

## Коротка демонстрація роботи методів та програми в цілому

Початкове створення тестової варіації дерева:

```
using ptrFoundation = std::shared_ptr<Foundation>;

ptrFoundation root = std::make_shared<Folder>("root");
ptrFoundation folder1 = std::make_shared<Folder>("folder1");
ptrFoundation folder2 = std::make_shared<Folder>("folder2");
ptrFoundation folder3 = std::make_shared<Folder>("folder3");
ptrFoundation folder4 = std::make_shared<Folder>("folder4");
ptrFoundation folder5 = std::make_shared<Folder>("folder5");
ptrFoundation file1 = std::make_shared<File>("file1");
ptrFoundation file2 = std::make_shared<File>("file2");
ptrFoundation file3 = std::make_shared<File>("file3");
ptrFoundation file4 = std::make_shared<File>("file4");
ptrFoundation file5 = std::make_shared<File>("file5");

folder3->createElement(file1);
folder2->createElement(folder3);
folder1->createElement(file3);
folder1->createElement(folder4);
folder4->createElement(file4);
folder4->createElement(folder5);
folder5->createElement(file5);

root->createElement(folder1);
root->createElement(folder2);
root->createElement(file2);
```

```
I am a folder root(/root) 29.5.2022 20:17:16 Size=0
  I am a folder folder1(/root/folder1) 29.5.2022 20:17:16 Size=0
    i am a file file3(/root/folder1/file3) 29.5.2022 20:17:16 Size=136
    I am a folder folder4(/root/folder1/folder4) 29.5.2022 20:17:16 Size=0
      i am a file file4(/root/folder1/folder4/file4) 29.5.2022 20:17:16 Size=136
      I am a folder folder5(/root/folder1/folder4/folder5) 29.5.2022 20:17:16 Size=0
        i am a file file5(/root/folder1/folder4/folder5/file5) 29.5.2022 20:17:16 Size=136
    I am a folder folder2(/root/folder2) 29.5.2022 20:17:16 Size=0
      I am a folder folder3(/root/folder2/folder3) 29.5.2022 20:17:16 Size=0
        i am a file file1(/root/folder2/folder3/file1) 29.5.2022 20:17:16 Size=136
    i am a file file2(/root/file2) 29.5.2022 20:17:16 Size=136

FILE TREE WAS CREATED.
```

Пошук файлів за маскою, іменем та шляхом. Методи реалізовані таким чином, аби викликались відносно root директорії — яку завжди можна отримати через метод `getRoot()`.

```
Found file by path:
i am a file.folder5
i am a file.file5
Found file by name:
i am a file.file1
```

```
//Let's find a folder/file by its path
ptrFoundation byPathFile1 = root->getByPath(folder5->getPath());
std::cout << "Found file by path:\n"; byPathFile1->print();
//Let's find a folder/file by its name
ptrFoundation byNameFile1 = root->getByName("file1");
std::cout << "Found file by name:\n"; byNameFile1->print();
std::cout << "\n";
```

```
file2
file3
file4
file5
file5
```

```
//Searching by mask and receiving a multiset of matching elements
auto container = root->getByMask("(file[^ ]*)");

for (const auto& file : container) {
    std::cout << file->getName() << std::endl;
}
```

Переміщення файлу/папки до іншої

```
//We can move a folder/file to another folder
folder1->move(folder2);
std::cout << "After movement" << std::endl;
root->who();
```

До:

```
I am a folder root(/root) 29.5.2022 20:17:16 Size=0
I am a folder folder1(/root/folder1) 29.5.2022 20:17:16 Size=0
    i am a file file3(/root/folder1/file3) 29.5.2022 20:17:16 Size=136
    I am a folder folder4(/root/folder1/folder4) 29.5.2022 20:17:16 Size=0
        i am a file file4(/root/folder1/folder4/file4) 29.5.2022 20:17:16 Size=136
        I am a folder folder5(/root/folder1/folder4/folder5) 29.5.2022 20:17:16 Size=0
            i am a file file5(/root/folder1/folder4/folder5/file5) 29.5.2022 20:17:16 Size=136
    I am a folder folder2(/root/folder2) 29.5.2022 20:17:16 Size=0
        I am a folder folder3(/root/folder2/folder3) 29.5.2022 20:17:16 Size=0
            i am a file file1(/root/folder2/folder3/file1) 29.5.2022 20:17:16 Size=136
        i am a file file2(/root/file2) 29.5.2022 20:17:16 Size=136

FILE TREE WAS CREATED.
```

Після:

```
After movement
I am a folder root(/root) 29.5.2022 20:17:16 Size=0
I am a folder folder2(/root/folder2) 29.5.2022 20:17:16 Size=0
    I am a folder folder3(/root/folder2/folder3) 29.5.2022 20:17:16 Size=0
        I am a folder folder1(/root/folder2/folder1) 29.5.2022 20:17:16 Size=0
            i am a file file3(/root/folder2/folder1/file3) 29.5.2022 20:17:16 Size=136
            I am a folder folder4(/root/folder2/folder1/folder4) 29.5.2022 20:17:16 Size=0
                i am a file file4(/root/folder2/folder1/folder4/file4) 29.5.2022 20:17:16 Size=136
                I am a folder folder5(/root/folder2/folder1/folder4/folder5) 29.5.2022 20:17:16 Size=0
                    i am a file file5(/root/folder2/folder1/folder4/folder5/file5) 29.5.2022 20:17:16 Size=136
            i am a file file2(/root/file2) 29.5.2022 20:17:16 Size=136
```

## Копіювання файлу/папки до іншої

```
//We can copy a folder/file to another folder
std::cout << "After copying" << std::endl;
folder5->copy(folder2, "cloned");

root->who();
```

До:

```
I am a folder root(/root) 29.5.2022 20:17:16 Size=0
  I am a folder folder1(/root/folder1) 29.5.2022 20:17:16 Size=0
    i am a file file3(/root/folder1/file3) 29.5.2022 20:17:16 Size=136
    I am a folder folder4(/root/folder1/folder4) 29.5.2022 20:17:16 Size=0
      i am a file file4(/root/folder1/folder4/file4) 29.5.2022 20:17:16 Size=136
        I am a folder folder5(/root/folder1/folder4/folder5) 29.5.2022 20:17:16 Size=0
          i am a file file5(/root/folder1/folder4/folder5/file5) 29.5.2022 20:17:16 Size=136
    I am a folder folder2(/root/folder2) 29.5.2022 20:17:16 Size=0
      I am a folder folder3(/root/folder2/folder3) 29.5.2022 20:17:16 Size=0
        i am a file file1(/root/folder2/folder3/file1) 29.5.2022 20:17:16 Size=136
      i am a file file2(/root/file2) 29.5.2022 20:17:16 Size=136

FILE TREE WAS CREATED.
```

Після:

```
After copying
I am a folder root(/root) 29.5.2022 20:17:16 Size=0
  I am a folder folder2(/root/folder2) 29.5.2022 20:17:16 Size=0
    I am a folder folder3(/root/folder2/folder3) 29.5.2022 20:17:16 Size=0
    I am a folder folder1(/root/folder2/folder1) 29.5.2022 20:17:16 Size=0
      i am a file file3(/root/folder2/folder1/file3) 29.5.2022 20:17:16 Size=136
      I am a folder folder4(/root/folder2/folder1/folder4) 29.5.2022 20:17:16 Size=0
        i am a file file4(/root/folder2/folder1/folder4/file4) 29.5.2022 20:17:16 Size=136
        I am a folder folder5(/root/folder2/folder1/folder4/folder5) 29.5.2022 20:17:16 Size=0
          i am a file file5(/root/folder2/folder1/folder4/folder5/file5) 29.5.2022 20:17:16 Size=136
      I am a folder cloned(/root/folder2/cloned) 29.5.2022 20:17:16 Size=0
        i am a file file5(/root/folder2/cloned/file5) 29.5.2022 20:17:16 Size=136
    i am a file file2(/root/file2) 29.5.2022 20:17:16 Size=136
```