# Project 5

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## 1.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

# Chapter 2

# Class Documentation

## 2.1 cFSS Class Reference

### Public Member Functions

- cFSS (string fname)

  *A constructor.*
- ∼cFSS ()

  *A destructor.*
- float Makespan (vector< int > Schedule)

  *A normal member taking in the schedule and number of jobs and returning the makespan.*
- int GetJobs ()

  *Returns the number of jobs.*
- int GetMachines ()

  *Returns the number of machines.*
- float **Max** (float, float)
- void **Initialize** ()
- float ** **getProcessTime** ()

### 2.1.1 Constructor & Destructor Documentation

#### 2.1.1.1 cFSS()

```
cFSS::cFSS (
            string fname )
```

A constructor.

Constructs the FSS class, and assigns the values.

#### 2.1.1.2 ~cFSS()

```
cFSS::~cFSS ( )
```

A destructor.

Clears the memory.

### 2.1.2 Member Function Documentation

#### 2.1.2.1 GetJobs()

```
int cFSS::GetJobs ( )
```

Returns the number of jobs.

**Parameters**

| | |
|---|---|
| *no* | parameters |

**Returns**

The number of jobs

#### 2.1.2.2 GetMachines()

```
int cFSS::GetMachines ( )
```

Returns the number of machines.

**Parameters**

| | |
|---|---|
| *no* | parameters |

**Returns**

The number of machines

#### 2.1.2.3 Makespan()

```
float cFSS::Makespan (
            vector< int > Schedule )
```

A normal member taking in the schedule and number of jobs and returning the makespan.

**Parameters**

| | |
|---|---|
| *the* | schedule |

**Returns**

The cost of the tours

The documentation for this class was generated from the following files:

- FSS.h
- FSS.cpp

## 2.2 cFSSB Class Reference

### Public Member Functions

- cFSSB (string fname)

  *A constructor.*
- ∼cFSSB ()

  *A destructor.*
- float Makespan (vector< int > Schedule)

  *A normal member taking in the schedule and number of jobs and returning the cost.*
- int GetJobs ()

  *Returns the number of jobs.*
- int GetMachines ()

  *Returns the number of machines.*
- void **Initialize** ()

### 2.2.1 Constructor & Destructor Documentation

#### 2.2.1.1 cFSSB()

```
cFSSB::cFSSB (
            string fname )
```

A constructor.

Constructs the FSSB class, and assigns the values.

#### 2.2.1.2 ~cFSSB()

```
cFSSB::~cFSSB ( )
```

A destructor.

Clears the memory.

### 2.2.2 Member Function Documentation

#### 2.2.2.1 GetJobs()

```
int cFSSB::GetJobs ( )
```

Returns the number of jobs.

**Parameters**

| | |
|---|---|
| *no* | parameters |

**Returns**

The number of jobs

#### 2.2.2.2 GetMachines()

```
int cFSSB::GetMachines ( )
```

Returns the number of machines.

**Parameters**

| | |
|---|---|
| *no* | parameters |

**Returns**

The number of machines

#### 2.2.2.3 Makespan()

```
float cFSSB::Makespan (
            vector< int > Schedule )
```

A normal member taking in the schedule and number of jobs and returning the cost.

**Parameters**

| | |
|---|---|
| *A* | flowshop schedule |

**Returns**

The makespan value

The documentation for this class was generated from the following files:

- FSSB.h
- FSSB.cpp

## 2.3 cFSSNW Class Reference

### Public Member Functions

- cFSSNW (string fname)
  *A constructor.*
- ∼cFSSNW ()
  *A destructor.*
- float Makespan (vector< int > Schedule)
  *A normal member taking in the schedule and number of jobs and returning the cost.*
- int GetJobs ()
  *Returns the number of jobs.*
- int GetMachines ()
  *Returns the number of machines.*
- void **Initialize** ()

### 2.3.1 Constructor & Destructor Documentation

#### 2.3.1.1 cFSSNW()

```
cFSSNW::cFSSNW (
            string fname )
```

A constructor.

Constructs the FSSNW class, and assigns the values.

#### 2.3.1.2 ~cFSSNW()

```
cFSSNW::~cFSSNW ( )
```

A destructor.

Clears the memory.

### 2.3.2 Member Function Documentation

#### 2.3.2.1 GetJobs()

```
int cFSSNW::GetJobs ( )
```

Returns the number of jobs.

**Parameters**

| | |
|---|---|
| *no* | parameters |

**Returns**

The number of jobs

#### 2.3.2.2 GetMachines()

```
int cFSSNW::GetMachines ( )
```

Returns the number of machines.

**Parameters**

| | |
|---|---|
| *no* | parameters |

**Returns**

The number of machines

#### 2.3.2.3 Makespan()

```
float cFSSNW::Makespan (
            vector< int > Schedule )
```

A normal member taking in the schedule and number of jobs and returning the cost.

**Parameters**

| | |
|---|---|
| *A* | flowshop schedule |

**Returns**

The makespan value

The documentation for this class was generated from the following files:

- FSSNW.h
- FSSNW.cpp

## 2.4 NEHAlgorithm Class Reference

### Public Member Functions

- NEHAlgorithm (string fname)
  *A constructor.*
- ∼NEHAlgorithm ()
  *A destructor.*
- int ∗ sortbyTime ()
  *Returns An array of sorted jobs.*
- vector< int > sortFSSbyTime (vector< int > sequence, int nextIndex)
  *A normal member taking in the scheduleand the current index of the job and returning optimal job order.*
- vector< int > sortFSSBbyTime (vector< int > sequence, int nextIndex)
  *A normal member taking in the scheduleand the current index of the job and returning optimal job order.*
- vector< int > sortFSSNWbyTime (vector< int > sequence, int nextIndex)
  *A normal member taking in the scheduleand the current index of the job and returning optimal job order.*
- float runFSSAlgorithm ()
  *Returns The Makespan for FSS Algorithm.*
- float runFSSBAlgorithm ()
  *Returns The Makespan for FSSB Algorithm.*
- float runFSSNWAlgorithm ()
  *Returns The Makespan for FSSNW Algorithm.*

### 2.4.1 Constructor & Destructor Documentation

#### 2.4.1.1 NEHAlgorithm()

```
NEHAlgorithm::NEHAlgorithm (
            string fname )
```

A constructor.

Constructs the NEHAlgorithmclass, and assigns the values.

**Parameters**

| | |
|---|---|
| *The* | name of the file of which to read from. |

#### 2.4.1.2 ~NEHAlgorithm()

```
NEHAlgorithm::~NEHAlgorithm ( )
```

A destructor.

Clears the memory.

### 2.4.2 Member Function Documentation

#### 2.4.2.1 runFSSAlgorithm()

```
float NEHAlgorithm::runFSSAlgorithm ( )
```

Returns The Makespan for FSS Algorithm.

**Parameters**

| | |
|---|---|
| *no* | parameters |

**Returns**

The Makespan for FSS Algorithm

#### 2.4.2.2 runFSSBAlgorithm()

```
float NEHAlgorithm::runFSSBAlgorithm ( )
```

Returns The Makespan for FSSB Algorithm.

**Parameters**

| | |
|---|---|
| *no* | parameters |

**Returns**

The Makespan for FSSB Algorithm

#### 2.4.2.3 runFSSNWAlgorithm()

```
float NEHAlgorithm::runFSSNWAlgorithm ( )
```

Returns The Makespan for FSSNW Algorithm.

**Parameters**

| *no* | parameters |
|---|---|

**Returns**

The Makespan for FSSNW Algorithm

#### 2.4.2.4 sortbyTime()

```
int * NEHAlgorithm::sortbyTime ( )
```

Returns An array of sorted jobs.

**Parameters**

| *no* | parameters |
|---|---|

**Returns**

An array containing the jobs sorted from largest to smallest

#### 2.4.2.5 sortFSSBbyTime()

```
vector< int > NEHAlgorithm::sortFSSBbyTime (
            vector< int > sequence,
            int nextIndex )
```

A normal member taking in the scheduleand the current index of the job and returning optimal job order.

**Parameters**

| | |
|---|---|
| *A* | flowshop schedule |
| *the* | current job index |

**Returns**

The optimal job order for FSSB

#### 2.4.2.6 sortFSSbyTime()

```
vector< int > NEHAlgorithm::sortFSSbyTime (
            vector< int > sequence,
            int nextIndex )
```

A normal member taking in the scheduleand the current index of the job and returning optimal job order.

**Parameters**

| | |
|---|---|
| *A* | flowshop schedule |
| *the* | current job index |

**Returns**

The optimal job order for FSS

#### 2.4.2.7 sortFSSNWbyTime()

```
vector< int > NEHAlgorithm::sortFSSNWbyTime (
            vector< int > sequence,
            int nextIndex )
```

A normal member taking in the scheduleand the current index of the job and returning optimal job order.

**Parameters**

| | |
|---|---|
| *A* | flowshop schedule |
| *the* | current job index |

**Returns**

The optimal job order for FSSNW

The documentation for this class was generated from the following files:

- NEHAlgorithm.h
- NEHAlgorithm.cpp

## 2.5 strs Struct Reference

Struct for sorting jobs.

`#include <NEHAlgorithm.h>`

### Public Attributes

- float **value**
- int **index**

### 2.5.1 Detailed Description

Struct for sorting jobs.

**Parameters**

| | |
|---|---|
| *sum* | of the execution time of the job on all machines |
| *Job* | Number |

**Returns**

A struct

The documentation for this struct was generated from the following file:

- NEHAlgorithm.h

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