id': 0, 'name': 'Sin incidencia'},
        {'id': 1, 'name': 'Inc. horas extra'},
        {'id': 2, 'name': 'Asuntos propios'},
        {'id': 3, 'name': 'Vacaciones'},
        {'id': 4, 'name': 'Lactancia 30 minutos'},
```

{'id': 5, 'name': 'Lactancia 1 hora'},

```
{'id': 6, 'name': 'Visita al médico'},
        {'id': 7, 'name': 'Horas sindicales'},
        {'id': 8, 'name': 'Accidente laboral'},
        {'id': 9, 'name': 'Enfermedad'}]
[113]: incidencias = []
       for incidencia in nt_incidencias:
           incidencias.append({"id": incidencia.get("id")})
       data = {
           "container": "Persona",
           "elements": [8],
           "dataObj": {
               "TimeTypesEmployee": incidencias
           }
       }
       client.save_element(**data)
      To add periods, use the key "validity" with a list of elements like:
      {
          "id": incidencia.get("id"),
          "validity": [{
              "end": "2040-12-31T00:00:00-03:00",
              "start": "2004-01-01T00:00:00-03:00",
          }]
      }
      0.0.12 Get elements definition
[94]: employee = client.get_element_def(container="Persona", elements=[8])
       employee = employee[0]
       # show calendars
       employee.get('Calendar')
[94]: {'id': 8,
        '_c_': '',
        'created': '0001-01-01T00:00:00.0000000',
        'modified': '0001-01-01T00:00:00.0000000',
        'name': '8',
        'rev': 0,
        'years': [{'Year': 2020, 'days': {}},
        {'Year': 2021, 'days': {}},
         {'Year': 2019, 'days': {}}],
        'Cycles': [],
```

```
'Calendars': [{'id': 2,
    'name': 'calendar1',
    'Validity': [{'start': '2020-01-01T00:00:00.0000000',
        'end': '2020-06-30T00:00:00.0000000'}]},
    {'id': 5, 'name': 'ARG'}],
'nodesSource': [],
'multiName': {'es-ES': '8'}}
```

0.0.13 Get default values in create form

```
[95]: client.get_create_form("Jornada")
[95]: {'_c_': 'Jornada',
       'id': -1,
       'modified': '0001-01-01T00:00:00.0000000',
       'created': '0001-01-01T00:00:00.0000000',
       'color': '808080',
       'rev': 0,
       'minutosCortesia': 0,
       'minutosPenalizacion': 0,
       'totalTeorico': 480,
       'minutoFinal': 2880,
       'minutosRetraso': 0,
       'resultados': [],
       'multiName': {},
       'nodesSource': [],
       'incidencias': [],
       'baObligada': [],
       'baFlexible': [],
       'pausas': [],
       'intervalSource': [{'data': 'flex', 'label': 'Bloque flexible'},
        {'data': 'oblig', 'label': 'Bloque obligatorio'},
        {'data': 'all', 'label': 'Toda la jornada'},
        {'data': 'bloque', 'label': 'Bloque del grupo de incidencia'},
        {'data': 'relative', 'label': 'Relativo a...', 'state': 'relative'},
        {'data': 'delete', 'label': 'Sin validez'}],
       'ShifttimeTypesMassIdinci': [],
       'relativeSource': [{'data': 'inishift', 'label': 'Inicio de la jornada'},
        {'data': 'firstflexmin', 'label': 'Inicio bloque flexible'},
        {'data': 'firstoblmin', 'label': 'Inicio bloque obligatorio'},
        {'data': 'endshift', 'label': 'Final de la jornada'},
        {'data': 'endflex', 'label': 'Final bloque flexible'},
        {'data': 'endobli', 'label': 'Final bloque obligatorio'}]}
```

0.0.14 Get dataObj for duplicate element

```
[101]: client.get for duplicate(container="Arbol", element=9)
       # edit and then use client.save_element() method
[101]: {'_c_': 'Arbol',
        'id': -1,
        'name': 'ARGENTINA',
        'rev': 0,
        'createdBy': 'Admin',
        'created': '2020-06-29T09:37:18.7470000',
        'modified': '0001-01-01T00:00:00.0000000',
        'color': '7D7D7D',
        'allowedContainerNames': 'Empleados',
        'order': 0,
        'internalName': 'ARGENTINA',
        'idNodeParent': 1,
        'baAllowedContainers': [14],
        'nodesSource': [],
        'nodes': [],
        'multiName': {'es-ES': 'ARGENTINA'}}
      0.0.15 Delete element
[26]: client.get elements("Jornada", search="TEST")
[26]: {'total': 1, 'items': [{'id': 28, 'name': 'TEST DELETE'}]}
[27]: client.delete_element(container="Jornada", elements=[28])
[27]: [{'type': 8,
         'id': 'HQAAAAOAAEACASAAA==',
         'rev': 75,
         'message': 'Los elementos se han eliminado correctamente.'}]
[28]: client.get_elements("Jornada", search="TEST")
[28]: {'total': 0, 'items': []}
      0.0.16 Getting day results info
[36]: client.get_day_info(employee=8, _from="2020-07-03", to="2020-07-03")
[36]: {'idEmp': 8,
        'days': [{'date': '2020-07-03T00:00:00.0000000',
          'shift': {'date': '2020-07-03T00:00:00.0000000',
           'idEmp': 8,
```

```
'shift': 20,
   'minFin': 2880,
   'minFinForced': False,
   'shiftPetition': {'actions': ['Change']},
   'clockings': [{'id': 21,
     'date': '2020-07-03T09:00:00.0000000',
     'idElem': 0,
     'type': 'timetypes',
     'idReader': 0,
     'user': 'Argentina',
     'ip': '172.18.4.24',
     'status': {'effective': True,
      'desc': 'Entrando',
      'state': '',
      'entering': True,
      'actions': ['Delete', 'Edit', 'Comment']},
     'app': True,
     'numDocuments': 0},
    {'id': 22,
     'date': '2020-07-03T18:00:00.0000000',
     'idElem': 0,
     'type': 'timetypes',
     'idReader': 0,
     'user': 'Argentina',
     'ip': '172.18.4.24',
     'status': {'effective': True,
     'desc': 'Saliendo',
      'state': '',
      'entering': False,
      'actions': ['Delete', 'Edit', 'Comment']},
     'app': True,
     'numDocuments': 0}],
   'info': {'Change': 'Cambiar',
    'Delete': 'Eliminar',
    'Edit': 'Editar',
    'Comment': 'Comentar'}},
  'results': {'date': '2020-07-03T00:00:00.0000000',
   'hasComments': False,
   'hasPending': False,
   'shift': {'id': 20, 'minutes': {'start': 1980, 'end': 2880}},
   'minutesTypes': [{'name': 'Incidencia',
     'results': [{'id': 0, 'minutes': [{'start': 1980, 'end': 2520}]}]}]}],
'taskConfig': 71,
'info': [{'id': 0,
  'type': 'Incidencia',
  'name': 'Sin incidencia',
  'color': '009933'},
```

```
{'id': 20, 'type': 'Jornada', 'name': 'ARG 09 a18', 'color': '808080'}]}
```

0.0.17 Get day results

```
[44]: client.get_results(employee=8, _from="2020-07-03", to="2020-07-03")
[44]: {'results': [{'date': '2020-07-03T00:00:00.0000000',
         'hasComments': False,
         'hasPending': False,
         'shift': {'id': 20, 'minutes': {'start': 1980, 'end': 2880}},
         'minutesTypes': [{'name': 'Lector',
           'results': [{'id': -1,
             'values': [{'name': 'Min', 'value': 540},
              {'name': 'MinDes', 'value': 0},
              {'name': 'Evt', 'value': 1},
              {'name': 'EvtDes', 'value': 0}]}]},
          {'name': 'Incidencia',
           'results': [{'id': 0,
             'values': [{'name': 'Min', 'value': 540},
              {'name': 'MinDes', 'value': 0},
              {'name': 'Evt', 'value': 1},
              {'name': 'EvtDes', 'value': 0}]}]},
          {'name': 'Sistema',
           'results': [{'id': 0,
             'values': [{'name': 'Min', 'value': 540},
              {'name': 'MinDes', 'value': 0},
              {'name': 'Evt', 'value': 1},
              {'name': 'EvtDes', 'value': 0}]},
            {'id': 5,
             'values': [{'name': 'Min', 'value': 0},
              {'name': 'MinDes', 'value': 0},
              {'name': 'Evt', 'value': 0},
              {'name': 'EvtDes', 'value': 0}]},
            {'id': 6,
             'values': [{'name': 'Min', 'value': 540},
              {'name': 'MinDes', 'value': 0},
              {'name': 'Evt', 'value': 1},
              {'name': 'EvtDes', 'value': 0}]},
            {'id': 8,
             'values': [{'name': 'Min', 'value': 480},
              {'name': 'MinDes', 'value': 60},
              {'name': 'Evt', 'value': 1},
              {'name': 'EvtDes', 'value': 1}]},
            {'id': 10,
             'values': [{'name': 'Min', 'value': 0},
              {'name': 'MinDes', 'value': 0},
              {'name': 'Evt', 'value': 0},
```

```
{'name': 'EvtDes', 'value': 0}]},
  {'id': 11,
   'values': [{'name': 'Min', 'value': 480},
    {'name': 'MinDes', 'value': 0},
   {'name': 'Evt', 'value': 1},
   {'name': 'EvtDes', 'value': 0}]},
  {'id': 12,
   'values': [{'name': 'Min', 'value': 540},
   {'name': 'MinDes', 'value': 0},
   {'name': 'Evt', 'value': 1},
    {'name': 'EvtDes', 'value': 0}]}]},
{'name': 'Anomalia',
 'results': [{'id': 0,
   'values': [{'name': 'Min', 'value': 0},
   {'name': 'MinDes', 'value': 0},
    {'name': 'Evt', 'value': 1},
    {'name': 'EvtDes', 'value': 0}]}]},
{'name': 'Jornada',
 'results': [{'id': 20,
   'values': [{'name': 'Min', 'value': 480},
   {'name': 'MinDes', 'value': 0},
   {'name': 'Evt', 'value': 1},
   {'name': 'EvtDes', 'value': 0}]}]},
{'name': 'Aritmetico',
 'results': [{'id': 1,
   'values': [{'name': 'Value', 'value': 60},
   {'name': 'Accumulated', 'value': 60},
   {'name': 'Available', 'value': -60},
   {'name': 'Discard', 'value': 0}]},
  {'id': 2,
   'values': [{'name': 'Value', 'value': 60},
    {'name': 'Accumulated', 'value': -900},
   {'name': 'Available', 'value': 900},
   {'name': 'Discard', 'value': 0}]},
  {'id': 3,
   'values': [{'name': 'Value', 'value': 60},
   {'name': 'Accumulated', 'value': -62820},
   {'name': 'Available', 'value': 62820},
   {'name': 'Discard', 'value': 0}]},
  {'id': 4,
   'values': [{'name': 'Value', 'value': 0},
   {'name': 'Accumulated', 'value': 0},
   {'name': 'Available', 'value': 22},
   {'name': 'Discard', 'value': 0}]},
  {'id': 5,
   'values': [{'name': 'Value', 'value': 40},
   {'name': 'Accumulated', 'value': 40},
```

```
{'name': 'Available', 'value': -40},
      {'name': 'Discard', 'value': 0}]},
     {'id': 6,
      'values': [{'name': 'Value', 'value': 0},
      {'name': 'Accumulated', 'value': 0},
      {'name': 'Available', 'value': 22},
      {'name': 'Discard', 'value': 0}]},
    {'id': 7,
      'values': [{'name': 'Value', 'value': 0},
      {'name': 'Accumulated', 'value': 0},
      {'name': 'Available', 'value': 22},
      {'name': 'Discard', 'value': 0}]}]}]}],
'info': [{'id': -1, 'type': 'Lector', 'name': 'UNKNOWN', 'color': 'FDFDFD'},
{'id': 0, 'type': 'Incidencia', 'name': 'Sin incidencia', 'color': '009933'},
{'id': 0,
  'type': 'Sistema',
 'name': 'Productivas en el centro',
  'color': '009933'},
{'id': 0, 'type': 'Anomalia', 'name': 'Sin anomalía', 'color': 'EEEEEEE'},
{'id': 5,
  'type': 'Sistema',
 'name': 'Ausencias no justificadas',
 'color': 'C83327'},
{'id': 6, 'type': 'Sistema', 'name': 'Productivas', 'color': '3399FF'},
{'id': 8, 'type': 'Sistema', 'name': 'Trabajadas', 'color': '009933'},
{'id': 10, 'type': 'Sistema', 'name': 'Retrasos', 'color': 'CC6600'},
{'id': 11, 'type': 'Sistema', 'name': 'Jornada teórica', 'color': 'FFFFFF'},
{'id': 12, 'type': 'Sistema', 'name': 'Filtro día', 'color': 'FFFFFF'},
{'id': 20, 'type': 'Jornada', 'name': 'ARG 09 a18', 'color': '808080'},
{'id': 1, 'type': 'Aritmetico', 'name': 'Saldo diario', 'color': '0066CC'},
{'id': 2, 'type': 'Aritmetico', 'name': 'Saldo mensual', 'color': 'CC9900'},
{'id': 3, 'type': 'Aritmetico', 'name': 'Saldo anual', 'color': 'FF6600'},
{'id': 4,
  'type': 'Aritmetico',
  'name': 'Saldo Días Vacaciones',
  'color': '007373',
  'numeric': True},
{'id': 5,
  'type': 'Aritmetico',
  'name': 'edad',
  'color': '3ef7a4',
  'numeric': True},
{'id': 6,
  'type': 'Aritmetico',
  'name': 'TEST VACACIONES',
  'color': '007373',
  'numeric': True},
```

```
{'id': 7,
         'type': 'Aritmetico',
         'name': 'Saldo Días Vacaciones 3',
         'color': '0000ff',
         'numeric': True}]}
     0.0.18 Add clocking
[96]: client.add_clocking(employee=8, date="2020-07-02", time="18:30")
[96]: {'ok': True}
     0.0.19 Get day clockings
[97]: client.get_day_clockings(employee=8, date="2020-07-02")
[97]: {'date': '2020-07-02T00:00:00.0000000',
       'idEmp': 8,
       'shift': 20,
       'minFin': 0,
       'minFinForced': False,
       'shiftPetition': {'actions': ['Change']},
       'clockings': [{'id': 85,
         'date': '2020-07-02T15:00:00.0000000',
         'idElem': 0,
         'type': 'timetypes',
         'idReader': 0,
         'user': 'Argentina',
         'ip': '172.18.4.24',
         'status': {'effective': True,
          'desc': 'Entrando',
          'state': '',
          'entering': True,
          'actions': ['Delete', 'Edit', 'Comment']},
         'app': True,
         'numDocuments': 0},
        {'id': 89,
         'date': '2020-07-02T18:30:00.0000000',
         'idElem': 0,
         'type': 'timetypes',
         'idReader': 0,
         'user': 'Argentina',
         'ip': '172.18.4.24',
         'status': {'effective': True,
          'desc': 'Saliendo',
          'state': '',
```

```
'entering': False,
          'actions': ['Delete', 'Edit', 'Comment']},
         'app': True,
         'numDocuments': 0}],
       'info': {'Change': 'Cambiar',
        'Delete': 'Eliminar',
        'Edit': 'Editar',
        'Comment': 'Comentar'}}
     0.0.20 Edit clocking
[98]: client.edit_clocking(employee=8, clocking_id=89, date="2020-07-02", time="20:
       →30")
[98]: {'ok': True}
     0.0.21 Delete clocking
[99]: client.delete_clocking(employee=8, clocking_id=89, date="2020-07-02", time="18:
       →30")
[99]: {'ok': True}
     0.0.22 Plannings
[80]: planning = client.get_create_form("Persona", action="NewPlanificacion")
      planning.update({
          "name": "Testing Planning",
          "allDay": True,
          "allDayId": 9, #Timetype ID
          "employee": [8], #Employee ID
          "dateInterval": client.get_days_offset(["2020-10-10", "2020-10-11"]),
      })
      # dateInterval is a list of int with differences between setting firstDate
      # can use get_days_offset() method
[78]: data = {
          "container": "IncidenciaFutura",
          "dataObj": planning,
      }
      client.save_element(**data)
[78]: [{'type': 6,
        'dataObject': {'id': 6,
         '_c_': 'IncidenciaFutura',
         'firstDay': '2020-10-10T00:00:00.0000000',
```

```
'rev': 54,
   'modifiedBy': 'Argentina',
   'modified': '2020-07-24T21:14:09.2941556+02:00',
   'createdBy': 'Argentina',
   'created': '2020-07-24T21:14:09.2631547+02:00',
   'allDayId': 9,
   'allDay': True,
   'selfOwner': False,
   'state': '0',
   'name': 'Testing Planning',
   'comments': '',
   'intState': 0,
   'isAccepted': True,
   'lastDay': '2020-10-11T00:00:00.0000000',
   'numDays': 2,
   'confirmBy': 'Argentina',
   'confirm': '2020-07-24T21:14:09.2781687+02:00',
   'describe': '2 días, del 10/10/2020 al 11/10/2020 Todo el día con incidencia
Enfermedad',
   'hasComment': False,
   'error': '',
   'stateDescription': 'Aceptada',
   'describeTT': 'Enfermedad',
   'isPending': False,
   'isValidationPending': False,
   'isDenied': False,
   'totalDocs': 0,
   'validatedDays': [],
   'dateInterval': [6127, 6128],
   'baValidElems': [1,
    2,
    3,
    4,
    5,
    6,
    7,
    8,
    9,
    10,
    11,
    12,
    13,
    14,
    15,
    16,
    17,
    18,
```

```
20,
          21,
          22,
          23,
          24],
         'timeTypes': [9],
         'nodesSource': [],
         'employee': 8},
        'message': 'El elemento se ha creado correctamente.',
        'showActions': True}]
     0.0.23 Add planning with summary method
[84]: # Delete last added element
      client.delete_element(container="IncidenciaFutura", elements=[6])
[84]: [{'type': 8,
        'id': 'BwAAAAEAAgeAAA==',
        'rev': 57,
        'message': 'Realizada la solicitud de eliminación.'}]
[85]: client.add_planning(
          employee=8,
          name="Testing summary planning",
          timetype=9,
          days=["2020-10-10", "2020-10-11"],
      )
[85]: [{'type': 6,
        'dataObject': {'id': 7,
         '_c_': 'IncidenciaFutura',
         'firstDay': '2020-10-10T00:00:00.0000000',
         'rev': 60,
         'modifiedBy': 'Argentina',
         'modified': '2020-07-24T21:40:11.0364860+02:00',
         'createdBy': 'Argentina',
         'created': '2020-07-24T21:40:10.9753242+02:00',
         'allDayId': 9,
         'allDay': True,
         'selfOwner': False,
         'state': '0',
         'name': 'Testing summary planning',
         'comments': '',
         'intState': 0,
         'isAccepted': True,
         'lastDay': '2020-10-11T00:00:00.0000000',
```

19,

```
'numDays': 2,
   'confirmBy': 'Argentina',
   'confirm': '2020-07-24T21:40:11.0063244+02:00',
   'describe': '2 días, del 10/10/2020 al 11/10/2020 Todo el día con incidencia
Enfermedad',
   'hasComment': False,
   'error': '',
   'stateDescription': 'Aceptada',
   'describeTT': 'Enfermedad',
   'isPending': False,
   'isValidationPending': False,
   'isDenied': False,
   'totalDocs': 0,
   'validatedDays': [],
   'dateInterval': [6127, 6128],
   'baValidElems': [1,
    2,
    3,
    4,
    5,
    6,
    7,
    8,
    9,
    10,
    11,
    12,
    13,
    14,
    15,
    16,
    17,
    18,
    19,
    20,
    21,
    22,
    23,
    24],
   'timeTypes': [9],
   'nodesSource': [],
   'employee': 8},
  'message': 'El elemento se ha creado correctamente.',
  'showActions': True}]
```

0.0.24 Edit planning

```
[124]: # search planning
       planning_query = nt6.Query(
          fields=["id", "name", "allDayId", ],
          filterExp="((this.employee.nif = '12345678') && (this.firstDay =__
       client.get_elements(container="IncidenciaFutura", query=planning_query)
[124]: {'total': 1,
        'items': [{'id': 7, 'name': 'Testing summary planning', 'allDayId': 9}]}
[125]: edit_planning = client.get_element_def(container="IncidenciaFutura",__
       \rightarrowelements=[7])
       edit_planning = edit_planning[0]
       edit_planning["dateInterval"]
[125]: [6127, 6128]
[126]: # ever fix employe; must be a list
       edit_planning["employee"] = [edit_planning.get("employee")]
       # apply your changes
       day_to_add = client.get_days_offset(["2020-10-12"])
       edit_planning["dateInterval"].extend(day_to_add)
       edit_planning["dateInterval"]
[126]: [6127, 6128, 6129]
[127]: response = client.save_element(
           container="IncidenciaFutura",
           elements=[7].
          dataObj=edit_planning
       response[0].get('message')
[127]: 'El elemento se ha modificado correctamente.'
      0.0.25 Disconnect
[128]: client.disconnect()
       client.is_connected
[128]: False
 []:
```