

Living City, a Collaborative Browser-based Massively Multiplayer Online Game

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Distributed Simulation & Online gaming (DISIO), 2010

Outline

1 Motivation

- The Basic Problem That We Studied
- Previous Work

2 Our Results/Contribution

- Design & Evaluation
- Main Results

3 Appendix

- Game Screenshots

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What Living City Is, And What Is Not

An Overview on Living City Features [1]

Living City is:

- A -Massively- Multiplayer Online Game
- A Collaborative 'Simulation'
- Browser-based (No Client Installation)
- Persistent & Real-time

Living City is not:

- A 3D Virtual World
- A Flash Game

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BB-MMOG? A Viable Solution

An Overview on Living City Features [2]

Why a Browser-based MMOG?

- Availability
- Business Model
- Accessibility
- Architectural Requirements
- Performances
- Limited Development Efforts

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Related Work On MMOG

- Focusing on Architectural Issues:
 - Distribution Techniques
 - Load Balancing
 - Persistence
- Focusing on Software Engineering:
 - Usability
 - Performances Measurement
 - Services Platform
- Focusing on Design and Evaluation:
 - ???

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Key Aspects [1] - Game Concept

Our Ideas? Focusing Game Concept on:

- Involving Players in a Simulated Virtual World with Enjoying Mechanics
- Emphasizing the Social Aspect and Social Interactions
- Encouraging Collaboration and Cooperations between Individuals
- Exploiting Management Skills of Players

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Key Aspects [2] - Gameplay

Each player represents the Mayor of a virtual city:

- Recruitment and Managing of the Staff (e.g. Deputy Mayor, PR, HR, Engineers, Technicians, Administrators, etc.)
 - Hiring-Firing, Covering Empty Positions
 - Activities Configuration
 - Handling Emergencies
- Managing Providing of Services To the Virtual Population
- Economics (e.g. Taxes, In/Outcomes, Investments, etc.)
- Developing the City, Starting Building Constructions (e.g. Residential Areas, Commercials, Industrials, Publics, Facilities, Transports, Tourism, etc.)
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Simulation

Simulation of Time Passing [1]

$$RequiredTimeAtStage(x) = RequiredTimeAtStage(x - 1)^{\alpha}$$

Class	Required Time	α
I	$90 \leq RequiredTimeAtStage(1) < 300$	1.06
II	$300 \leq RequiredTimeAtStage(1) < 600$	1.055
III	$600 \leq RequiredTimeAtStage(1) < 1200$	1.05
IV	$1200 \leq RequiredTimeAtStage(1) < 1800$	1.045
V	$RequiredTimeAtStage(1) \geq 1800$	1.04

$$\begin{aligned}
 MinTime &= \sum_{k=1}^{kMax=147} \sum_{x=1}^{xMax=12} RequiredTimeAtStage(x, k) \\
 &= 27978980,96 \text{ sec.} = 7771,95 \text{ h.} \approx 324 \text{ days.}
 \end{aligned}$$

Simulation

Simulation of Time Passing [2]

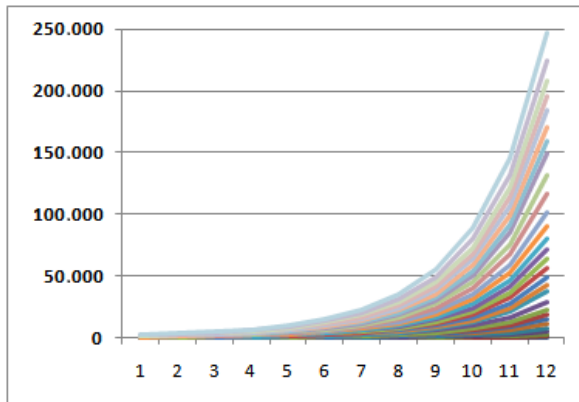


Figure: RequiredTimeAtStage(x) as Function of Stages

Simulation

Simulation of Time Passing [3]

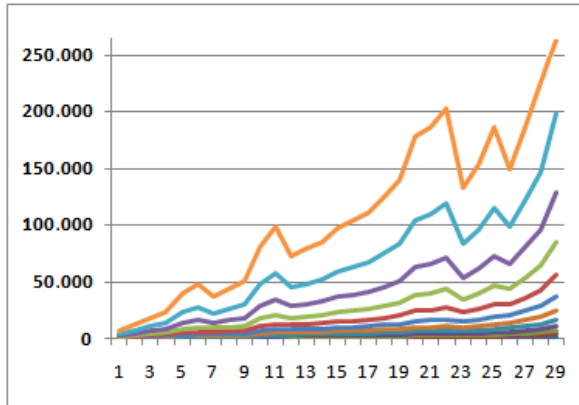


Figure: RequiredTimeAtStage(x) as F. of Building Completion Times

Simulation

Balancing Economy [1]

$$BuildingCostAtStage(x) = BuildingCostAtStage(x - 1) \cdot \beta$$

$$\beta = 0.15 - \frac{BuildingCostAtStage(1) \cdot (0.15 - 0.10)}{(387500 - 2000)}$$

$$S = \sum_{x=2}^{12} BuildingCostAtStage(x)$$

As proved, with $\beta \in [0.10, 0.15]$, we obtain:

$$\frac{3}{2} < \frac{S}{BuildingCostAtStage(1)} < 4$$

Simulation

Balancing Economy [2]

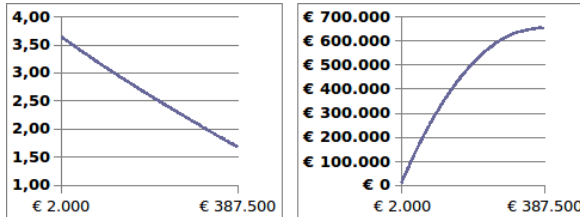


Figure: $\frac{S}{\text{BuildingCostAtStage}(1)}$ and S Function

Simulation

Balancing Economy [3]

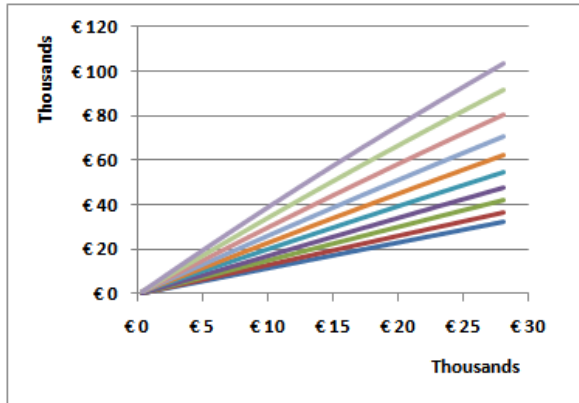


Figure: BuildingCostAtStage(3..12) as F. of BuildingCostAtStage(2)

Business Logic

Cheating Avoidance [1]

Technique: SQL Injection

Inserting destructive or spoiling SQL commands through a smart tampering of natural SQL commands sent from the client, thus directly compromising the database layer integrity.

SQL Injection Avoidance

Countermeasures:

- Views and Structural Hiding at the DBMS Layer
- Parameterized Statements and Input Preprocessing at the Business Logic Layer

Business Logic

Cheating Avoidance [2]

Technique: Simultaneously Buildings

Instantiating multiple execution of mutually exclusive operations on the same game account from multiple instances of the Web browser (or multiple browsers).

Simultaneously Buildings Avoidance

Countermeasures:

- Asynchronous Logical Check Procedures through AJAX
- Referential Integrity at the DBMS Tier

Business Logic

Handling Concurrency

Problem: Handling Concurrency

Avoiding that the same resource could be simultaneously awarded by two or more players (e.g. Fixed Price Call for Tenders, Recruitment of Staff Members, Acquiring Services).

Solutions

- AJAX is efficiently used to:
 - Asynchronously update available resources
 - Asynchronously check resources availability
- DBMS Locking and Rollbacks also implemented

Architecture

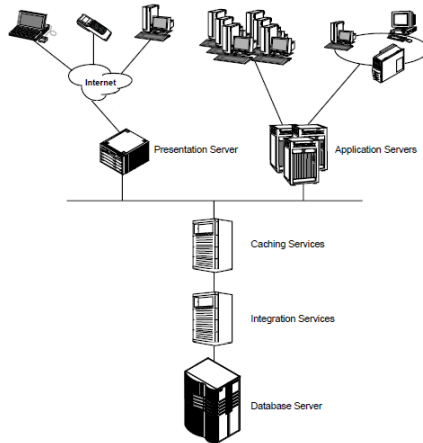


Figure: Scalable N-tier Architecture

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Main Results

Analysis of Users' Activity [1]

Data acquired during the period January-December 2009:

- 10K+ Registered New Players
- 165K+ Web Visitors (6% conversion rate)
- 29% of Daily Traffic Comes From New Players
- 3M+ Provided Web Pages, avg. 16 per Visit
- 3 avg. Daily Visits for Each Player, 10+ avg. Min. per Visit

Hint:

- Encouraging Data! Think about is an Italian Beta Version!

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Analysis of Users' Activity [2]

In-game Users' Activity:

- 190K+ Buildings (19+ avg./player)
- 75K+ Call for Tenders (7+ avg./player)
- 8K+ Offers for Tenders (<1 avg./player)
- 11K+ Services Provided (1+ avg./player)
- 120K+ Staff Member Employed (12+ avg./player)
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- To Improve: Some Features are not Fully Discovered by Players

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Analysis of Social Interactions

Use of Social Tools:

- 2K+ Personal Messages Between Players
- 600+ Threads on Forum
- 3K+ Posts on Forum (avg. 5 Post/Thread)
- Less than 6% of Unreplied Threads

Hint:

- Encouraging Data! Players like Socializing in games.
- Open question: moving to Social Networks (FB) could give a notable boost? Could improve the game experience?

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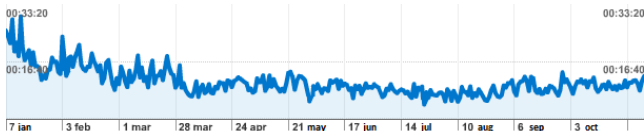
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Analysis of Distribution of Time spent in Playing

Average amount of time spent in game:



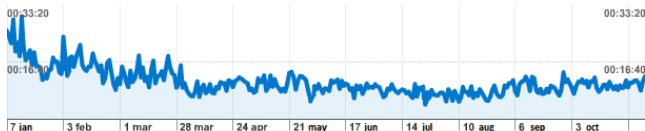
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- Open question: Should be more involving?

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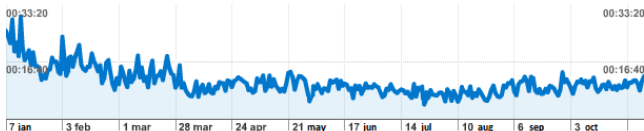
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Social And Psychological Aspects

Klimmt et al.¹:

- 'Competition, in contrast, seems to be less important for browser gamers than for users of other game types'.

Our experience:

- In BB-MMOGs players like cooperation and collaboration together with competition to tackle game challenges (e.g. concurring for fame and climbing rankings).

Hint:

- Open question: 'Selfish Collaboration'? 'Self-interest Cooperation'?

¹C. Klimmt, H. Schmid, and J. Orthmann. Exploring the enjoyment of playing browser games. *CyberPsychology and Behavior*, 12(2):231-234, 2009.

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Summary

- **BB-MMOGs** are a viable solution!
- **Cooperation Vs. Competition?** An open question!
- **Social aspects:** the key to involve players!
- Outlook
 - Internationalization
 - New game mechanics which stuck the most of users in front of the game.
 - Improve social aspects and introduce in-game alliances and hierarchies.

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Outgoing Mail - SMTP
Want The Ultimate Solution For
Sending Your Email?
www.AuthSMTP.com

Web Performance Tool
Easy to use and Powerful. Monitors,
Reporting, SSL, IP Spoofing
www.neotys.com

Cache .NET Session-State
Transparent distributed caching
scales performance. Free
download!
www.scaleoutsoftware.com

Ads by Google

LIVING CITY

Governa la tua città

Guida Forum Classifica Banner Premium Community

Username:

Password:

Statistiche dal mondo

Giocatori Iscritti: 1
Giocatori OnLine: 1

Chi sta vincendo ?

Sindaco	Città	Punti
SPARTACVS	ROMA	2258,2
Henry	Las Vegas	2106,2
Simonaki	San Fruttuoso	2020,9
Pepito	Aperiplo	1750,9
Sbezzeputi	Paperopoli	1598,0
Crapanzano		



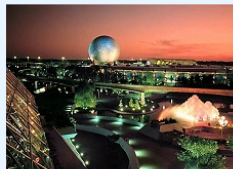
LivingCity

*il browser game in cui
governi la tua città !*

© Living City - Contatti e Sviluppatori - Gioki.org - Giochi in flash gratis da giocare online

Beneventum

Categoria: Centro Urbano



Distribuzione popolazione

Residenti:	14335	Senzatetto:	17 (0,12%)	Studenti:	3112 (21,71%)	Lavoratori:	8643 (60,29%)
Disoccupati:	704 (4,91%)	Pensionati:	1859 (12,97%)			(Giovani imprenditori)	3672

Legge e salute

Fuorilegge	12 (0,08%)	Scontenti	247 (1,72%)	Malati	97 (0,68%)
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Conformazione del territorio

Pianura	43%	Montagna	51%	Mare	6%	Disponibilità economica	€ 12.953.004,94
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Parametri attuali		Per il level up		Altri requisiti attuali		Per il level up	
Ambiente:	14		min. 11	Posti residenziali:	17110		min. 24000
Commercio:	15		min. 10	Residenti:	14335		min. 20000
Diplomazia:	5		min. 7	Licenze vendute:	8		min. 11
Energia:	16		min. 14	Rend. medio staff:	Eccezionale		min. Impressionante
Istruzione:	13		min. 15	Servizi Erogati:	0		
Lavoro:	12		min. 11	Qualità media:			
Sanità:	12		min. 9				
Sicurezza:	17		min. 10				
Turismo:	12		min. 11				
Viabilità:	14		min. 14				
TOTALE:	130,00		min. 140,00				

Benvenuto Trolvich, sei il sindaco di: **Beneventum**! Buon lavoro!



Staff e Contatti

Gruppi di lavoro:	Sublime	Efficienza:	Impressionante
Umore:	Incredibile		

Dettagli sullo staff

Quadro tecnico:	Celestiale	Risorse umane:	Celestiale
Quadro economico:	Celestiale	Mobilità:	Celestiale
Pubbliche relazioni:	Celestiale	Sicurezza personale:	Decente

Dettagli sui contatti

Rapporti con il settore pubblico:	Interessante	Rapporti con il settore amministrativo:	Interessante
Rapporti con il settore privato:	Piacevole	Rapporti con il settore militare:	Piacevole
Rapporti con la malavita:	Eccezionale		

Ruolo: Addetto P.R. ▼

Visualizza 10 ▼ risultati ([Visualizza filtri di ricerca](#))



Nominativo	Età	Ruolo	Sesso	Stipendio	
Guenda Zen	54 anni	Addetto P.R.	♀	2427,81 €	 
Lena Bompiani	51 anni	Addetto P.R.	♀	2427,81 €	 
Apollina De Curtis	54 anni	Addetto P.R.	♀	2389,78 €	 
Giocondo Carcangiu	38 anni	Addetto P.R.	♂	2351,78 €	 
Callisto Macrini	57 anni	Addetto P.R.	♂	2237,94 €	 
Irma Napolitano	54 anni	Addetto P.R.	♀	2200,05 €	 
Elda Pace	50 anni	Addetto P.R.	♀	1974,89 €	 
Annibale Scocco	52 anni	Addetto P.R.	♂	1940,09 €	 
Adalgiso Minichillo	41 anni	Addetto P.R.	♂	1905,32 €	 
Aldobrando Lecchini	57 anni	Addetto P.R.	♂	1905,32 €	 



Assumi Staff Personale del Sindaco

?

Consulta la

Ruolo: Addetto

Visualizza 10

Nominativo

Guenda Zen

Lena Bompiani

Apollina De Curi

Giocondo Carca

Callisto Macrini

Irma Napolitano

Elda Pace

Annibale Scocco

Adalgiso Minich

Aldobrando Lecchini

Staff: Scheda di valutazione dell'impiegato

Irma Napolitano

(54anni)

Stipendio richiesto: 2200,05 €

Ruolo: Addetto P.R.

Attualmente non assunto da nessuno!

Caratteristiche

Volontà (forza di spirito, carattere):	Celestiale	Lavoro in team:	Inesistente
Competenze tecniche:	Decente	Competenze umane:	Deludente
Innovazione:	Aberrante	Spinta al miglioramento e motivazione:	Strabiliante
Capacità di concentrazione:	Scadente	Intuito:	Eccezionale
Potenziale:	Strabiliante	Qualità:	Celestiale

?

Consulta la guida di questa sezione!

Abilità di maggior rilievo

Tecnici, Analisti, Legali, Segretario generale: competenze tecniche

Collaboratori, Membri della Giunta, Vicesindaco: competenze umane

57 anni

Addetto P.R.

1905,32 €

attacco!

meArt Studio

avvitar nerit

unici coccia

1 2 3 4 5

E. Ferrara, G. Fiumara, F. Pagano

Living City, a Collaborative Browser-based MMOG

 Addetti Marketing

Seleziona impiegato: Albino Cheli ▼

Albino Cheli

(34anni) 

Stipendio richiesto: 1870,57€

Assunto il: 14/05/2009 22.54

Gruppo di lavoro: Addetti Marketing



Imposta attività		Rendimento	
Atteggimento lavorativo:	Normale ▼	Lavoro nel gruppo:	Abissale
Attività sul lavoro:	Pianificare strategie ▼	Efficienza:	Abissale
Attività extralavorative:	Leggere ▼	Umore:	Insufficiente
Comportamento		Licenziamento	
Nel gruppo di lavoro:	Amichevole ▼	 Se non sei soddisfatto del rendimento del tuo impiegato puoi licenziarlo!	

[Il suo blog](#)

Forse non mi sto impegnando abbastanza nel mio lavoro?

Non riesco a capacitarmi di come possa dare fastidio a tutti il fatto che io sia così disponibile e amichevole nei loro confronti. Lo reputo inaccettabile.



Imposte		Stanzamenti	
Pressione fiscale:	7 %	<u>Pensioni, istruzione, sanità e sicurezza pubblica</u>	
Tasse sulle attività commerciali:	7 %	Pensioni:	80,0 %
Tasse sull'industria:	7 %	Istruzione:	100,0 %
<u>Manutenzioni</u>		Sanità:	100,0 %
<u>Spese di manutenzione e gestione</u>		Sicurezza:	100,0 %
Sistema elettrico:	100,0 %	<u>Sovvenzioni</u>	
Sistema idraulico:	100,0 %	Studenti:	100,0 %
Sistema fognario e rifiuti:	100,0 %	Disoccupati:	70,0 %
Viabilità:	100,0 %	Senzatetto:	60,0 %
		Giovani imprenditori:	100,0 %




Bilancio		Distribuzione Popolazione	
Tasse residenti:	€ 1.010.450,00	Residenti:	14435
Tasse attività commerciali:	€ 1.694.346,00	Senzatetto:	4 (0,03%)
Tasse attività industriali:	€ 1.694.346,00	Studenti:	3112 (21,56%)
TOTALE:	€ 4.399.142,00	Lavoratori:	8643 (59,88%)
Spese pubbliche		(Giovani imprenditori)	3672
Pensioni:	€ 520.520,00	Disoccupati:	704 (4,88%)
Sovv. Studenti:	€ 155.600,00	Pensionati:	1859 (12,88%)
Sovv. Disoccupati:	€ 73.920,00	Legge e Salute	
Sovv. Senzatetto:	€ 360,00	Fuorilegge	58 (0,40%)
Sovv. Giovani imprenditori:	€ 367.200,00	Scontenti	904 (6,26%)
TOTALE:	€ 1.117.600,00	Malati	434 (3,01%)
Rendimento		Qualità del lavoro	
Sistema elettrico:	100,00 %	Stipendio medio:	€ 920,21
Sistema idraulico:	100,00 %	Spese Manutenzione	
Sistema fognario e rifiuti:	100,00 %	Sistema elettrico:	€ 150.000,00
Istruzione:	100,00 %	Sistema idraulico:	€ 70.000,00
Sanità:	100,00 %	Sistema fognario e rifiuti:	€ 35.000,00
Sicurezza:	100,00 %	Istruzione:	€ 185.000,00
Viabilità:	100,00 %	Sanità:	€ 177.000,00
		Sicurezza:	€ 73.500,00
		Viabilità:	€ 148.500,00
		TOTALE:	€ 839.000,00

 [Consulta la guida su questa sezione!](#)

Servizio	Dettagli erogatore
Servizio di sicurezza viabile	Non stai erogando ancora questo servizio.
Tipologia	Eroga
Trasporti [Centro Urbano]	Non hai servizi di questo tipo da erogare. Indici una gara d'appalto!
Dettagli erogazione	Indici gara d'appalto
Richiesto il: 17/05/2009 2.20	Prezzo base di gara: Rendimento minimo:
Scade il: 29/05/2009 2.20	0% 
Valore del servizio: € 36726,13	

Servizio	Dettagli erogatore
Pianificazione Scavi Substradali per Metropolitana	Non stai erogando ancora questo servizio.
Tipologia	Eroga
Trasporti [Capoluogo]	Non hai servizi di questo tipo da erogare. Indici una gara d'appalto!
Dettagli erogazione	Indici gara d'appalto
Richiesto il: 22/05/2009 2.20	Prezzo base di gara: Rendimento minimo:
Scade il: 04/06/2009 2.20	0% 
Valore del servizio: € 43843,07	

Categoria: Livello: da a Rendimento max: 50%

Visualizza risultati

Progettazione Fonti di Energia non Rinnovabili: Petrochimico

Categoria: Servizi	Richiedente: Mistico Man (equal rights)	Offerta attuale: € 100.000,00
Livello: Centro Urbano	Scadenza erogazione: 29/05/2009 2.20	di: aituk (Pussyville)
Scadenza asta: 28/05/2009 17.46	Rendimento: 20,00%	
Base d'asta: € 100.000,00		

Opzioni



Manutenzione degli Impianti di Trattamento Recupero Energetico

Categoria: Servizi	Richiedente: Mistico Man (equal rights)	Offerta attuale: € 100.000,00
Livello: Centro Urbano	Scadenza erogazione: 30/05/2009 2.20	di: Simonaki (San Fruttuoso)
Scadenza asta: 28/05/2009 17.46	Rendimento: 20,00%	
Base d'asta: € 100.000,00		

Opzioni



Servizio Turistico e Ricreativo di Casinò

Categoria: Turismo e Altro	Richiedente: Mistico Man (equal rights)	Offerta attuale: € 99.000,00
Livello: Capoluogo	Scadenza erogazione: 31/05/2009 2.20	di: armajor (armaxopoli)
Scadenza asta: 28/05/2009 17.46	Rendimento: 20,00%	
Base d'asta: € 100.000,00		

Opzioni



Progettazione Fonti di Energia non Rinnovabili: Carbonfossile

Categoria: Servizi	Richiedente: Michelangelo (Cuneo)	Offerta attuale: € 49.500,00
Livello: Cittadina	Scadenza erogazione: 02/06/2009 2.20	di: Lucas (Georgetown)
Scadenza asta: 28/05/2009 20.07	Rendimento: 0,00%	

Opzioni





Residenziale - Altamente Edificabile (Avanzato)

Un lotto Residenziale Altamente Edificabile potenzialmente può diventare un grattacielo, molto più spesso un complesso residenziale ad alta densità di abitazioni.

€ 240.000,00

15m 0s

Centro Urbano

Opzioni



Commerciale - Bassamente Edificabile

Una zona Commerciale Bassamente Edificabile è l'ideale per i piccoli negozi a conduzione familiare o piccoli uffici.

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Villaggio

Opzioni



Commerciale - Mediamente Edificabile

Una zona Commerciale Mediamente Edificabile può diventare luogo per piccoli centri commerciali o uffici e grossi servizi privati.

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-

Circoscrizione

Opzioni



Commerciale - Altamente Edificabile

Una zona Commerciale Altamente Edificabile raramente si sviluppa in grandi grattacieli con centri commerciali, sedi di legali di aziende e così via.

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Città

Opzioni





Trasporti - Filobus

Un mezzo di trasporto pubblico efficiente e veloce.



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Circonscrizione

Opzioni



12



Trasporti - Tram

Un mezzo di trasporto pubblico dalle efficienti caratteristiche.



€ 20.723,70



17h 28m 3s



Cittadina

Opzioni



11



Trasporti - Autostrada

E' il mezzo di comunicazione per veicoli su gomma più veloce ed efficiente. Comporta spese di manutenzione elevate.



€ 22.773,14



18h 51m 36s



Cittadina

Opzioni



11



Trasporti - Ferrovia

Il trasporto su rotaia, in particolare per le merci, incrementa l'efficienza del traffico nella città.



€ 62.100,00



10m 40s



Città

Opzioni



-





Energia - Impianto Eolico

Le centrali eoliche non hanno alcun impatto nocivo sull'ambiente ma un basso carico di produttività. Possono inoltre avere rendimenti altalenanti, dipendono dalle stagioni.



-



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Villaggio

Opzioni



12



Energia - Impianto Idroelettrico

Sono tra gli impianti per la produzione di energia più usati per i buoni volumi di produzione, i costi bassi e l'abbattimento delle emissioni nocive ed inquinanti.



€ 7.861,46



2h 55m 3s



Paese

Opzioni



9



Energia - Impianto Gas

Gli impianti a gas sono delle fonti di energia che garantiscono alcuni criteri di basso impatto ambientale e di inquinamento. Discreta efficienza e produttività.



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Circoscrizione

Opzioni



12



Energia - Impianto Carbonfossile

Gli impianti a carbonfossile hanno un impatto negativo sull'ambiente, producono molto inquinamento ma buone quantità di energia.



-



-



Cittadina

Opzioni



12





Istituzione - Prefettura

La prefettura è la sede del governo della città e inoltre di alcuni ministri e collaboratori.

€ 5.884,11

6h 28m 57s

Paese

Opzioni

11



Istituzione - Genio Civile

Il genio civile si assicura che tutte le strutture presenti sul territorio rispettino criteri di stabilità in caso di sismi, inoltre pianifica come investire le zone e i lotti di terreno a diverse densità di edificabilità.

-

-

Circoscrizione

Opzioni

12



Istituzione - Palazzo della Provincia

Alla provincia vengono effettuate le operazioni di gestione del territorio e progettazione di nuove strutture.

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Cittadina

Opzioni

12



Istituzione - Tribunale

E' il cuore della giustizia nel paese. Ogni disputa legale viene trattata e risolta in questa sede, da figure come giudici, avvocati e magistrati.

-

-

Città

Opzioni

12



Istruzione - Scuola Superiore

La scuola superiore è la porta d'accesso alle università e successivamente al mondo del lavoro. E' fondamentale perchè indirizza il ragazzo verso il suo più naturale indirizzo di studi.



€ 13.824,47



6h 30m 36s



Cittadina

Opzioni



9



Istruzione - Biblioteca

Migliaia di volumi conservati in un singolo edificio per permettere a tutti l'accesso alla conoscenza e alla cultura di ogni singolo ambito della scienza e della tecnica.



€ 47.150,00



11m 20s



Città

Opzioni



-



Istruzione - Università

Pochi studenti completano il corso di studi e coronano carriere universitarie brillanti. E' importante che il livello di studi sia alto per creare figure professionali che permettano lo sviluppo e la ricerca.



€ 15.647,75



29m 23s



Centro Urbano

Opzioni



2



Sanità - Guardia Medica

E' un piccolo punto di pronto soccorso e di appoggio per il supporto medico verso la popolazione cittadina. Non convoglia molti medici, quindi non può garantire una copertura completa.



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Villaggio

Opzioni



12





Osservatorio astronomico [Industriale]

€ 162.500,00

25m 0s

Capoluogo

Costruisci in: ▼

Opzioni



-



Ind. Superconduttori [Industriale]

Come una novella Silicon Valley, la vostra città si appresta a lanciarsi nel mercato dell'elettronica producendo sempre più sofisticare componenti.

€ 150.000,00

30m 0s

Capoluogo

Costruisci in: ▼

Opzioni



-



Base spaziale [Industriale]

Condurre ricerche scientifiche orientate alla comprensione e alla scoperta dello spazio cosmico comporta grandi costi e strutture enormi come questa.

€ 312.500,00

35m 0s

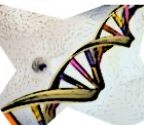
Metropoli

Costruisci in: ▼

Opzioni



-



Centro ricerca genetica [Industriale]

€ 281.250,00

40m 0s

Metropoli

Costruisci in: ▼

Opzioni



-



Tipologia	Licenziatario area
Industriale	Arn Graham , sindaco di Terminus
Livello licenza	e ha costruito: Ind. Estrattiva (metano) al livello 12
Città	
Incrementa livello licenza	Valore di vendita licenza
Soldi richiesti:  € 45.523,31	Valore stimato: € 227.616,54

Tipologia	Licenziatario area
Turistica	pippo , sindaco di pluto 
Livello licenza	e ha costruito: Agriturismo al livello 12
Villaggio	
Incrementa livello licenza	Valore di vendita licenza
Soldi richiesti:  € 18.123,16	Valore stimato: € 90.615,78

Tipologia	Licenziatario area
Industriale	Hari Sheldon , sindaco di SheldonTown
Livello licenza	e ha costruito: Ind. Agricola al livello 12
Circoscrizione	
Incrementa livello licenza	Valore di vendita licenza
Soldi richiesti:  € 28.723,27	Valore stimato: € 143.616,33

Discussioni su Living City	Ultimo Messaggio	Discussioni	Messaggi
Discussioni generiche In questa sezione puoi parlare di tutte le discussioni inerenti Living City su strategia e tattica avanzate.	di U Megghiu in COMPRO LICENZE A QUALSIASI PREZZO 23/05/2009 22.03	69	393
Discussioni per novellini Se hai dei quesiti e giochi da poco in questa sezione puoi trovare tutte le risposte ai tuoi dubbi.	di Pepito Sbezzeguti in disoccupazione 25/05/2009 23.29	284	1262
Sviluppo di Living City	Ultimo Messaggio	Discussioni	Messaggi
Segnalazione di bugs Se sei incappato in un bug questo è il posto giusto per segnalarlo.	di Pepito Sbezzeguti in licenza acquistata 17/04/2009 17.21	120	710
Suggerimenti su nuove implementazioni Hai qualche idea per la testa che ti piacerebbe vedere realizzata nel gioco? Proponila e verrà presa in considerazione!	di Simonaki in Aggiornamenti di Living City 06/05/2009 23.29	83	401
Comunicazioni dagli sviluppatori Questa sezione è dedicata alle comunicazioni da parte degli sviluppatori.	di Jabawack in Bugfix: offerta nelle aste dei servizi 27/01/2009 21.01	40	279
Strumenti di terzi Se hai sviluppato un tool che semplifichi il gioco qui ne puoi parlare!	di Jabawack in Vuoi collaborare?? 07/02/2009 13.15	3	34
Mercato di Living City	Ultimo Messaggio	Discussioni	Messaggi
Pubblicizza Offerte Qui potete postare annunci pertinenti a servizi che offrite in vendita.	di Simonaki in Licenze in Vendita 06/05/2009 23.30	53	132
Avanza Richieste Qualora aveste bisogno di acquistare qualche servizio che non trovate sul mercato qui potete avanzare le vostre richieste.	di Henry in Ricerca licenze 01/04/2009 17.04	21	93

Classifica: % Distr. Popolazione

[illegible]