

ICEACE Reference Manual

Bulent Ozel - bulent.ozel@gmail.com

April 1, 2013

Contents

| | | |
|----------|------------------------------------|----------|
| 1 | ICEACE FLAME Implementation | 2 |
| 1.1 | Firm | 2 |
| 1.2 | Household | 2 |
| 1.3 | Bank | 3 |
| 1.4 | Government | 4 |
| 1.5 | CentralBank | 4 |
| 1.6 | Messages | 5 |
| 1.7 | Constants | 5 |
| 1.8 | Datatypes | 5 |

1 ICEACE FLAME Implementation

1.1 Firm

Table 1: List of memory variables for Firm agent.

| Name | Description |
|-------------------------|---|
| int id | Agent ID. |
| int bank_id | Bank ID at which the agent maintains its payment account. |
| int day_of_month_to_act | The day of the month to act |
| int_array employees | Holds employee ids |
| double wage_offer | Monthly wage offer. |
| int no_employees | Number of employees |
| int vacancies | Number of vacancies |
| int employees_needed | Number of workers a firm needs for next production |

Table 2: List of functions for Firm agent.

| Name | Description |
|-------------------------------------|--|
| firm_notifier | Notifies its id by printf. |
| firm_consumption_dummy | A dummy stub function. |
| idle | Labour market is not active. |
| firm_labour_workforce_needed | The firm computes required number of employees needed for incoming month. |
| idle | Firm does nothing |
| firm_labour_fire | The firm decides to fire if employee needed is below number of employees it does have. |
| firm_labour_job_announcement | The agent posts available positions. |
| firm_labour_job_offer | The agent takes applications and makes offer. |
| firm_labour_update | The agent updates labour status. In case of resignments. |
| firm_labour_job_announcement_stage2 | The agent posts unfilled positions. |
| idle | The agent has no vacant positions |
| firm_labour_job_offer_stage2 | The agent takes applications and makes offer. |

1.2 Household

Table 3: **List of memory variables for Household agent.**

| Name | Description |
|--------------------------------|---|
| int id | Agent ID. |
| int bank_id | Bank ID at which the agent maintains its payment account. |
| int my_employer_id | Employer ID of an household. A 0 means unemployed. |
| double wage | Current wage earned. |
| int day_of_month_to_act | The day of the month to act for seeking a job. |
| int day_of_month_wage_recieved | The day of the month to wage recieved. |
| int previous_wages | Holds wages earned in three previous months. |

Table 4: **List of functions for Household agent.**

| Name | Description |
|---|---|
| household_notifier | Notifies its id by printf. |
| household_consumption_dummy | A dummy stub function. |
| idle | Job searching is not active. |
| household_labour_check_fired | Household checks layout status. |
| household_labour_reemployment_application | Stage 01 of job applications. Already employed households apply with a turnover probability |
| idle | Stage 01 of job applications. Unemployed households skip this stage |
| household_labour_turnover | A job turnover. |
| household_labour_employment_application | Stage 02 of job market. Unemployed households apply. |
| household_labour_employment | A new employment. |
| idle | Does nothing at the point when it is not last day of the month. |
| household_labour_recieve_wage | Recieves payment and update wage history. |

1.3 Bank

Table 5: **List of memory variables for Bank agent.**

| Name | Description |
|--------|-------------|
| int id | Agent ID. |

Table 6: **List of functions for Bank agent.**

| Name | Description |
|------------------------|----------------------------|
| bank_notifier | Notifies its id by printf. |
| bank_consumption_dummy | A dummy stub function. |
| bank_labour_dummy | A dummy stub function. |

1.4 Government

Table 7: **List of memory variables for Government agent.**

| Name | Description |
|--------|-------------|
| int id | Agent ID. |

Table 8: **List of functions for Government agent.**

| Name | Description |
|------------------------------|----------------------------|
| government_notifier | Notifies its id by printf. |
| government_consumption_dummy | A dummy stub function. |
| government_labour_dummy | A dummy stub function. |

1.5 CentralBank

Table 9: **List of memory variables for CentralBank agent.**

| Name | Description |
|--------|-------------|
| int id | Agent ID. |

Table 10: **List of functions for CentralBank agent.**

| Name | Description |
|-------------------------------|----------------------------|
| centralbank_notifier | Notifies its id by printf. |
| centralbank_consumption_dummy | A dummy stub function. |
| centralbank_labour_dummy | A dummy stub function. |

1.6 Messages

See Table 11.

Table 11: **List of messages.**

| Name | Description |
|------------------------|--|
| fired | Sent by a firm to notify an employee who is fired. |
| int employee_id | Employee ID who has been fired. |
| vacancy | Sent by a Firm to post a vacancy. |
| int employer_id | Firm agent ID who posts a new position. |
| double wage | Amount of salary to be offered. |
| job_application | Sent by an household to apply a posted vacancy. |
| int employee_id | Household agent ID who applies a new job. |
| int employer_id | Firm agent ID who has announced the position. |
| job_offer | Sent by a firm informing a filled position. |
| int employer_id | Firm agent ID that has filled a post. |
| int employee_id | Household agent ID who has been offered a position. |
| double wage | Amount of salary that is offered. |
| job_change | Sent by a worker to notify a resigned position. |
| int employer_id | Firm agent ID of the position held. |
| int employee_id | Household agent ID who is changing the job. |
| vacancy_stage2 | Sent by a Firm to post unfilled vacancy. |
| int employer_id | Firm agent ID who posts unfilled position. |
| double wage | Amount of salary to be offered. |
| job_application_stage2 | Sent by an unemployed household to apply a posted vacancy. |
| int employee_id | Household agent ID who applies to a job. |
| int employer_id | Firm agent ID who has re-announced the position. |
| job_offer_stage2 | Sent by a firm informing a filled position. |
| int employer_id | Firm agent ID that has filled a post. |
| int employee_id | Household agent ID who has been offered a position. |
| double wage | Amount of salary that is offered. |

1.7 Constants

Table 12: **List of constants.**

| Name | Description |
|-------------|--|
| double beta | A threshold value denoting expenditure on housing, as a proportion of total income |

1.8 Datatypes

Table 13: **List of attributes for ADTs.**

| Name | Description |
|-------------|--------------------|
|-------------|--------------------|