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ANÁLISE COMPARATIVA ENTRE DIFERENTES MÉTODOS DE COLISÃO 2D NA UNITY

TRABALHO DE CONCLUSÃO DE CURSO

CORNÉLIO PROCÓPIO

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Trabalho de Conclusão de Curso apresentada à disciplina de Trabalho de Conclusão de Curso da Universidade Tecnológica Federal do Paraná como requisito parcial para obtenção do grau de Bacharel em Engenharia de Software.

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RESUMO

As colisões em jogos apresentam um fator importante durante seu desenvolvimento, pois elas irão influenciar no funcionamento da física e manipulação de eventos. Devido a isso, a escolha de qual o tipo de colisão deverá ser aplicada para determinado objeto ou evento deve ser bem organizada, com o intuito de causar o mínimo ou nenhuma falha durante a execução do jogo. Este trabalho apresentará as vantagens e desvantagens que cada colisão presente na plataforma de desenvolvimento de jogos (game engine) Unity oferece.

Palavras-chave: Jogos Digitais, Unity, Game Engine, Colisão, 2D, Desenvolvimento

ABSTRACT

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Collisions in games present an important factor during its development, because they will conduct the operation of physics and event manipulation. Due to that, the choice of which collision type must be applied to a specific object or event should be well organized, with the intention to cause the minimum or no fail during the game execution. This work will show the advantages and disadvantages that each collision available on the game development platform (game engine) Unity can offer.

Keywords: Digital Games, Unity, Game Engine, Collision, 2D, Development

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1 INTRODUÇÃO

A indústria de jogos no Brasil cresceu cerca de 600% entre 2008 e 2016 (SILVEIRA, 2017), gerando crescimento na quantidade de empresas de desenvolvimento de jogos. Muitas dessas empresas são pequenas, com funcionários pouco experientes e possuem baixo orçamento para o desenvolvimento de jogos. Tais empresas são conhecidas como *Indie* (MORRIS, 2017). Até o final de 2017 essa indústria está estimada em arrecadar 100 bilhões de dólares de acordo com a Digi-Capital (MORRIS, 2017).

Esse nome é dado a elas pois desenvolvem seus jogos com pouco investimento e pouca ajuda de distribuidoras. Um dos fatores para o crescimento dessas empresas é o aumento de formas de distribuição de jogos, principalmente a distribuição online.

De acordo com o Censo da Indústria Brasileira de Jogos Digitais, a média de funcionários por empresa no Brasil é de 8,5 pessoas (de 133 empresas que participaram da pesquisa de 2014) (FLEURY et al., 2014).

1.1 PROBLEMATIZAÇÃO

Como a maioria dos desenvolvedores iniciantes trabalham com um investimento inicial baixo, além de problemas com publicidade, que é um dos principais fatores que impede o sucesso desses desenvolvedores, o projeto pode encontrar falhas técnicas (REICHERT, 2012) (MOROMISATO, 2013). Essas falhas no planejamento e no plano de negócio da empresa podem levar a uma má reputação do jogo ou da empresa, pois o mesmo pode sofrer problemas de otimização, que afetam o desempenho do jogo e o conforto do jogador.

1.2 JUSTIFICATIVA

Com o crescimento das empresas *indie* (FLEURY et al., 2014) (MORRIS, 2017), tem aumentado o número de jogos executados em baixa performance, ou seja, os jogos rodam de maneira lenta ou pouco otimizada. Uma possível causa da baixa performance é a inexperiência

dos desenvolvedores. Uma alternativa para suprir a falta de experiência é recorrer a soluções já existentes no mercado, como a plataforma de desenvolvimento de jogos *Unity*, que é o alvo de estudo desse trabalho.

No entanto, as informações sobre a plataforma *Unity*, mais especificamente sobre os métodos de colisões dessa plataforma são oriundas de sua própria documentação, que se mostra escassa em alguns quesitos, ou de fóruns, podendo trazer informações contraditórias com a documentação. Há uma falta de estudos que gerem soluções fundamentadas em boas práticas.

Este estudo será realizado com o intuito de reduzir essas contradições, trazer dados e informações mais concretas e orientar os desenvolvedores durante a produção do jogo.

1.3   OBJETIVOS

1.3.1   OBJETIVO GERAL

Realizar comparações na plataforma de desenvolvimento de jogos (*game engine*) *Unity*, referentes aos métodos de detecção de colisão presentes na *engine* (por exemplo *BoxCollider2D*, *CircleCollider2D*, que serão explicados e detalhados mais adiante) e sua influência de desempenho, por exemplo quadros por segundo (FPS), consumo de memória, consumo de CPU.

1.3.2   OBJETIVOS ESPECÍFICOS

Análise dos métodos de detecção de colisão mais comumente utilizados (*BoxCollider2D, CircleCollider2D, PolygonCollider2D e EdgeCollider2D*) e que são oferecidos pela *Unity* individualmente em diferentes cenários e comparar os resultados entre eles. Serão também comparados os métodos de identificação de colisão que serão analisados são *OnTrigger* e *OnCollision*.

1.4   ORGANIZAÇÃO DO TRABALHO

No Capítulo 2, é apresentada a fundamentação teórica que irá cobrir alguns conceitos de colisão 2D, além de explicitar alguns métodos presentes na *Unity*. No mesmo capítulo são apresentados alguns trabalhos relacionados sobre métodos de detecção de colisão. No Capítulo 3, é apresentada a proposta de como o trabalho será realizado, junto do cronograma estimado de seu progresso. No Capítulo 4, são apresentadas as metodologias utilizadas para a realização das comparações do projeto. No Capítulo 5, são apresentados os resultados das comparações,

bem como a discussão perante as mesmos. No Capítulo 6, é apresentada a conclusão e as considerações finais do trabalho.

2 FUNDAMENTAÇÃO TEÓRICA

Os jogos digitais são programas que permitem a interação lúdica entre o jogador e o ambiente em que o jogo é executado, como computadores e videogames, afim de proporcionar entretenimento ao jogador (LUCCHESE; RIBEIRO, 2009).

Nos jogos, as colisões são utilizadas para realizar interações entre objetos. Fisicamente elas são usadas para detectar quando um objeto está em colisão com outro, que pode ser utilizado para criar interações entre os objetos. Por exemplo, uma bola cai em cima de um botão (Figura 1), e esta interação realiza um evento de abrir uma porta (Figura 2).
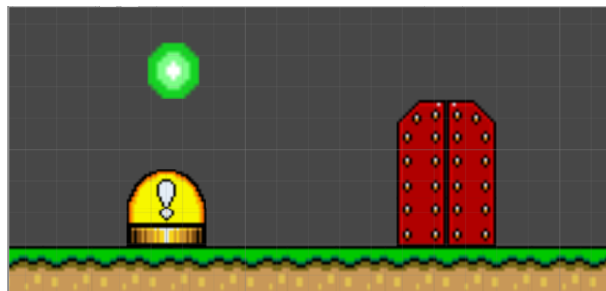
Figura 1: Exemplo de evento de colisão.
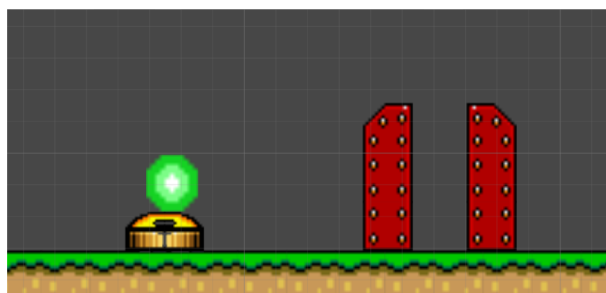
Figura 2: Exemplo de evento de colisão.

2.1 CONCEITOS BÁSICOS DE COLISÃO

Colisões funcionam por cálculos matemáticos, como Teorema de Pitágoras e diferença de pontos, que detectam intersecção entre objetos baseada em coordenadas de suas posições e

rotações, caso produzam alguma, no espaço. Um exemplo é a colisão de círculos, onde cada círculo tem como atributo o seu centro, que irá determinar a sua posição no espaço e o raio. Se a diferença da distância entre os centros dos círculos for menor ou igual a soma dos raios significa que os círculos estão colidindo. Isso é ilustrado nas Figuras 3, 4 e 5.

Na Figura 3, os pontos A e B representam os centros de cada círculo, sendo que o círculo verde tem o raio de comprimento $\overline{AC}$ e o círculo pontilhado tem raio $\overline{BD}$. Então pode ser calculada a distância entre os centros dos círculos por meio de um Teorema de Pitágoras, tendo o segmento de reta $\overline{AB}$ como sua hipotenusa. Logo em seguida, será feita a comparação entre o comprimento da hipotenusa e a soma dos raios dos círculos para verificar estão colidindo. No caso da Figura 3 eles não estão em colisão, pois o comprimento da hipotenusa A-B é maior que a soma dos raios $\overline{AC}$ e $\overline{BD}$ dos círculos, não satisfazendo a condição para que ocorra a colisão.
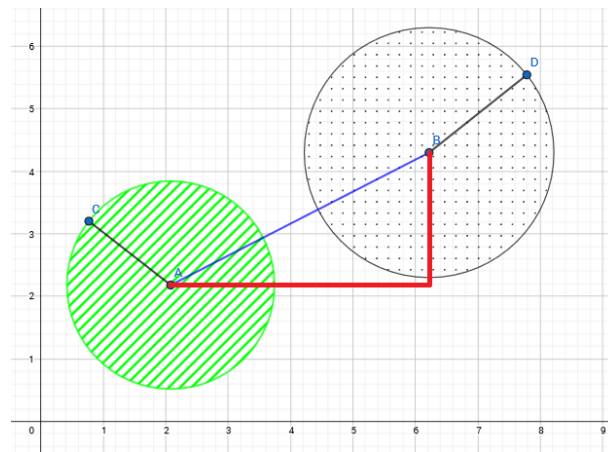
Figura 3: Colisão de Círculos: Círculos não estão colidindo, diferença das distâncias entre os centros é maior que a soma dos raios.

Na Figura 4, o procedimento é o mesmo para verificação. Nesse caso, há a colisão e ainda há a intersecção entre os círculos. Isso pode ser confirmado ao comparar o comprimento da hipotenusa $\overline{AB}$ com a soma dos raios $\overline{AC}$ e $\overline{BD}$ e verificar que o tamanho da hipotenusa é menor que a soma dos raios. Dependendo dos requisitos e do algoritmo, os pontos onde ocorre a intersecção podem ser armazenados, no caso da Figura 4 são os pontos E e F.

Na Figura 5, o procedimento também é o mesmo e nesse existe a colisão, porém não há intersecção entre os círculos, isso é verificado através do cálculo da diferença entre a hipotenusa A-B e a soma dos raios $\overline{AC}$ e $\overline{BD}$, que nesse caso são do mesmo comprimento, portanto há colisão.

Um código semelhante é explicado no livro Programação de Jogos com C++ e *DirectX* de André Santee, porém com uma esfera ao invés de um círculo, no entanto o conceito se aplica de forma semelhante (SANTEE, 2005).

Figura 4: Colisão de Círculos: Círculos estão colidindo e interceptando, diferença das distâncias entre os centros é menor que a soma dos raios.

Figura 5: Colisão de Círculos: Círculos estão colidindo, diferença das distâncias entre os centros é igual que a soma dos raios.

O código representado na Figura 6 é basicamente dividido em duas etapas: encontrar a diferença na distância do centro das duas esferas utilizando o teorema de Pitágoras. Essa diferença será então verificada se ela é menor ou igual à soma dos raios das esferas.

No código, é criada uma *struct Sphere* (linha 1), que contém os atributos *pos* (linha 3), recebendo a posição do centro da esfera; e *radius* (linha 4), que recebe o valor do raio da esfera, sendo elas as estruturas presentes na simulação.

A função *SphereCollision* (linha 7) do tipo booleana retorna falso se as esferas não estiverem colidindo e verdadeiro se estiverem. Ela recebe como parâmetro o endereço de duas estruturas do tipo esfera que serão usadas na detecção, já o último parâmetro recebe o endereço da distância entre os centros das esferas, no entanto esse parâmetro é opcional.

Dentro da função é criado um vetor *diff* (linha 9), que será usado para armazenar a

```
1   struct Sphere
2   {
3       float pos[3];
4       float radius;
5   };
6
7   bool SphereCollision (const Sphere *ps1, const Sphere *ps2, float *poutDist = NULL)
8   {
9       float diff[];
10      for (int t = 0; t < 3; t++)
11      {
12          diff[t] = ps1->pos[t] - ps2->pos[t];
13      }
14      const float dist = sqrt(diff[0]*diff[0] + diff[1]*diff[1] + diff[2]*diff[2]);
15      if (poutDist)
16      {
17          *poutDist = dist;
18      }
19      if (dist <= ps1->radius + ps2->radius)
20      {
21          return true;
22      }
23      return false;
24  }
25
```

Figura 6: Código sobre colisão de esferas
Fonte: (SANTEE, 2005).

diferença das distâncias dos centros das esferas em cada eixo através de uma iteração num *for* (linhas 10 a 13).

É criada então uma variável *dist* que recebe a raiz da soma dos quadrados das distâncias entre os centros das esferas (*diff*) (linha 14), ou seja, o teorema de Pitágoras.

Nas linhas 15 a 18 verifica se o *poutDist* é válido, se for, *dist* é atribuído ao local da memória indicado.

As linhas 19 a 22 verifica se há colisão entre as esferas calculando se a distância delas é menor ou igual a soma dos raios das mesmas.

2.2   FÍSICA NA UNITY

Nesta seção são apresentados os métodos e classes dos colisores mais comumente utilizados nos *GameObjects* na plataforma de desenvolvimento de jogos *Unity*.

GameObjects são as classes básicas para todas as entidades que compõem uma cena na *Unity*, e a elas podem ser atribuídos componentes que alteram suas propriedades.

2.2.1 *COLLIDERS* 2D

São detalhados com figuras os *colliders* dos tipos *CircleCollider2D*, *BoxCollider2D*, *PolygonCollider2D* e *EdgeColider2D*, pois são os tipos que serão o alvo de estudos desse trabalho, pelo fato de serem mais utilizados comumente e não necessitarem de interações entre outros *colliders* para existirem.

- *CircleCollider2D*

  Componente que adiciona a propriedade de colisão do tipo círculo. É restrito ao raio do *collider*.
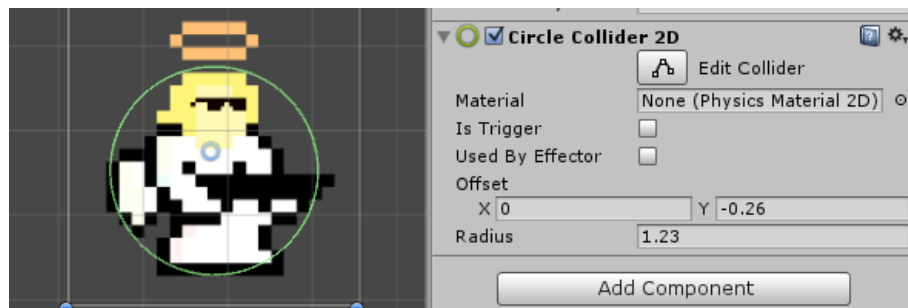
Figura 7: Exemplo de uso do *CircleCollider2D*.

Fonte: (BASICS, 2017)

- *BoxCollider2D*

  Componente que adiciona a propriedade de colisão do tipo retangular. É restrito a altura e largura do *collider*.
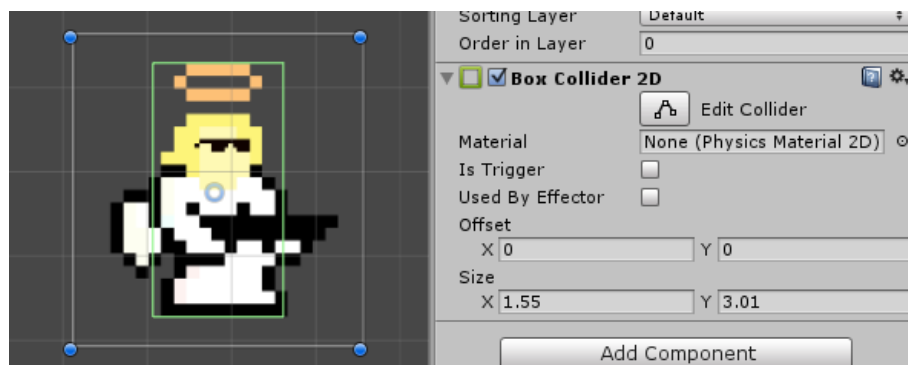
Figura 8: Exemplo de uso do *BoxCollider2D*.

Fonte: (BASICS, 2017)

- *PolygonCollider2D*

  Componente que adiciona a propriedade de colisão do tipo poligonal, ou seja qualquer forma poligonal convexa ou não-convexa fechada. O *PolygonCollider2D* não tem restrição de forma, porém é comumente utilizado quando algum objeto tem uma forma complexa que precisa ser utilizar todo o formato do objeto. A forma final do seu *collider* representa um polígono fechado côncavo ou convexo.
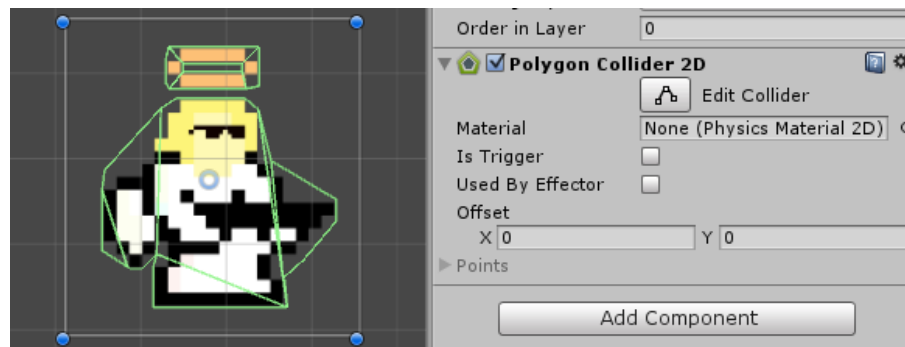
Figura 9: Exemplo de uso do *PolygonCollider2D*.
Fonte: (BASICS, 2017)

- *Edge Collider 2D*

  Componente que adiciona a propriedade de colisão do tipo aresta, ou seja qualquer forma poligonal convexa ou não-convexa aberta. Não tem restrição de forma, porém é comumente utilizado para terrenos e plataformas, onde apenas parte da superfície do objeto é utilizada.
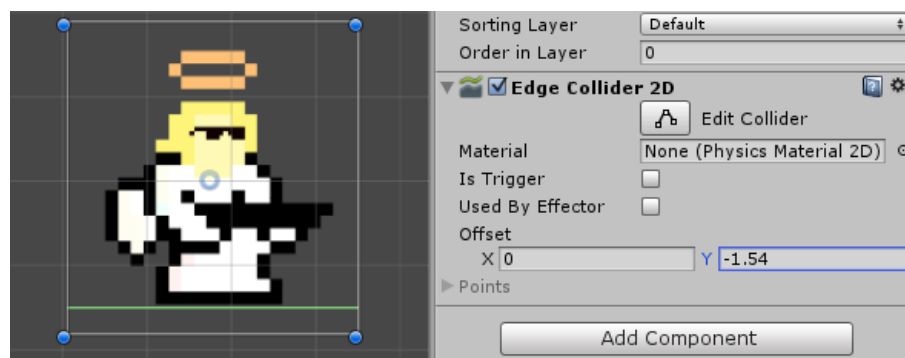
Figura 10: Exemplo de uso do *EdgeCollider2D*.
Fonte: (BASICS, 2017)

- *SpringJoint2D*

  Componente que adiciona a propriedade de colisão do tipo mola.

- *DistanceJoint2D*

  Articulação 2D que une dois *GameObjects* controlados pela física de *RigidBody2D* e os mantém a uma certa distância.

- *HingeJoint2D*

  Componente que adiciona a propriedade do tipo restrição angular, permitindo restringir rotação do objeto em seu próprio eixo (que pode ser personalizado) ou ser ligado (e ter o angulo de rotação restringido) por outro objeto.

- *SliderJoint2D*

  Articulação que permite o *GameObject* deslizar ao longo de uma linha no espaço.

- *WheelJoint2D*

  Usado para simular uma roda rolante. A roda usa uma suspensão de "mola" para manter a distância do corpo principal do veículo.

- *Composite Collider 2D*

  Não é consistido por uma forma, mas sim pelo conjunto de *Box Colliders* e/ou *Polygon Colliders* para construir uma colisão mais complexa.

2.2.2   MENSAGENS DOS COLLIDERS

- *OnCollisionEnter2D*

  É chamado quando o *collider/rigidbody* do objeto ao qual ele pertence começou a tocar outro *collider/rigidbody*.

- *OnCollisionExit2D*

  É chamado quando o *collider/rigidbody* do objeto ao qual ele pertence parou de tocar outro *collider/rigidbody*.

- *OnCollisionStay2D*

  É chamado uma vez por quadro para cada *collider/rigidbody* que está tocando o *collider/rigidbody* do objeto ao qual ele pertence.

2.2.3 MENSAGENS DOS TRIGGERS

- *OnTriggerEnter2D*

  É chamado quando o *collider* entra no *trigger*(gatilho) do objeto ao qual ele pertence.

- *OnTriggerExit2D*

  É chamado quando o *collider* parou de tocar no *trigger* do objeto ao qual ele pertence.

- *OnTriggerStay2D*

  É chamado em quase todos os quadros para cada *collider* que esteja tocando o *trigger* do objeto ao qual ele pertence.

2.2.4 INTERAÇÕES DE COLLIDERS

Colliders interagem uns com os outros diferentemente dependendo de como seus componentes *Rigidbody* são configurados. As três configurações importantes são *Static Collider, Rigidbody Collider e Kinematic Rigidbody Collider* (Unity Technologies, 2017b).

- Static Collider

  Trata-se de um *GameObject* que tem um *Collider* mas não contém *Rigidbody*. *Static Colliders* são utilizados para desenvolvimento do cenário, já que eles se mantém no mesmo lugar e nunca se mexem. Objetos com *Rigidbody* irão colidir com o *static collider* mas não o moverão.

- *Rigidbody Collider*

  Este é um *GameObject* com um *collider* e um *Rigidbody* não-cinemático atribuído a ele. *Colliders Rigidbody* são totalmente simulados pela *engine* de física e podem reagir a colisões e forças aplicadas por *script*. Eles podem colidir com outros objetos (incluindo *static colliders*) e é a configuração mais usada de *Collider* em jogos que usam física.

- *Kinematic Rigidbody Collider*

  Este é um *GameObject* com um *Collider* e um *Rigidbody* cinemático atribuído a ele (a propriedade *IsKinematic* do *RigidBody* é habilitada). Você pode mover um *rigidbody* cinemático a partir de um *script* modificando o componente *Transform* dele, porém não irá responder a colisões e forças como um *rigidbody* não-cinemático. *Rigidbodies* cinemáticos devem ser usados em objetos que podem ser movidos ou habilitados/desabilitados quando necessário, porém devem se comportar como *static colliders*. Diferente de um

static collider, um *rigidbody* cinemático que se mova irá aplicar fricção para outros obje-tos e irá "acordar" outros *rigidbodies* quando fazem contato.

A Tabela 1 mostra quais interações de colisões geram mensagens para os *triggers* en-viarem. Já a Tabela 2, mostra quais interações de colisões geram mensagens para os *colliders*.

Trigger messages are sent upon collision						
	Static Collider	Rigidbody Collider	Kinematic Rigidbody Collider	Static Trigger Collider	Rigidbody Trigger Collider	Kinematic Rigidbody Trigger Collider
Static Collider					Y	Y
Rigidbody Collider				Y	Y	Y
Kinematic Rigidbody Collider				Y	Y	Y
Static Trigger Collider		Y	Y		Y	Y
Rigidbody Trigger Collider	Y	Y	Y	Y	Y	Y
Kinematic Rigidbody Trigger Collider	Y	Y	Y	Y	Y	Y

Tabela 1: Quando mensagens de *trigger* são enviadas de acordo com o tipo de colisão

Trigger messages are sent upon collision						
	Static Collider	Rigidbody Collider	Kinematic Rigidbody Collider	Static Trigger Collider	Rigidbody Trigger Collider	Kinematic Rigidbody Trigger Collider
Static Collider		Y				
Rigidbody Collider	Y	Y	Y			
Kinematic Rigidbody Collider		Y				
Static Trigger Collider						
Rigidbody Trigger Collider						
Kinematic Rigidbody Trigger Collider						

Tabela 2: Quando mensagens de *trigger* são enviadas de acordo com o tipo de colisão

Alguns exemplos de quando mensagens de *trigger* são enviadas sobre uma colisão po-dem ser comparados seguindo a Tabela 1. Comparando a colisão entre um *Static Collider* e um *Rigidbody Trigger Collider*, ele envia uma mensagem de *trigger*. Porém se forem comparados *Kinematic Rigidbody Collider* com um *Rigidbody Collider*, ele não envia mensagem de *trigger*.

Quando ocorre detecção de colisão e mensagens *não-triggers* são enviadas ao ocorrer a colisão, esse envio acontece apenas entre *Rigidbody Collider com Static Collider, Rigidbody Collider com Rigidbody Collider, Rigidbody Collider com Kinematic Rigidbody Collider, Sta-tic Collider com Rigidbody Collider, Kinematic Rigidbody Collider com Rigidbody Collider.* Assim como mostrado na Tabela 2.

2.2.5   FUNÇÕES DA PHYSICS2D

- *Raycast*

  Emite um raio contra *colliders* na cena.

- *Linecast*

  Emite um segmento de linha contra *colliders* na cena.

- *Overlap*

  Checa se um *collider* intercepta com uma área.

Em um *Raycast* é configurado o ponto inicial e a direção desse ponto para detectar se algo se encontra nesse raio (KACER, 2011), (DIGISCOT, 2015). Esse raio emitido pode ser infinito no espaço.

Em um *Linecast* é configurado o ponto inicial e o ponto final. Se houver algum *collider* entre esses dois pontos ele irá retornar verdadeiro (KACER, 2011), (DIGISCOT, 2015).

2.2.6   SUBDIVISÕES DAS FUNÇÕES DA PHYSICS2D

- *All*

  Adquire uma lista de todos os colliders que interceptam em uma área.

- *NonAloc*

  Adquire uma lista de todos os colliders que interceptam em uma área específica.

2.2.7   SUBDIVISÕES DOS OVERLAPS

- *Area*

  Verifica se um collider está dentro de uma área retangular.

- *Box*

  Verifica se um collider está dentro de uma área de caixa.

- *Capsule*

  Verifica se um collider está dentro de uma área de capsula.

- *Circle*

  Verifica se um collider está dentro de uma área de círculo.

- *Collider*

  Obtém uma lista de todos os colliders que se sobrepõem ao collider.

- *Point*

  Verifica se um collider se sobrepõe a um ponto no espaço.

  (Unity Technologies, 2017b)

2.3 TRABALHOS RELACIONADOS

Existem muitos métodos de implementação de detecção de colisão, e alguns deles podem ser implementados na Unity além dos já existentes. Nesta seção serão mencionados brevemente dois métodos muito utilizados e semelhantes em certos aspectos para detecção de colisão, que podem ser implementados na Unity através de implementação própria, como o AABB (*Axis Alligned Bounding Box*). Em alguns métodos apresentados nessa seção, suas comparações de performance foram realizadas com outros métodos de colisões já existentes, porém nenhum deles feitos na Unity e sim (a maioria) em *engine* própria. Este trabalho tem a intenção de realizar comparações desses métodos ou de métodos que se assemelham aos mesmos, porém na Unity e fundamentar um estudo comparativo para análises futuras.

2.3.1 AABB (AXIS ALLIGNED BOUNDING BOX)

O método de AABB cria uma caixa que envolve todo o volume do objeto, porém, diferente do OBB, as caixas não são alinhadas com o eixo base do próprio objeto, e sim com o eixo do espaço mundial onde o objeto se encontra. Em outras palavras, se o objeto rotacionar, o volume da caixa que será usada para detectar a colisão irá aumentar, pois não é fixo ao eixo base do objeto. Isso quer dizer que se dois objetos, dependendo de como estiverem arranjados no espaço, mesmo que não estejam colidindo, a detecção pode resultar que estão, pois suas caixas que os envolvem estão colidindo, como mostrado na Figura 11. Outra representação do AABB pode ser encontrada na Figura 12 B.

Basicamente o que o algoritmo faz é adquirir os extremos das caixas, geralmente por arestas, que estão envolvendo os objetos e calcula a diferença entre eles. (EICHNER, 2014).

2.3.2 OBB (ORIENTED BOUNDING BOX)

(EBERLY, 2002), (EICHNER, 2014), (ERICSON, 2004)
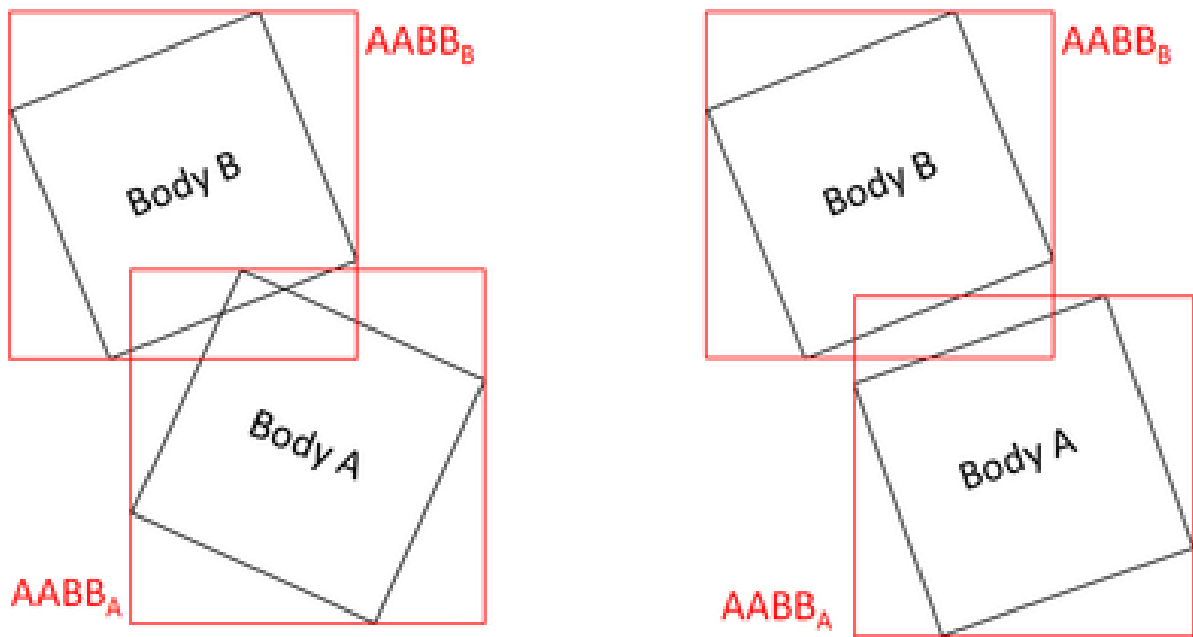
Figura 11: Exemplo de colisão AABB.
Fonte: (EICHNER, 2014)

O método de OBB funciona criando uma caixa que envolve o volume de cada objeto que estará envolvido no teste de colisão tendo cada um deles como orientação seu eixo base. A detecção pode ser feita de várias formas, a mais simples é checar se os vértices de uma caixa estão dentro de uma outra e vice-versa. Esse método tende a ser mais preciso que o AABB, pois se o objeto rotaciona, a caixa que o envolve também irá seguir essa rotação. No entanto tem um custo ligeiramente maior na performance. Esse método se assemelha ao componente *BoxCollider2D* na Unity. Um exemplo do OBB está representado na Figura 12 C.

2.3.3   BOUNDING SPHERE

O *Bounding Sphere* adquire o valor do centro da esfera e raio dos objetos que estarão envolvidos na detecção. Se a diferença da distância entre os centros das esferas for menor que a soma dos raios, então as esferas estão colidindo (um código semelhante foi explicado na seção 2.1 na Figura 6) (SANTEE, 2005), (DOPERTCHOUK, 2000). Um exemplo de *Bounding Sphere* está apresentado na Figura 12 A.

2.3.4 CONVEX HULL

O *Convex Hull* procura atribuir o menor volume convexo para que possa conter o objeto, ou seja, o volume apresenta um sólido que não contém concavidades. Existem vários algoritmos que podem realizar os cálculos para formar esses volumes e/ou que permitem fazelos de maneira mais customizáveis. (CHAZELLE, 1993), (BERG et al., 2008). Um exemplo de volume *Convex Hull* é apresentado na Figura 12 D.
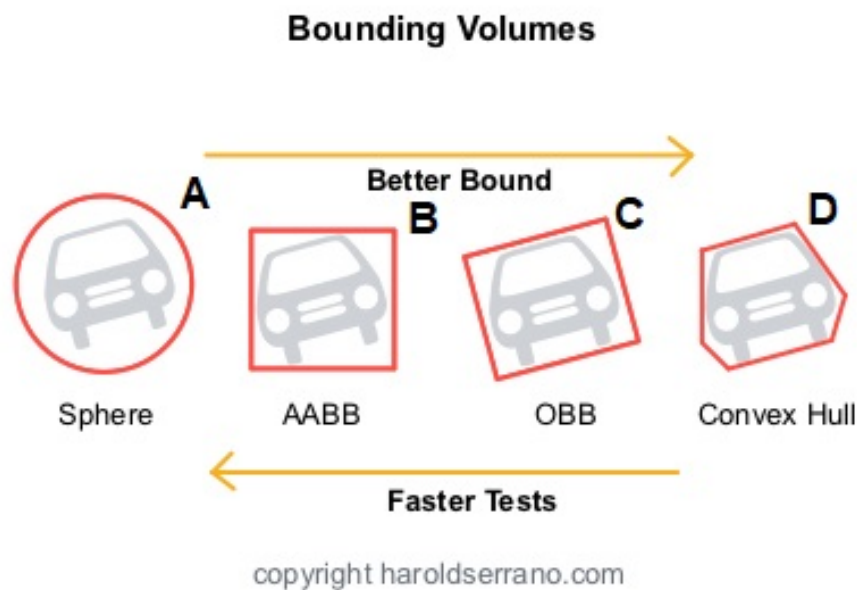
Figura 12: Exemplo de colisão OBB e outros.
Fonte: (SERRANO, 2016)

2.3.5 OTIMIZAÇÃO DE COLISÕES NA *UNITY*

Há uma série de otimizações que podem ser realizadas para obter melhor performance nas colisões, algumas dessas otimizações são apresentadas por Armstrong (2017). Um exemplo de otimização que pode ser realizada se a performance está prejudicada é de filtrar as colisões apenas com os tipos necessários que cada uma deve se conectar. O site também fala da importância de ter o planejamento do projeto antes de começar a execução para evitar possíveis problemas durante o desenvolvimento.

3 PROPOSTA

Este trabalho de conclusão de curso se especifica em um dos problemas de conceito técnico, sendo ele relacionado a detecção de colisões no jogo, ou seja, quando dois objetos se interceptam. A intenção do trabalho foi de realizar as comparações das colisões e fundamentá-las num estudo para evitar as divergências entre informações devido a documentação da ferramenta pouco completa e dados oriundos de outras fontes.

Foi adotada uma das *engines* mais populares entre os desenvolvedores *indie* e algumas grandes empresas, a Unity (Unity Technologies, 2017a) (BANERJEE, 2017), também muito utilizada no Brasil de acordo com o Censo da Indústria Brasileira de Jogos Digitais (106 das 133 empresas pesquisadas em 2014, como mostrado na Tabela 3) (FLEURY et al., 2014) pelo fato de ter uma burocratização fácil.

Engine Utilizada	Quantidade de empresas que utilizam	Porcentagem de empresas que utilizam
Unity	106	79,7%
Tecnologia própria	25	18,8%
Cocos 2D	18	13,53%
Blender	13	9,77%
Corona SDK	11	8,27%
Construct2	11	8,27%
GameMaker	8	6,02%
Flash	8	6,02%
Unreal3 (UDK)	7	5,26%
Marmelade	2	1,5%
CryEngine	1	0,75%
Outros	16	12,03%

Tabela 3: **Tabela de Engines mais utilizadas no Brasil**
(FLEURY et al., 2014)

Foram realizadas comparações dos métodos de colisão oferecidos gratuitamente pela *game engine* Unity. Essas, foram divididas em 2 tipos: *Pre-runtime* e *Runtime*.

3.1 PRE-RUNTIME

Os objetos, seus *colliders*, componentes de física e programação são inseridos na cena antes de serem executados. O programa então é executado, os objetos reagem de acordo com as suas posições na cena e próprias configurações. Os resultados são então coletados.

3.2 RUNTIME

Os objetos são gerados em tempo de execução, ou seja, são invocados durante a execução do programa, de acordo com a programação dos objetos-base, dos controladores e das configurações da cena. O programa é executado, os objetos são gerados em tempo de execução, reagem de acordo com suas configurações de colisão e cena. Os resultados são então coletados.

3.3 ENFATIZAÇÃO DAS COMPARAÇÕES

As comparações foram feitas usando a interface de duas dimensões da Unity para obter resultados mais simples com esse estudo. Os tipos de *colliders* que tiveram mais ênfase nas comparações foram *Box, Circle, Polygon e Edge*, pelo fato de serem mais utilizados.

As medições incluem taxa de quadros por segundo (FPS), taxa de consumo do processador, taxa de consumo de memória total durante a execução, coleta de lixo de memória, tempo total em milissegundos.

As comparações foram casos sintéticos, ou seja, não foi um jogo específico que sofreu a comparação, mas sim cenários de teste elaborados para estressar os recursos e verificar os limites de cada método de colisão.

O hardware que foi utilizado para realizar as comparações foi um notebook, com as seguintes configurações:

- Processador: Intel Core i5 4210U @2.4GHz

- Placa de Vídeo: Intel HD Graphics 4400

- Memória RAM: 8GB

- Disco Interno: SSD 120GB

- Disco Externo: HDD 1TB

- Sistema Operacional: Windows 10 Pro

Também foi usado o software gratuito de edição de imagem *Krita* (Krita Foundation, 2017) para desenvolver os *sprites* que foram usados nas comparações.

3.4   CRONOGRAMA

Na tabela 4 é apresentado um cronograma com as datas estimadas da progressão do projeto.

Cronograma	Ago 2017	Set 2017	Out 2017	Nov de 2017	Dez 2017	Jan 2018	Fev 2018	Mar 2018	Abr 2018	Mai 2018
Pesquisas Iniciais	X	X								
Pesquisas sobre colisões		X								
Pesquisas sobre colisões na Unity			X							
Escrita do TCC 1			X							
Apresentação do TCC 1			X							
Proposta de cenários				X	X					
Realização das comparações					X	X	X	X		
Registro de resultados						X	X	X		
Escrita do TCC 2								X	X	X
Apresentação do TCC 2										X

Tabela 4: **Cronograma de progresso estimado do trabalho**

4 METODOLOGIAS

Neste capítulo é explicado como as comparações foram feitas e o que foi retirado delas para a abordagem de resultados.

Uma pesquisa de campo foi realizada para saber mais dos tipos de colisões utilizadas através de um formulário que foi divulgado em grupos de comunidades de desenvolvedores de jogos de várias categorias (desenvolvedor independente, estudante, etc.).

Durante os testes foi usada a ferramenta *Profiler* da *Unity*. Essa ferramenta permite analisar em tempo real vários detalhes da performance do jogo em execução, como tempo em milissegundos, *scripts* chamados, memória RAM utilizada, etc.

Para a obtenção dessas comparações foi usado um *script* que grava os resultados em formato *JSON*, criado por PALMA(2017). Em seguida foram extraídos do arquivo apenas os dados que serão usados para essa análise comparativa, que serão detalhados mais a seguir. Após isso os arquivos foram convertidos para valores separados por vírgulas (*CSVs*), para que pudessem ser lidos e manipulados por softwares de planilha.

Planilhas foram usadas para armazenar os resultados das pesquisas e dos testes onde podem ser exibidos em gráficos comparativos para melhor visualização e compreensão dos dados.

4.1 PESQUISA DE CAMPO

A pesquisa de campo foi criada usando o sistema de formulários da *Google* (*Google Forms*), em que é possível criar e visualizar os resultados em tempo real.

O formulário foi feito tanto em português, como em inglês e foi divulgado em grupos de comunidade de desenvolvedores.

O formulário é separado em quatro setores:

- Quem é a pessoa respondendo

Em que situação a pessoa se encontra na área de desenvolvimento de jogos. Se é um desenvolvedor independente, desenvolvedor de grande empresa (AAA), desenvolvedor por passatempo (*hobby*) ou estudante. Isso ajuda a ter uma visão de quem usa e como usa tais tecnologias.

- Perguntas generalizadas sobre as cenas produzidas

Uma cena ou nível em um jogo é onde a interação entre o jogador, o cenário e seus eventos acontece. Nela podem ter vários tipos de objetos de jogo, com diferentes propriedades, mas o foco nesse caso é em relação às colisões usadas nelas.

As perguntas nessa seção consistem em saber qual o tipo de colisão predominante na maioria das cenas que produzem, que podem ser *Static Collider*, *Rigidbody Collider* e *Kinematic Rigiddbody Collider*. E qual a média de objetos com a propriedade *trigger* ligada usados em cada cena, que pode ter múltiplos valores atribuídos.

- Perguntas relacionadas à colisões 2D

Quais os tipos de colisões mais utilizados em um cenário de jogo 2D, bem como as mensagens mais utilizadas para a manipulação de eventos e a média total de objetos com qualquer tipo de colisão em uma cena.

Os tipos de colisões apresentadas no formulário são as mesmas apresentadas na subseção 2.2.1. E as mensagens apresentadas são as mesmas já explicadas na subseção 2.2.2.

- Perguntas relacionadas à colisões 3D

Segue exatamente o mesmo padrão do item anterior sobre colisões 2D, apenas alteradas para 3D. Feitas para ter uma visão á respeito do outro setor da *Unity*.

Enquanto o formulário se encontra aberto para ser respondido, os resultados podem ser acompanhados em tempo real. O que permite ter uma visão desde o início dos resultados e como eles vão progredindo com o passar do tempo.

4.2 *PROFILER* DA *UNITY*

Profiler é uma ferramenta que permite a análise em tempo real dos dados e detalhes de uma cena durante sua execução.

Os dados coletados são divididos em vários setores, no entanto, apenas quatro atributos em uso de CPU são o foco deste projeto, que são porcentagem de uso total, chamadas,
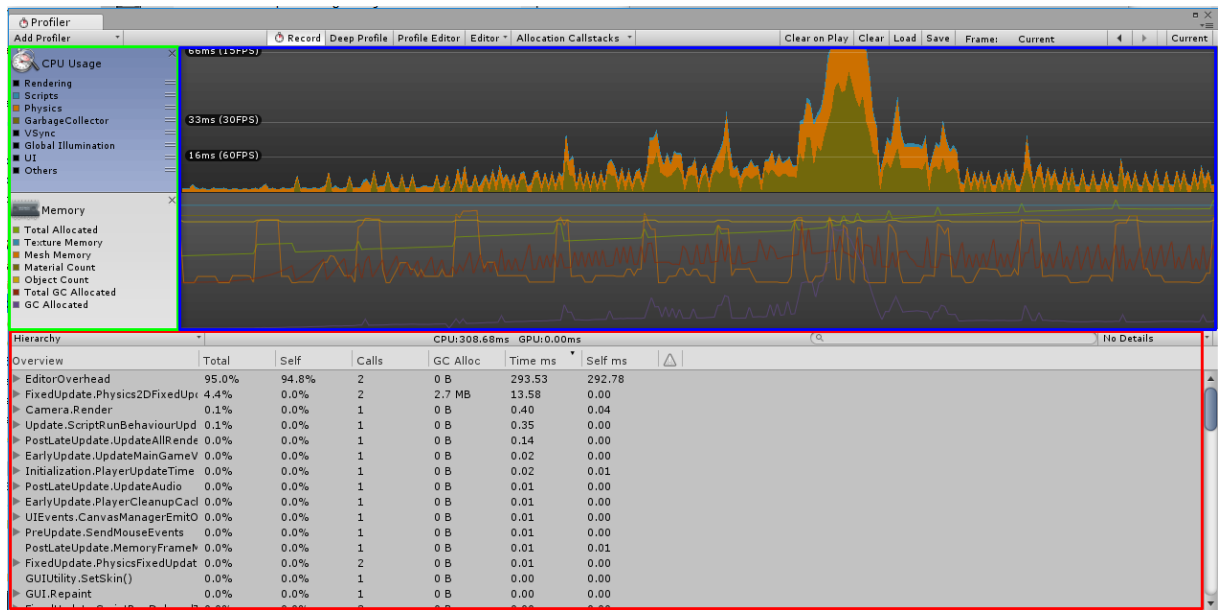
Figura 13: *Profiler* da *Unity*. **Em verde, estão as categorias dos dados que são medidos. Em azul, o gráfico porcentual do uso das categorias. Em vermelho, as funções chamadas em dado quadro e seus respectivos dados de consumo.**

Fonte: (Unity Technologies, 2017b)

memória alocada pelo *Garbage Collector* e tempo total em milissegundos(ms). O *Profiler* permite também que os dados sejam coletados por métodos. Serão usados como coleta de dados os atributos já mencionados: *Physics2D.Simulate*, as mensagens *OnCollision2D* e *OnTrigger2D*.

Physics2D.Simulate é o método responsável por toda a simulação de física presente na cena, qualquer objeto estático, que tenha massa, corpo rígido ou *trigger* é simulado por ele.

As mensagens de *OnCollision2D* analisadas são as mesmas apresentadas na subseção 2.2.2. No mesmo padrão seguem as mensagens de *OnTrigger2D* na subseção 2.2.3.

- Porcentagem do uso total de CPU: Porcentagem do uso total de CPU de um método em. determinado quadro.

- Chamadas (*Calls*): O número de vezes que o método foi chamado em determinado quadro.

- Memória alocada pelo *Garbage Collector* (*GCMemory*): A quantidade de memória alocada em *bytes* no *Garbage Collector* para a execução do método em determinado quadro.

- Tempo total em milissegundos (ms): A quantidade de tempo em milissegundos requerida para executar o método em determinado quadro.

4.3 OBTENÇÃO E FILTRAGEM DE DADOS

Por padrão, o *Profiler* da *Unity*, não é capaz de salvar os dados coletados para visualização, comparação e manipulação em outras plataformas. No entanto, é possível fazer isso graças a um *script* criado por Palma (2017). Ele permite exportar os dados de uso de CPU em formato *JSON*, o que permite extrair e comparar apenas os dados que serão usados. Sua interface é mostrada na Figura 14.
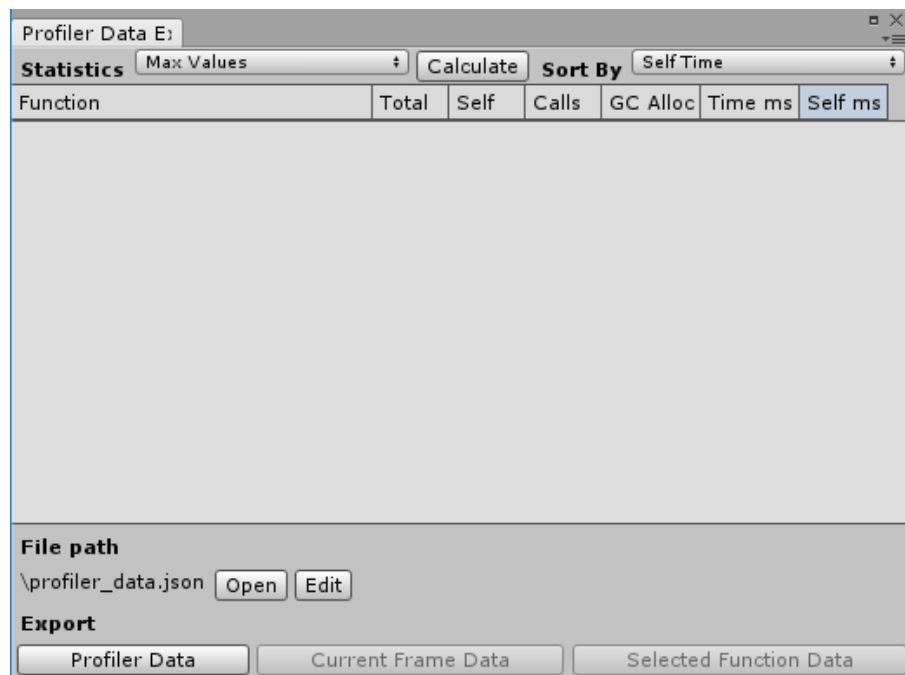

Figura 14: *Profiler Data Exporter*.
Fonte: (PALMA, 2017)

Para extrair esses dados, foi usado um *script* em *Javascript* que os atribui para o formato certo para que possam ser convertidos em valores separados por vírgulas por meio do site *http://convertcsv.com/json-to-csv.htm* e depois lidos em um *software* de planilhas que permita a leitura desse formato de valor.

4.4 CENÁRIOS DE COMPARAÇÃO

Cada cenário foi feito usando um dos quatro *colliders* que foram mencionados antes (subseção 3.3), cada um em *Pre-Runtime* e *Runtime*.

Para obter resultados mais relevantes, cada cena em *Pre-Runtime* foi renderizada com um, dez, cinquenta, cem, quinhentos e mil objetos inseridos na cena antes de sua execução.

Já em cenas em que os objetos seriam invocados, o *script* gerava um, dez, cinquenta, cem, quinhentos e mil objetos por segundo durante a execução do programa.
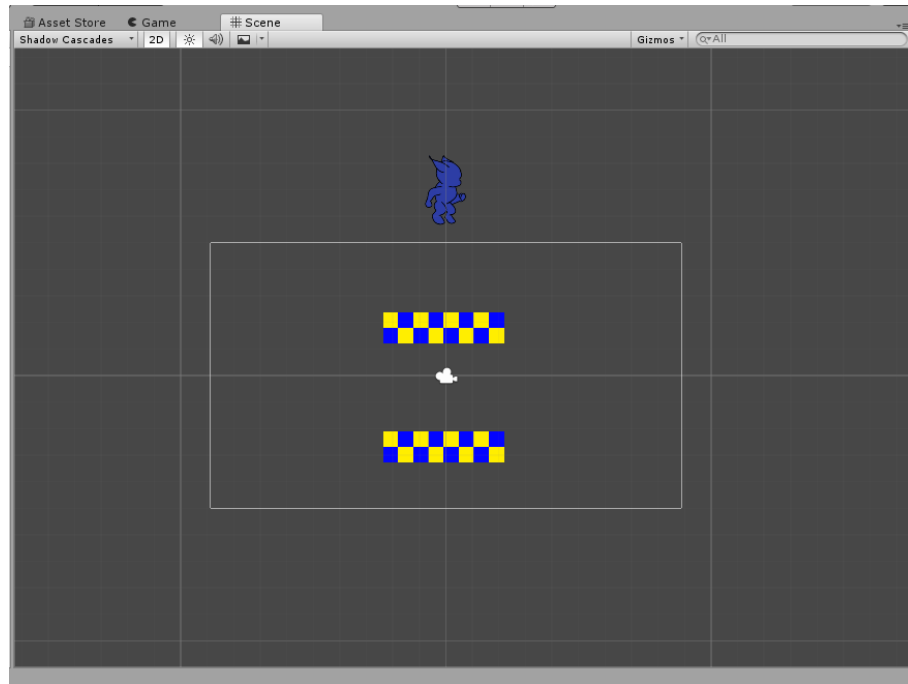

Figura 15: Exemplo de cenário de comparação.

O cenário *Pre-Runtime* consiste de três elementos que são exibidos na Figura 15, que é detalhada logo a seguir.

- O objeto com um tipo de *collider* e *rigid body* atribuídos a ele, sem ser do tipo *kinematic*. Esse objeto é representado pelo personagem em azul.

- Um objeto que permanece parado, com *box collider* em todas as comparações, porém, não é atribuído *rigid body* a ele, e sim *trigger*, ou seja, objetos podem atravessá-lo, mas a detecção de colisão ainda ocorre. Este é representado pela plataforma que se encontra logo abaixo do personagem.

- A última plataforma em baixo, é um objeto estático, porém com um *box collider*, ou seja, os objetos não podem atravessá-lo.

Conforme a quantidade de objetos do tipo do personagem aumentar (parâmetro de medição de número de objetos da cena), os próprios são posicionados aleatoriamente na cena, e as plataformas são alongadas para ter uma área de contato maior para os objetos dinâmicos.

O cenário *Runtime* consiste dos mesmos elementos que o cenário *Pre-Runtime*, porém no lugar do personagem já inserido, há um invocador que se mover na cena e invocar o objeto do personagem dentro de um período de tempo.

5 RESULTADOS E DISCUSSÕES

Este capítulo apresenta os resultados mais relevantes das comparações. É categorizado por tipo de *collider* e em seguida por tipo de cenário (*Pre-Runtime* e *Runtime*).

A maioria dos resultados com poucos objetos no cenário, ou seja, com um e dez objetos ou objetos gerados por segundo, não apresentaram grandes diferenças entre si em relação a *performance* que pudessem intervir na jogabilidade. Em todas as comparações, os cálculos da física dos objetos foram os que mais consumiram recursos, que foram aumentando conforme o aumento do número de objetos na cena dependendo do tipo de *collider* usado. Mais detalhes podem ser encontrados no apêndice.

A pesquisa de campo foi realizada com vinte e sete pessoas até o dia dezenove de outro de 2019 (19/10/2019), sendo que dezessete delas responderam através do formulário em português e as dez restantes, no formulário em inglês

5.1 PESQUISA DE CAMPO

De acordo com a pesquisa de campo realizada, cerca de 70% do uso das colisões são de *Box* e *Circle Collider* para suas cenas em 2D como mostra a Figura 16.

Em relação as mensagens usadas, há uma distribuição equilibrada quando o uso é de início e final de contato com a colisão ou trigger, como mostra a Figura 17. Já enquanto o contato ainda está ocorrendo é pouco utilizado.

O número médio de objetos numa cena podem ser encontrados na Figura 18. Nesse resultado apenas dois participantes não responderam à pergunta.
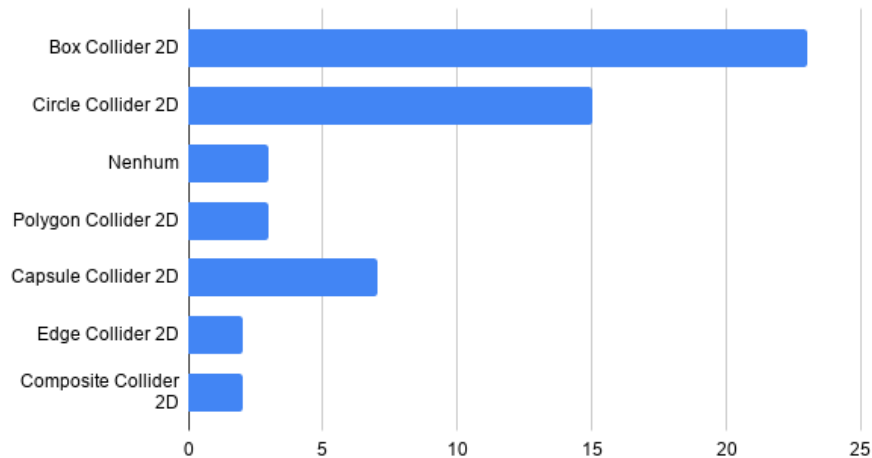
Figura 16: Frequência de uso de *Colliders* 2D.
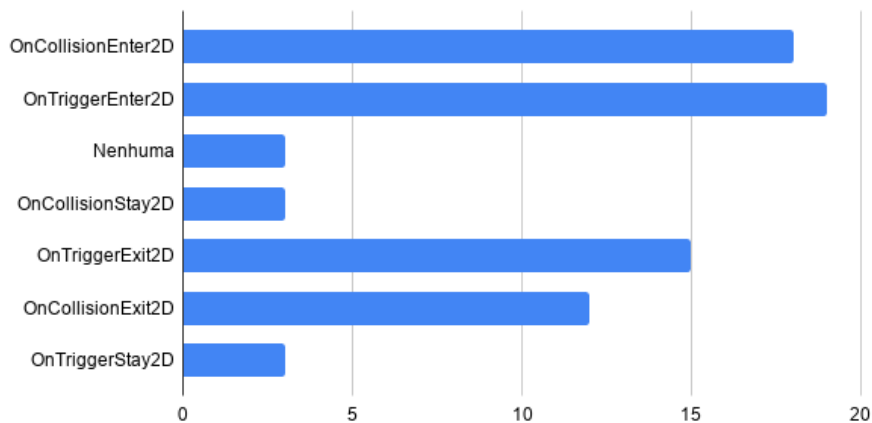

Figura 17: Frequência de uso de *Colliders* 2D.

5.2   RESULTADOS COM *BOX COLLIDER*

5.2.1   *BOX COLLIDER - PRE-RUNTIME*

Os resultados apresentaram uma progressão linear conforme o número de objetos foi aumentando com pequenas variações. Nos três primeiros testes com um, dez e cinquenta objetos, os resultados se mostram com performance estável, sem queda bruscas de quadros e sem uso intensivo de CPU e de memória RAM.

A partir de cem objetos, apesar de ainda não haver uso intenso de memória e CPU que afetem a jogabilidade, é possível perceber picos de *Garbage Collection*. Esses picos começam
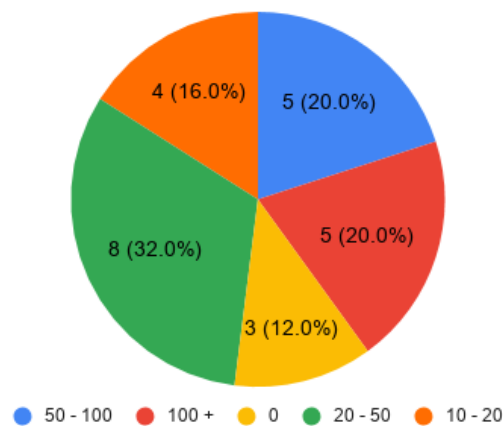
Figura 18: Frequência de uso de *Colliders* 2D.

a afetar a performance a partir dos quinhentos objetos, fazendo com que o uso total de CPU para calcular os quadros chega a 16 ms como mostrado na Figura 19, onde antes era de 0.25 ms a 1 ms, mostrado na Figura 20.
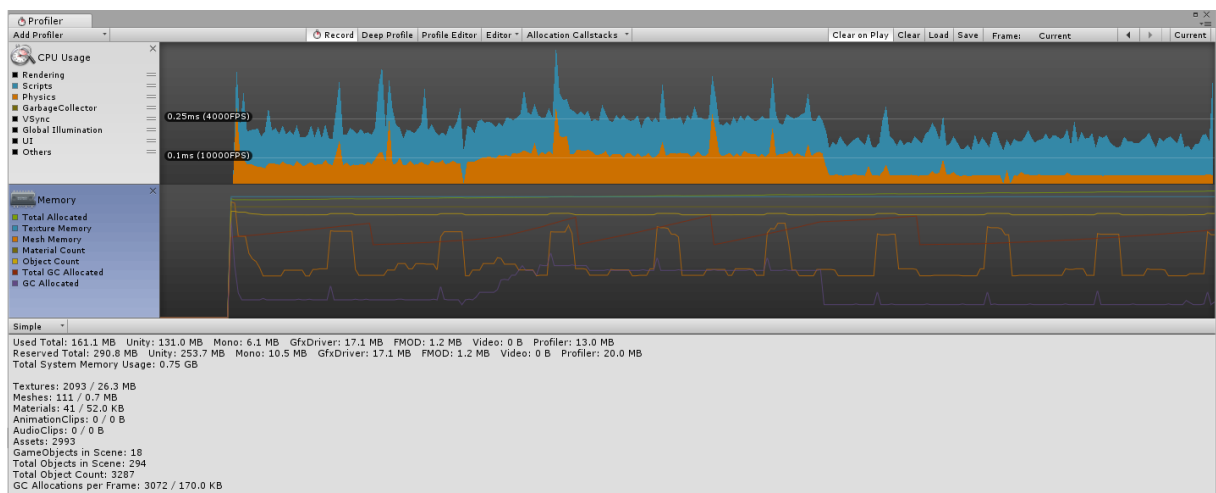
Figura 19: Resultado de performance de dez objetos com *box collider* em *Pre-Runtime*.

O resultado com mil objetos foi o mais instável, apresentando um aumento de consumo apenas certo tempo depois do início da execução, chegando a fazer o tempo de consumo total de CPU chegar a 66 ms e 0.65GB de uso total de memória RAM (em comparação com a margem de 200MB de RAM nos resultados anteriores) como mostrado na Figura 21.
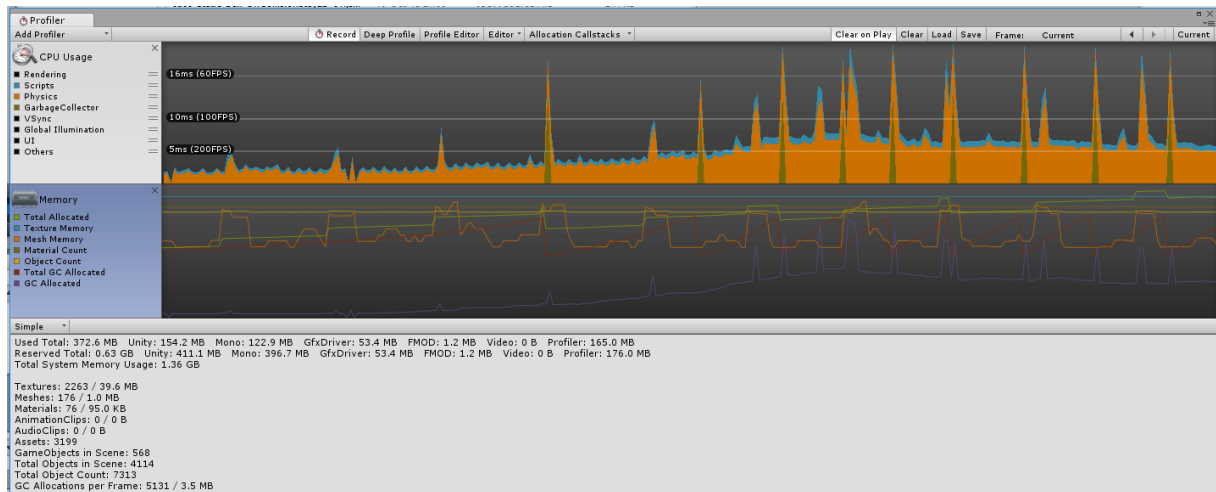
Figura 20: Resultado de performance de quinhentos objetos com *box collider* em *Pre-Runtime*.
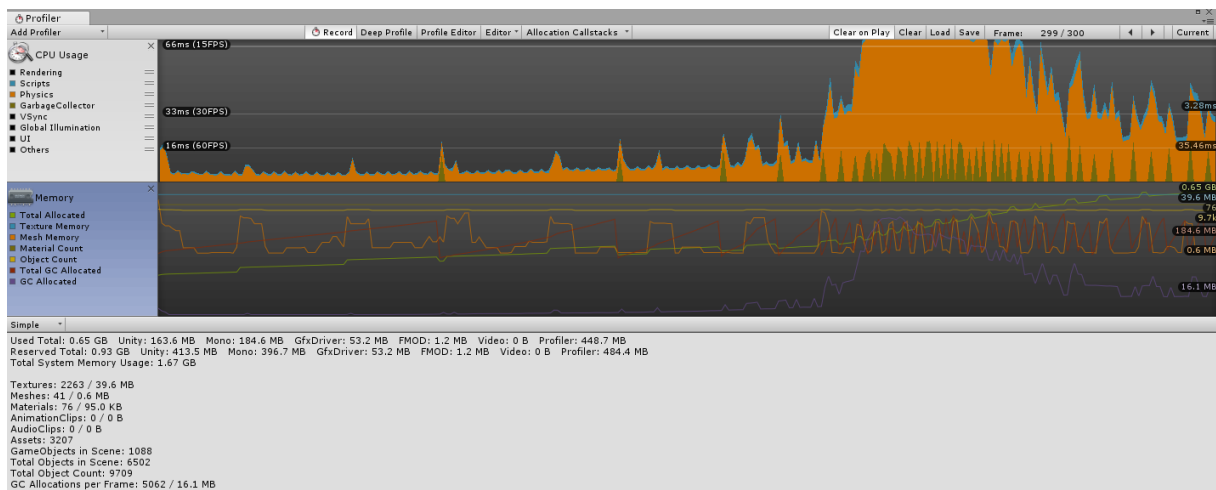
Figura 21: Resultado de performance de mil objetos com *box collider* em *Pre-Runtime*.

5.2.2   *BOX COLLIDER - RUNTIME*

Nos três primeiros testes com um, dez e cinquenta objetos por segundo, os resultados se mostram com performance estável, porém com picos de *Garbage Collection* contantes conforme os objetos eram invocados pelo script de invocação. O consumo total de memória RAM mostra ser menor do que os resultados em *Pre-Runtime*.

A partir de cem objetos por segundo, há uma queda brusca de performance. Foi gerada uma alta quantidade de *Garbage Collection*, taxa de uso de CPU passou o limite de 66 ms e 1.64GB de RAM total, como pode ser mostrado na Figura 23, o que afeta bastante a performance, a visualização e estabilidade do jogo. As demais comparações seguintes dessa subseção apresentaram resultados semelhantes, com o aumento de consumo após pouco tempo de execução.

Figura 22: Resultado de performance de dez objetos com *box collider* em *Runtime*.
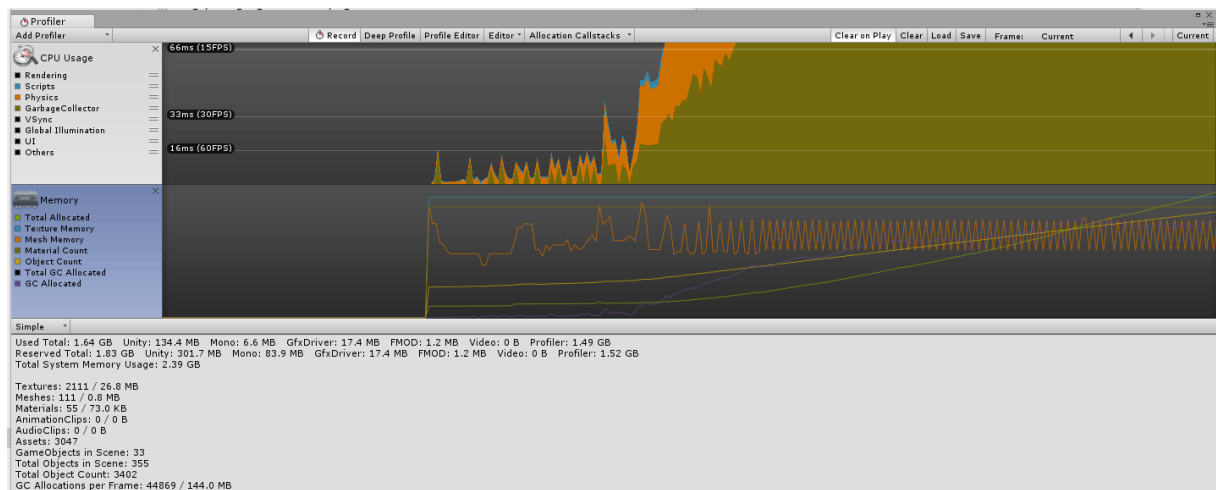
Figura 23: Resultado de performance de quinhentos objetos com *box collider* em *Runtime*.

5.3   RESULTADOS COM *CIRCLE COLLIDER*

5.3.1   *CIRCLE COLLIDER - PRE-RUNTIME*

Assim como nos resultados de *box collider*, as três primeiras comparações se mostraram estáveis nas suas medidas, com tempo de uso de CPU entre 0.25 ms e 1 ms e consumo total de memória RAM em cerca de 250 MB como mostrado na Figura 24.

A partir de 100 objetos em diante, o resultado mostra o início de picos de *Garbage Collection*, que aumentam drasticamente de acordo com o número de objetos na cena. No entanto, com mil objetos, o resultado se mostra estável no início, porém com o aumento de colisões entre os objetos, a quantidade de *Garbage Collection* aumenta, como mostrado na Figura 25, deixando a performance relativamente baixa. Ela mostra-se melhor do que a mesma situação com *box collider*. Logo em seguida, o *Garbage Collection* diminui, e a performance

Figura 24: Resultado de performance de cinquenta objetos com *circle collider* em *Pre-Runtime*.

se estabiliza. O *circle collider* apresentou mais *Garbage Collection* que o *box collider*.

Figura 25: Resultado de performance de mil objetos com *circle collider* em *Pre-Runtime*.

5.3.2 *CIRCLE COLLIDER - RUNTIME*

Segue os mesmos padrões de resultado de *box collider*. porém, os picos de *Garbage Collection* só se tornam mais presentes a partir de 50 objetos por segundo na cena. E até esse ponto, o resultado ainda se mostra estável, com consumo de CPU variando de 1 ms a 5 ms e memória RAM total em cerca de 240 MB, como mostrado na Figura 26.

A partir de cem objetos por segundo, os resultados se assemelham aos cenários com *box collider*, com exceção do consumo total de memória RAM, que teve um aumento significativo de 240 MB com cinquenta objetos, para 1.5 GB, como mostrado na Figura 27. No entanto, os resultados seguintes mostram consumo de total memória RAM semelhante ao próprio,

Figura 26: Resultado de performance de cinquenta objetos com *circle collider* em *Runtime*.

mesmo com o aumento do número de objetos.
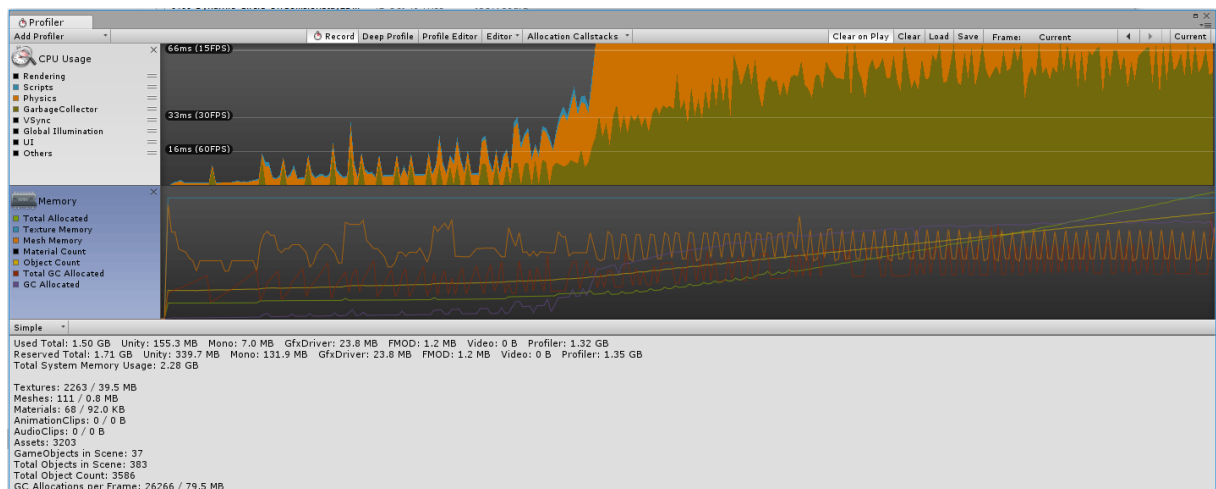
Figura 27: Resultado de performance de cem objetos com *circle collider* em *Runtime*.

5.4   RESULTADOS COM *EDGE COLLIDER*

5.4.1   *EDGE COLLIDER - PRE-RUNTIME*

Os resultados com esse tipo de *collider* mostraram-se estáveis em todos os cenários, tendo baixo consumo de processamento, que com mil objetos chegou a 1 ms, e uso total de memória RAM com pouca variação em comparação com os outros *colliders*, variando entre 250 MB e 350 MB para até 500 objetos, e cerca de 450 MB para mil objetos como demonstrado pela Figura 28.

No entanto foi o que demonstrou a menor precisão em como as colisões ocorrem. Os objetos, mesmo com *rigid body*, se sobrepunham uns entre os outros. Além disso, como esse
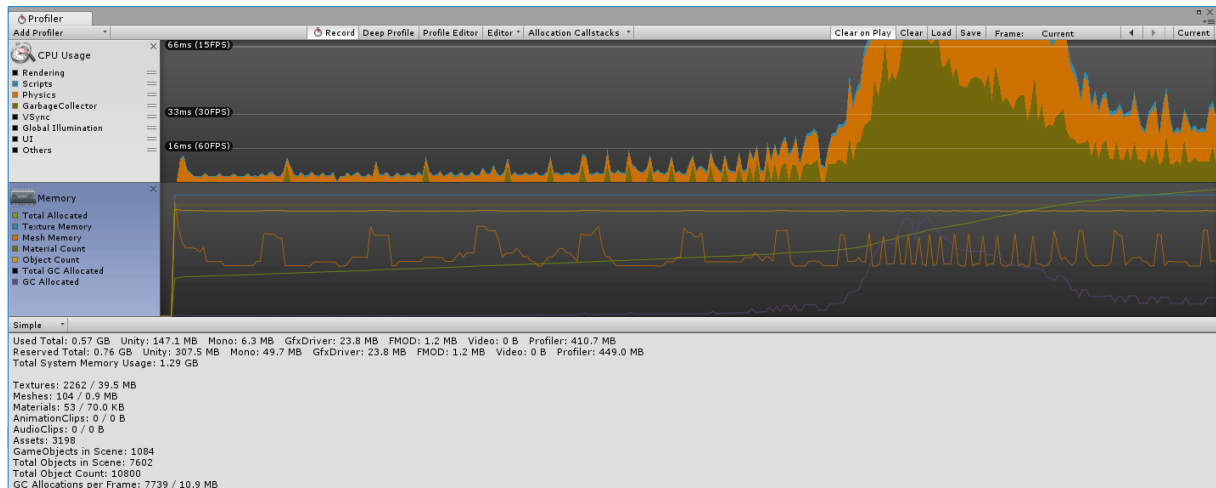
Figura 28: Resultado de performance de mil objetos com *edge collider* em *Pre-Runtime*.

tipo de *collider* consiste de uma linha contínua, não é apropriado para o uso de personagens ou objetos que requerem uma interação mais dinâmica. Esse tipo de *collider* é mais apropriado para terrenos e plataformas que não requerem uma interação além de uma parte da superfície. Outro problema observado pelo uso de muitos objetos com *edge collider* na mesma cena é que alguns deles podem atravessar outros objetos, mesmo estando com *rigidbody*. Esses problemas podem ser vistos por meio da Figura 29
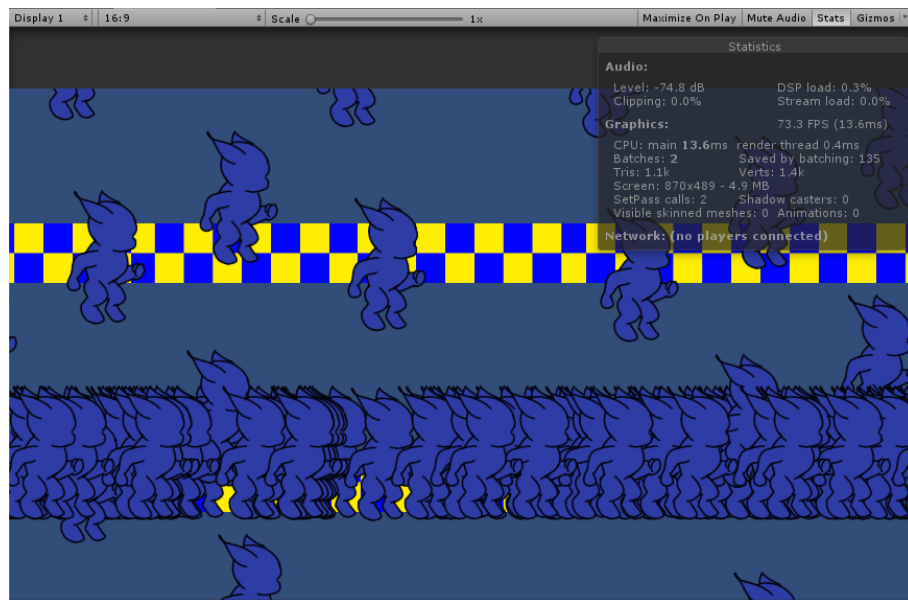
Figura 29: Problemas de colisão causados pelo uso do tipo *edge collider* em *Pre-Runtime*.

5.4.2   *EDGE COLLIDER - RUNTIME*

Os resultados nessa categoria mostraram-se estáveis em seu percurso, tendo mais performance do que os resultados em *Pre-Runtime*. Com mil objetos por segundo, o tempo de uso

de CPU ficou entre 5 ms e 10 ms, e consumo total de memória RAM em cerca de 320 MB, como mostra a Figura . Picos de *Garbage Collection* começam a ser mais frequentes a partir de cem objetos por segundo.

Figura 30: Resultado de performance de mil objetos por segundo com *edge collider* em *Runtime*.

5.5 RESULTADO COM *POLYGON COLLIDER*

O *Polygon Collider* é o tipo de *collider* que oferece a melhor precisão de colisão em comparação aos outros. No entanto, é o que requer mais uso de recursos, o que resulta em uma performance baixa se usado com muita frequência.

Devido a isso, os resultados em Runtime a partir de 50 objetos já demonstraram uma queda brusca na performance. Com 100 objetos ou mais não foi possível realizar as medições, pois o programa não respondeu mais ao iniciar a execução.

5.5.1 *POLYGON COLLIDER - PRE-RUNTIME*

Os resultados com um e cem objetos, demonstram boa estabilidade de consumo de recursos, mantendo o tempo de consumo total da CPU entre 0.1 ms e 1 ms, como mostra a Figura 31. O consumo total de memória RAM variou entre 270 MB e 180 MB.

A partir de 50 objetos, houve um consumo maior de CPU, fazendo o tempo total de uso da mesma ser entre 5 ms a 16 ms. No entanto, apesar do consumo total de memória RAM se manteve estável como mostra a Figura 32, a performance começa a cair gradativamente.

Com cem objetos a performance diminui pouco, relativamente ao resultado anterior. O consumo total de memória RAM se mantém, e o tempo de consumo da CPU teve um pico de
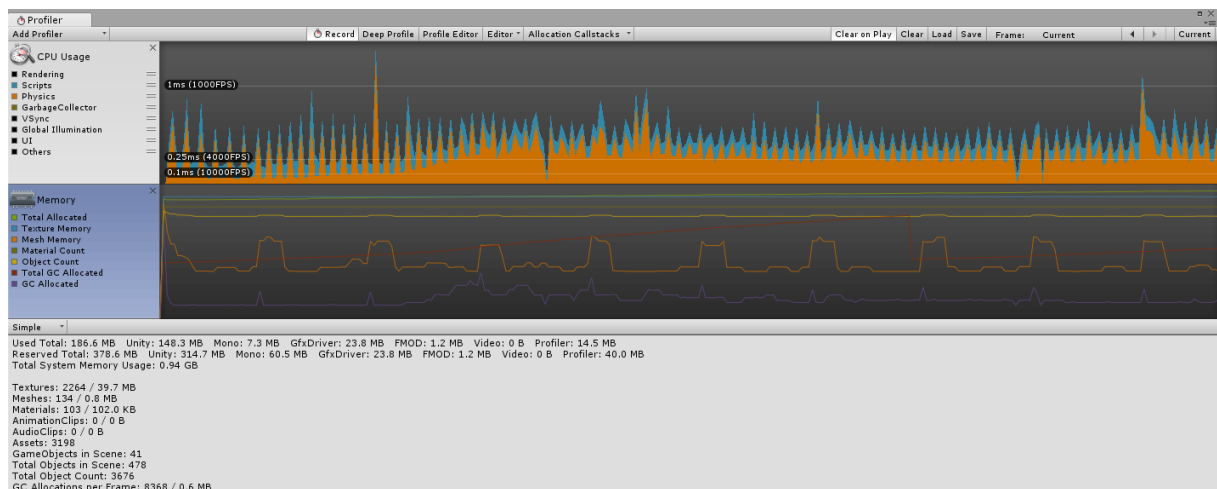
Figura 31: Resultado de performance de dez objetos com *polygon collider* **em** *Pre-Runtime***.**
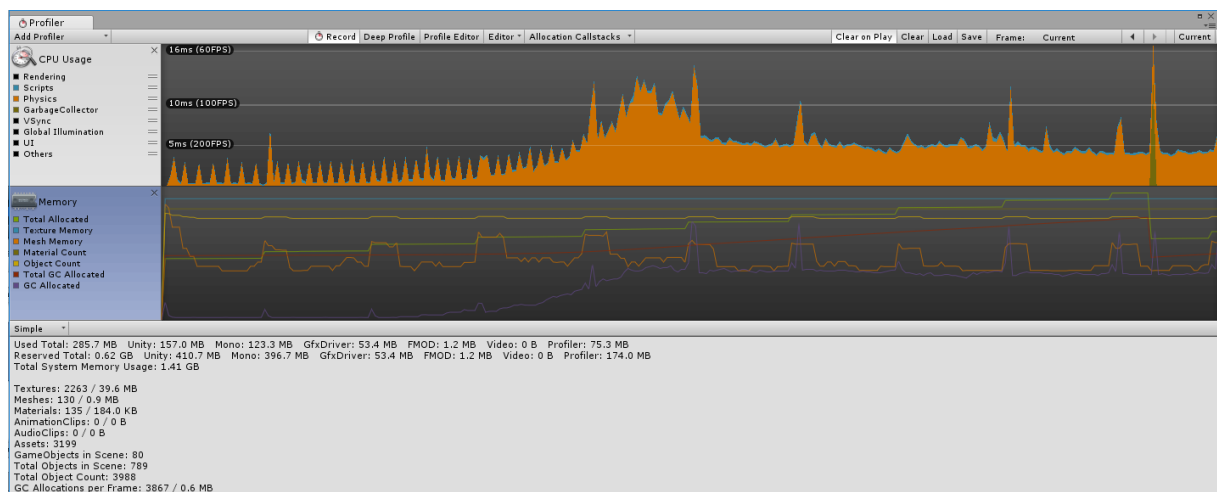
Figura 32: Resultado de performance de cinquenta objetos com *polygon collider* **em** *Pre-Runtime***.**

66 ms, porém, em sua maioria, manteve estável entre 33 ms e 16 ms como mostra a Figura .
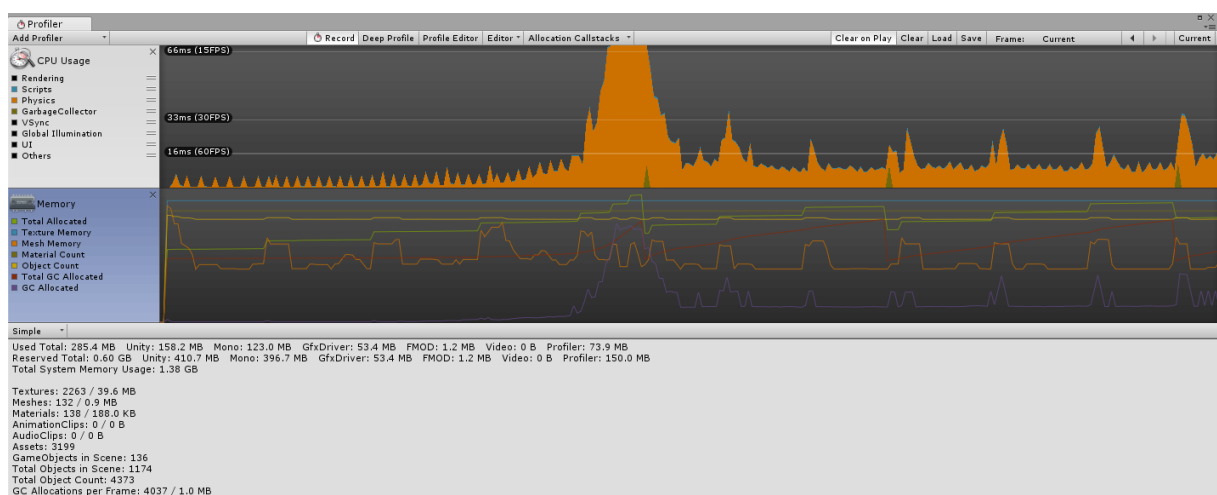
Figura 33: Resultado de performance de cem objetos com *polygon collider* **em** *Pre-Runtime***.**

Os resultados com quinhentos e mil objetos demonstraram uma queda drástica na performance, além de uso elevado dos recursos, com consumo total de memória RAM sendo de 0.99 GB e 1.88 GB respectivamente, e em ambos o tempo de consumo de CPU passou de 66 ms, como mostra a Figura 34. Com mil objetos, a taxa de quadros por segundo se manteve em 0.6 (1638 ms), como mostra a Figura .
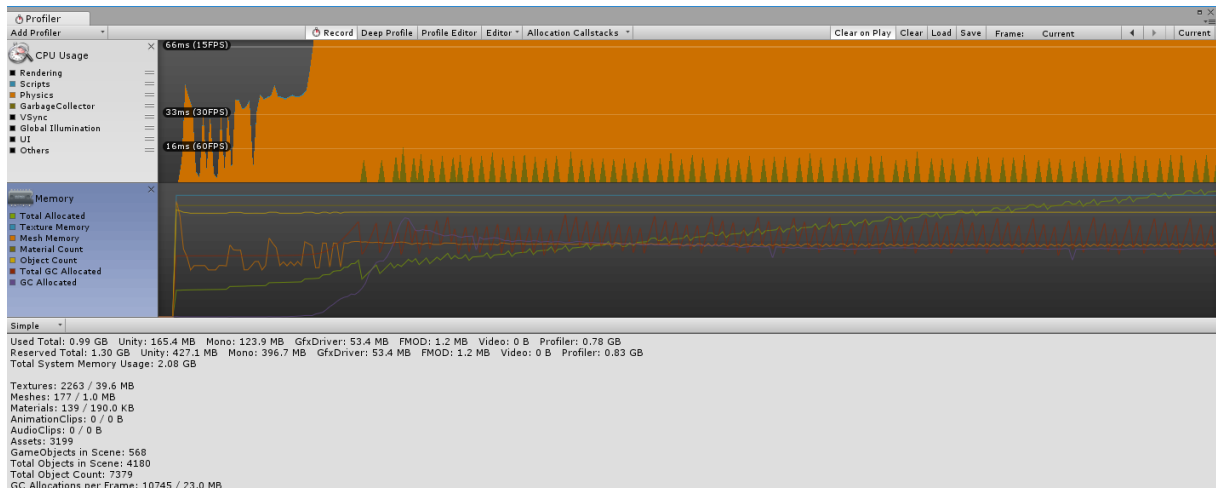

Figura 34: Resultado de performance de quinhentos objetos com *polygon collider* em *Pre-Runtime*.
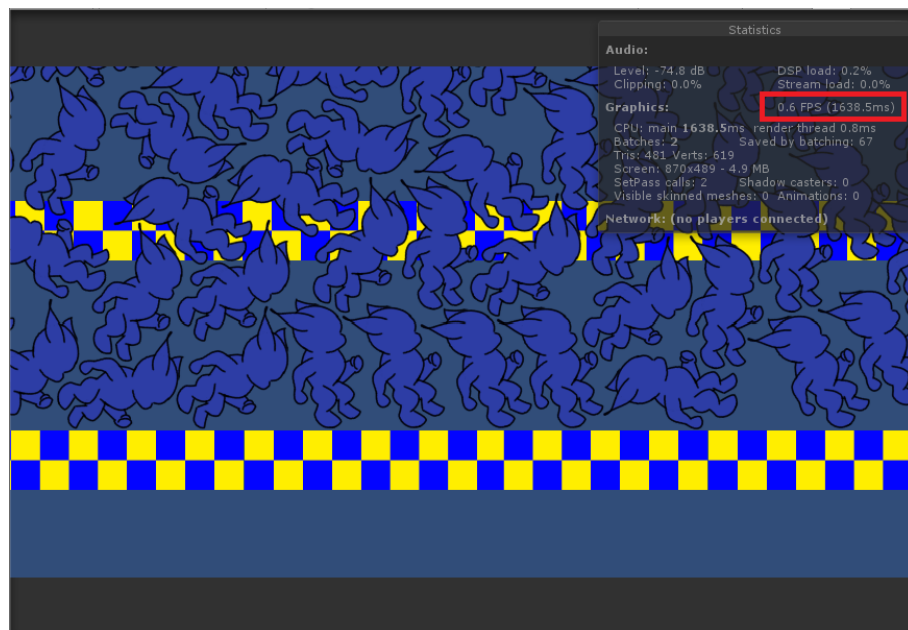
Figura 35: Captura de quadros por segundo média aproximada com *polygon collider* em *Pre-Runtime* e mil objetos.

5.5.2 *POLYGON COLLIDER - RUNTIME*

O resultado com um objeto por segundo foi relativamente estável, apresentando tempo de consumo de CPU com média de 1 ms e consumo total de memória RAM com 230 MB, como

mostra a Figura 36.
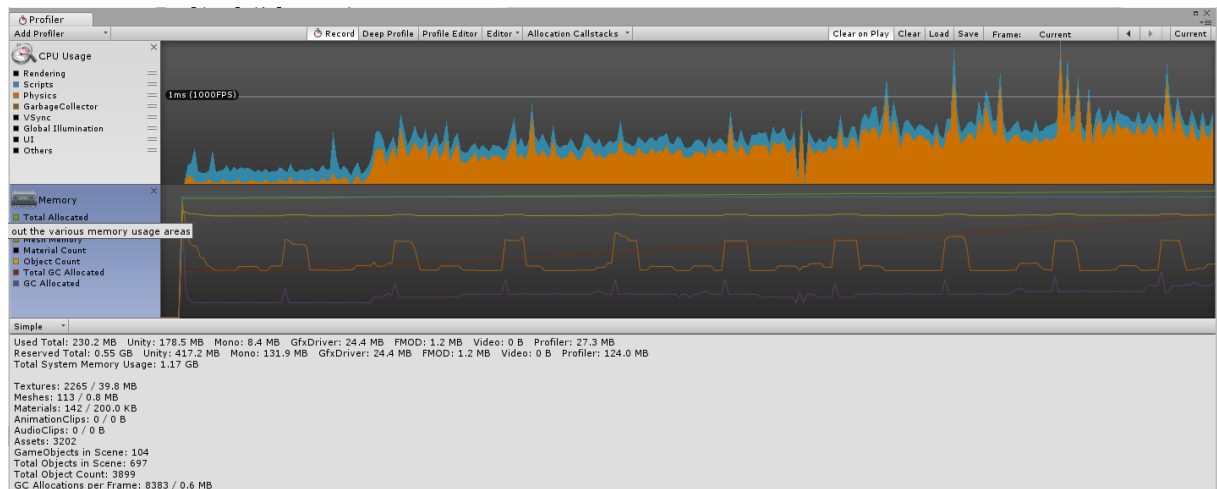
Figura 36: Resultado de performance de um objeto com *polygon collider* em *Runtime*.

A partir de 10 objetos por segundo a performance começa a cair conforme o tempo de execução passa e os objetos são inseridos. Inicialmente o tempo de consumo de CPU era de cerca de 16 ms, porém rapidamente passou de 66 ms como mostra a Figura 37. O consumo de memória RAM total foi de cerca de 500 MB.
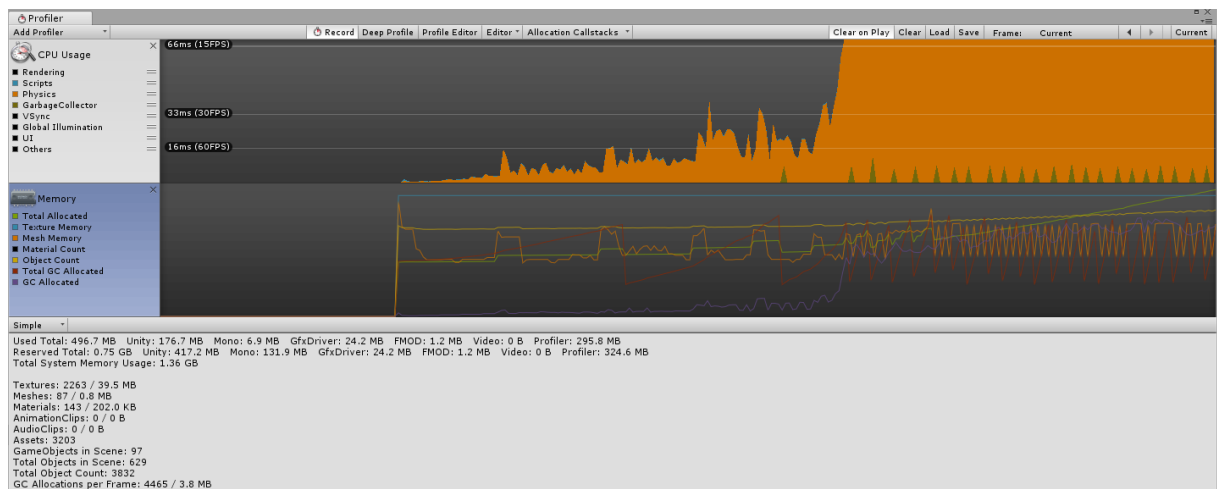
Figura 37: Resultado de performance de dez objetos com *polygon collider* em *Runtime*.

Com 50 Objetos, a performance é comprometida desde o início da execução, fazendo com que o programa travasse com frequência. O tempo de consumo de CPU que foi possível medir passou de 66 ms e consumo total de memória RAM de 335 MB como mostra a Figura 38 até ser encerrada a execução pelo programa por travar frequentemente. O programa indicou 0.8 quadros por segundo (1209 ms) como mostra a Figura e se manteve assim durante o resto da execução
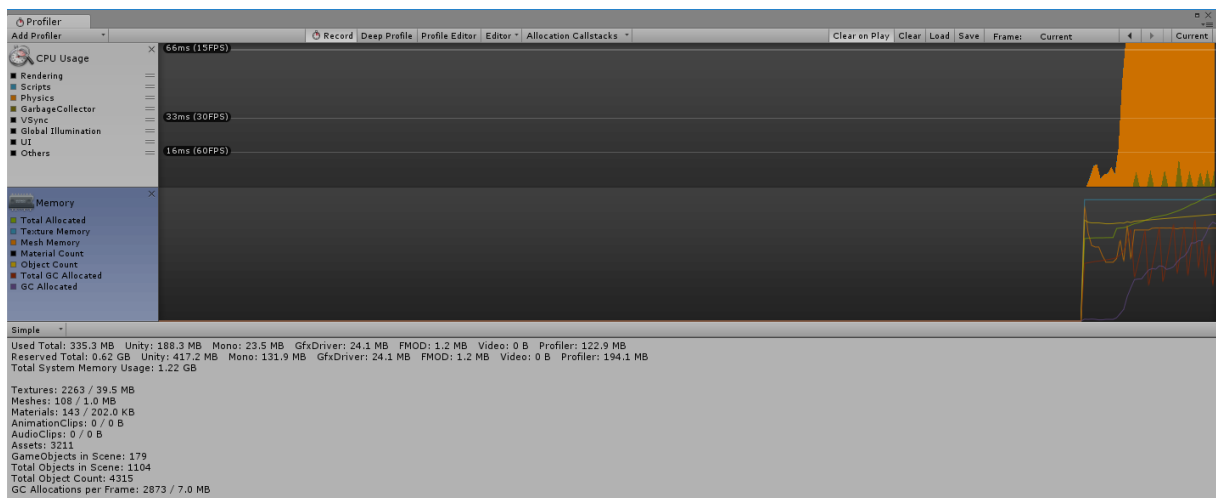
Figura 38: Resultado de performance de cinquenta objetos com *polygon collider* em *Runtime*.
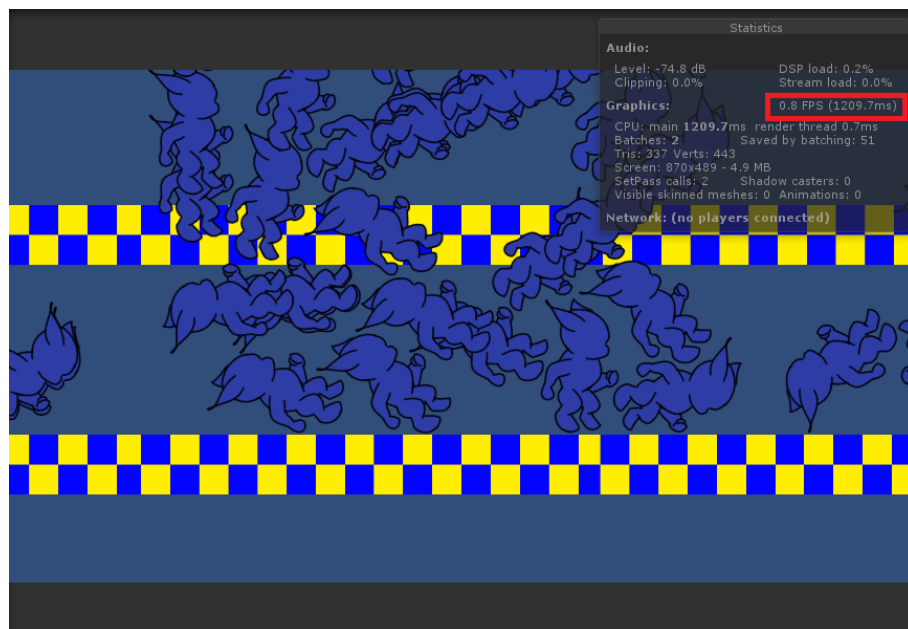
Figura 39: Captura de quadros por segundo média aproximada com *polygon collider* em *Runtime* e cinquenta objetos.

Com cem objetos por segundo, o programa inicia, porém não prossegue com a execução. Por manter-se parado dessa forma por um longo período de tempo, essa comparação foi cancelada e não foi possível obter resultados.

As comparações com quinhentos e mil objetos por segundo apresentaram o mesmo efeito e também foram cancelados.

6 CONSIDERAÇÕES FINAIS

6.1 IMPORTÂNCIA

As empresas de desenvolvimento de jogos independentes vem crescendo cada vez mais, e a requisição por jogos com melhores performances e desempenho também, já que na maioria das vezes essas empresas independentes são constituídas de pessoas com pouca experiência no desenvolvimento.

A *Unity* tem contribuído para ajudar no crescimento dessas empresas por ser uma *engine* de fácil burocracia e uso de desenvolvimento. Uma das características do desenvolvimento é uso de colisões de vários tipos. Apesar da documentação sobre colisões da *Unity* ser bem detalhada, ela não é completa em relação a performance, que é o intuito desse Trabalho de Conclusão de Curso.

6.2 RESULTADOS

É possível notar nos resultados que conforme o número de objetos ou número de objetos por segundo aumenta, há um aumento linear no consumo de recursos na maioria dos casos. Com poucos objetos (de um a cinquenta) já inseridos ou inseridos em tempo de execução, os resultados se mostraram semelhantes em cada tipo de *collider*. E algumas observações podem ser feitas.

O tipo de *Collider Edge* é melhor usado com elementos de terreno ou plataformas simples, pelo fato de ser apenas uma linha, e não um objeto com mais dimensão. O *Polygon Collider* é o que oferece a melhor precisão em termos de simulação, no entanto, por ser mais preciso, é o que mais exige recursos, que se usado sem cuidado pode afetar negativamente a performance do jogo.

Os *colliders* do tipo *box* e *circle* são os mais utilizados de acordo com a pesquisa de campo realizada e foram os que se mostraram mais estáveis, ambos em *Pre-Runtime* e *Runtime*. O *circle collider*, no entanto apresentou uma melhor performance gral, porém também foi o que

apresentou a maior coleta de lixo (*Garbage Collection*), o que pode indicar alguma falha de otimização desse *collider*, ou uma consequência de sua performance estável.

6.3 TRABALHOS FUTUROS

Melhorias podem ser realizadas nas comparações para obter ainda mais precisão para ser documentada, como mais de um tipo de *collider* ao mesmo tempo, usar os outros tipos de *colliders* mencionados, mais funções em execução, usar objetos com a propriedade *kinematic* ligada, comparações com *raycast*, *linecast* e *overlap*.

Também podem ser feitas melhorias na aquisição dos resultados, como adquirir quantidade de memória RAM para cara quadro e a quantidade de consumo de GPU.

As comparações também podem ser feitas com objetos e colisões em 3D.

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APÊNDICE A – QUESTIONÁRIO - PESQUISA DE CAMPO

APÊNDICE B – RESULTADOS DO QUESTIONÁRIO

APÊNDICE C – TABELAS DE RESULTADOS - *BOX COLLIDER*

C.1 *PRE-RUNTIME*

C.1.1 UM OBJETO

Tabela 5: 1 Objeto Pre-Runtime Box OnCollisionEnter2D

quadrosTotal	totalPercent	calls	totalTime	gcMemory
60				
	0.8%	1	0.13	0
70				
170				

Tabela 6: 1 Objeto Pre-Runtime Box OnCollisionStay2D

quadrosTotal	totalPercent	calls	totalTime	gcMemory
70	0.6%	1	0.09	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.01	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
80	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.01	0
90	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.1%	1	0.01	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
100				

170				

Tabela 7: 1 Objeto Pre-Runtime Box OnTriggerEnter2D

quadrosTotal	totalPercent	calls	totalTime	gcMemory
40				
	2.0%	1	0.34	32
50				
170				

Tabela 8: 1 Objeto Pre-Runtime Box OnTriggerExit2D

quadrosTotal	totalPercent	calls	totalTime	gcMemory
60				
	0.6%	1	0.10	0
70				
170				

Tabela 9: 1 Objeto Pre-Runtime Box OnTriggerStay2D

quadrosTotal	totalPercent	calls	totalTime	gcMemory
40				
	0.5%	1	0.09	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0

	0.0%	1	0.00	0
	0.0%	1	0.00	0
50	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.01	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
60	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
		1	0.00	0
170				

Tabela 10: 1 Objeto Pre-Runtime Box Physics2DSimulate

quadrosTotal	totalPercent	calls	totalTime	gcMemory
	1.4%	6	0.49	0
	0.6%	2	0.14	0
	0.6%	1	0.15	0

	1.8%	1	0.07	0
	0.5%	1	0.07	0
	0.4%	1	0.07	0
	0.4%	1	0.07	0
	0.4%	1	0.07	0
10	0.4%	1	0.07	0
	0.4%	1	0.07	0
	0.5%	1	0.08	0
	0.4%	1	0.07	0
	0.4%	1	0.07	0
	0.4%	1	0.07	0
	0.5%	1	0.08	0
	0.5%	1	0.07	0
	0.4%	1	0.08	0
	0.5%	1	0.08	0
20	0.5%	1	0.07	0
	0.4%	1	0.07	0
	0.4%	1	0.09	0
	0.5%	1	0.08	0
	0.5%	1	0.08	0
	0.4%	1	0.08	0
	0.5%	1	0.07	0
	0.4%	1	0.08	0
	0.5%	1	0.07	0
	0.4%	1	0.07	0
30	0.4%	1	0.07	0
	0.2%	1	0.07	0
	1.4%	1	0.13	0
	0.6%	1	0.07	0
	0.4%	1	0.07	0
	0.4%	1	0.08	0
	0.5%	1	0.08	0
	0.4%	1	0.08	0
	0.5%	1	0.08	0

	0.4%	1	0.08	0
40	0.4%	1	0.08	0
	0.4%	1	0.08	0
	0.5%	1	0.09	0
	0.6%	1	0.09	0
	3.2%	1	0.55	72
	1.4%	1	0.25	0
	0.6%	1	0.10	0
	0.5%	1	0.09	0
	0.5%	1	0.09	0
	0.6%	1	0.11	0
50	0.5%	1	0.09	0
	0.5%	1	0.09	0
	0.6%	1	0.10	0
	0.6%	1	0.11	0
	0.6%	1	0.09	0
	0.5%	1	0.09	0
	0.5%	1	0.09	0
	0.5%	1	0.09	0
	0.6%	1	0.09	0
	0.5%	1	0.09	0
60	0.5%	1	0.09	0
	0.5%	1	0.10	0
	0.3%	1	0.09	0
	0.8%	1	0.08	0
	0.7%	1	0.10	0
	0.5%	1	0.09	0
	0.6%	1	0.09	0
	1.2%	1	0.20	0
	0.5%	1	0.08	0
	0.5%	1	0.08	0
70	0.4%	1	0.07	0
	2.6%	1	0.41	3600
	1.6%	1	0.24	3600

	0.9%	1	0.16	3600
	0.9%	1	0.13	3600
	0.9%	1	0.15	3600
	0.8%	1	0.15	3600
	0.8%	1	0.14	3600
	0.8%	1	0.14	3600
80	0.8%	1	0.14	3600
	0.9%	1	0.14	3600
	0.8%	1	0.14	3600
	0.8%	1	0.14	3600
	0.9%	1	0.14	3600
	0.8%	1	0.14	3600
	0.8%	1	0.14	3600
	0.9%	1	0.14	3600
	0.8%	1	0.14	3600
	0.8%	1	0.14	3600
90	0.8%	1	0.14	3600
	0.9%	1	0.15	3600
	0.8%	1	0.14	3600
	0.5%	1	0.14	3600
	1.6%	1	0.20	3600
	2.1%	1	0.28	3600
	0.9%	1	0.14	3600
	0.9%	1	0.14	3600
	0.8%	1	0.14	3600
	0.8%	1	0.14	3600
100	0.8%	1	0.14	3600
	0.1%	1	0.02	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.01	0
	0.0%	1	0.00	0
	0.0%	1	0.01	0

	0.0%	1	0.00	0
	0.0%	1	0.01	0
	0.0%	1	0.01	0
110	0.0%	1	0.01	0
	0.0%	1	0.01	0
	0.0%	1	0.01	0
	0.0%	1	0.01	0
	0.0%	1	0.01	0
	0.0%	1	0.01	0
	0.0%	1	0.01	0
	0.0%	1	0.01	0
	0.0%	1	0.01	0
	0.0%	1	0.01	0
120	0.0%	1	0.00	0
	0.0%	1	0.01	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.1%	1	0.01	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
130	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.01	0
	0.0%	1	0.00	0
	0.0%	1	0.01	0
	0.0%	1	0.01	0
	0.0%	1	0.01	0
	0.0%	1	0.01	0
	0.0%	1	0.01	0
140	0.0%	1	0.01	0

	0.0%	1	0.01	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.01	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
150	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.01	0
	0.0%	1	0.01	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
160	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.01	0
	0.0%	1	0.00	0
	0.0%	1	0.01	0
	0.0%	1	0.01	0
	0.0%	1	0.00	0
	0.0%	1	0.01	0
	0.2%	1	0.01	0
170	0.0%	1	0.01	0
	0.0%	1	0.00	0
	0.0%	1	0.01	0
	0.0%	1	0.01	0
	0.0%	1	0.00	0

	0.0%	1	0.00	0

C.1.2 DEZ OBJETOS

Tabela 11: 10 Objetos Pre-Runtime Box OnCollisionEnter2D

quadrosTotal	totalPercent	calls	totalTime	gcMemory
70	0.0%	1	0.00	0
	0.0%	2	0.00	0
	0.0%			
		1	0.00	0
	0.0%	4	0.00	0
	0.0%	4		
80			0.00	0
	0.0%	2		0
			0.00	
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0
90				
270				

Tabela 12: 10 Objetos Pre-Runtime Box OnCollisionExit2D

quadrosTotal	totalPercent	calls	totalTime	gcMemory
80				
	0.4%	2	0.07	0
		4	0.00	0
90				
100	0.0%			
		2	0.00	0

270				

Tabela 13: 10 Objetos Pre-Runtime Box OnCollisionS-tay2D

quadrosTotal	totalPercent	calls	totalTime	gcMemory
	0.0%	12	0.02	0
	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.01	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
10	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.01	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
20	0.0%	2	0.01	0

	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.01	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
30	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.01	0
	0.0%	2	0.00	0
	0.0%	2	0.01	0
40	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
50	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0

	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
60	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	
70	0.0%	2	0.00	0
		2	0.00	0
	0.0%			0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	3	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
80	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	6	0.00	0
	0.0%	10	0.00	0
	0.0%	14	0.00	0
	0.0%	10	0.00	0
	0.0%	10	0.00	0
	0.0%	12	0.00	0

	0.0%	12	0.00	0
90	0.0%	12	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	10	0.00	0
	0.0%	10	0.00	0
	0.0%	12	0.00	0
	0.0%	16	0.00	0
	0.0%	16	0.00	0
	0.0%	16	0.00	0
	0.4%	16	0.03	0
100	0.0%	16	0.00	0
	0.0%	16	0.00	0
	0.0%	16	0.00	0
	0.0%	16	0.00	0
	0.0%	16	0.00	0
	0.0%	16	0.00	0
	0.0%	16	0.00	0
	0.1%	16	0.00	0
	0.0%	16	0.00	0
	0.0%	14	0.00	0
110	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
120	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0

	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
130	0.0%	14	0.00	0
	0.2%	14	0.03	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
140	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
150	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0

	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
160	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.1%	14	0.00	0
	0.0%	14	0.02	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
170	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.01	0
	0.0%	14	0.00	0
	0.0%	14	0.00	
	0.0%	14	0.00	
		14	0.00	
180				
270				

Tabela 14: 10 Objetos Pre-Runtime Box OnTriggerEnter2D

quadrosTotal	totalPercent	calls	totalTime	gcMemory
40				
	1.0%	1	0.09	0
50	0.0%	1	0.00	0
	0.0%			
60		1	0.00	0
	0.0%			

		1	0.00	0
	0.0%	1		
70				
			0.00	0
	0.0%	1		0
80				
270				

Tabela 15: 10 Objetos Pre-Runtime Box OnTriggerExit2D

quadrosTotal	totalPercent	calls	totalTime	gcMemory
60				

	0.5%	1	0.09	0
70				
		1	0.00	0
	0.0%			
		1	0.00	0
80				
270				

Tabela 16: 10 Objetos Pre-Runtime Box OnTriggerStay2D

quadrosTotal	totalPercent	calls	totalTime	gcMemory

40				
	0.6%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
50	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
60	0.0%	3	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	3	0.00	0
	0.0%	3	0.00	0
		3	0.00	
	0.0%	3	0.00	0
	0.0%	2	0.00	0
	0.0%			0
70	0.0%	2	0.00	0
	0.0%	3	0.00	0
	0.0%	2	0.00	0
	0.0%	3	0.00	0

	0.0%	3	0.01	0
	0.0%	3	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	1	0.00	0
	0.0%	2	0.00	0
80	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.01	0
	0.0%	2	0.00	0
	0.0%	2	0.01	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
90	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.01	0
	0.0%	2	0.01	0
	0.0%	2	0.00	0
	0.0%	2	0.01	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.01	0
	0.0%	2	0.01	0
100	0.0%	2	0.00	0
	0.0%	2	0.01	0
	0.0%	2	0.01	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0

	0.0%	2	0.00	0
	0.0%	2	0.01	0
110	0.0%	2	0.01	0
	0.0%	2	0.01	0
	0.0%	2	0.00	0
	0.0%	2	0.01	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
120	0.0%	2	0.01	0
	0.0%	2	0.01	0
	0.0%	2	0.01	0
	0.0%	2	0.00	0
	0.0%	2	0.01	0
	0.0%	2	0.00	0
	0.0%	2	0.01	0
	0.1%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.01	0
130	0.0%	2	0.00	0
	0.0%	2	0.01	0
	0.0%	2	0.00	0
	0.0%	2	0.01	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.01	0
	0.0%	2	0.01	0
140	0.0%	2	0.00	0
	0.0%	2	0.01	0

	0.0%	2	0.01	0
	0.0%	2	0.00	0
	0.0%	2	0.01	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.01	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
150	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.01	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.01	0
	0.1%	2	0.01	0
160	0.1%	2	0.01	0
	0.0%	2	0.01	0
	0.0%	2	0.01	0
	0.0%	2	0.01	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.01	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.01	0
170	0.1%	2	0.00	0
	0.0%	2	0.01	0
	0.0%	2	0.01	0
	0.0%	2	0.01	0
		2	0.01	0
		2	0.00	0

		2	0.00	
		2	0.00	
180				
270				

Tabela 17: 10 Objetos Pre-Runtime Box Physics2DSimulate

quadrosTotal	totalPercent	calls	totalTime	gcMemory
	2.0%	6	0.77	42700
	2.0%	2	0.28	14200
	2.3%	1	0.19	7100
	1.0%	1	0.16	7100
	0.9%	1	0.16	7100
	1.0%	1	0.16	7100
	0.8%	1	0.14	7100
	1.0%	1	0.16	7100
10	0.9%	1	0.17	7100
	1.1%	1	0.17	7100
	1.0%	1	0.17	7100
	1.0%	1	0.17	7100
	0.9%	1	0.16	7100

	1.1%	1	0.17	7100
	0.9%	1	0.16	7100
	1.0%	1	0.16	7100
	1.0%	1	0.17	7100
	1.1%	1	0.18	7100
20	1.0%	1	0.17	7100
	1.0%	1	0.17	7100
	0.9%	1	0.17	7100
	1.0%	1	0.17	7100
	0.9%	1	0.16	7100
	1.0%	1	0.16	7100
	0.9%	1	0.16	7100
	1.1%	1	0.18	7100
	0.9%	1	0.17	7100
	0.5%	1	0.16	7100
30	3.3%	1	0.30	7100
	2.3%	1	0.30	7100
	1.0%	1	0.16	7100
	1.0%	1	0.17	7100
	0.9%	1	0.17	7100
	0.9%	1	0.14	7100
	0.8%	1	0.15	7100
	1.0%	1	0.16	7100
	0.9%	1	0.16	7100
	0.9%	1	0.15	7100
40	0.8%	1	0.14	7100
	0.6%	1	0.15	7100
	3.3%	1	0.30	7100
	1.9%	1	0.31	7100
	0.8%	1	0.14	7100
	2.6%	1	0.44	7100
	0.8%	1	0.13	7100
	0.8%	1	0.13	7100
	0.9%	1	0.16	7100

	0.8%	1	0.13	7100
50	0.8%	1	0.13	7100
	0.9%	1	0.15	7100
	0.8%	1	0.13	7100
	0.9%	1	0.16	7100
	0.9%	1	0.15	7100
	0.7%	1	0.14	7100
	0.9%	1	0.13	7100
	1.0%	1	0.16	7100
	1.0%	1	0.17	7100
	1.0%	1	0.17	7100
60	0.7%	1	0.18	7100
	1.4%	1	0.15	7100
	1.1%	1	0.17	7100
	1.3%	1	0.19	7100
	0.9%	1	0.15	7100
	1.4%	1	0.24	7100
	1.0%	1	0.17	7100
	1.0%	1	0.18	7100
	1.1%	1	0.18	7100
70	1.2%	1	0.19	10700
	1.1%	1	0.19	17800
	1.1%	1	0.19	17800
	1.2%	1	0.20	17800
	1.2%	1	0.19	17800
	1.1%	1	0.19	17800
	1.3%	1	0.20	21300
	1.2%	1	0.21	35500
	1.2%	1	0.20	35500
	1.3%	1	0.21	35500
80	1.3%	1	0.21	42700
	1.2%	1	0.21	42700
	1.3%	1	0.21	49800

	1.8%	1	0.31	56900
	1.3%	1	0.22	49800
	1.3%	1	0.22	49800
	1.5%	1	0.26	49800
	1.2%	1	0.21	42700
	1.3%	1	0.23	56900
	1.3%	1	0.22	56900
90	1.4%	1	0.22	56900
	0.7%	1	0.22	56900
	6.0%	1	0.44	56900
	1.8%	1	0.29	56900
	1.9%	1	0.28	56900
	1.6%	1	0.28	56900
	1.3%	1	0.22	56900
	1.3%	1	0.22	56900
	1.4%	1	0.23	56900
	0.9%	1	0.23	56900
100	2.6%	1	0.22	56900
	1.4%	1	0.23	56900
	1.3%	1	0.22	49800
	1.4%	1	0.22	49800
	1.3%	1	0.22	49800
	1.3%	1	0.23	49800
	1.3%	1	0.22	49800
	1.3%	1	0.21	49800
	1.2%	1	0.21	49800
	1.4%	1	0.21	49800
110	1.3%	1	0.21	49800
	1.2%	1	0.21	49800
	1.3%	1	0.21	49800
	1.3%	1	0.22	49800
	1.3%	1	0.21	49800
	1.2%	1	0.22	49800
	1.5%	1	0.22	49800

	1.2%	1	0.21	49800
	1.4%	1	0.22	49800
	1.1%	1	0.21	49800
120	1.3%	1	0.21	49800
	0.8%	1	0.21	49800
	2.4%	1	0.28	49800
	1.7%	1	0.21	49800
	1.3%	1	0.21	49800
	1.2%	1	0.21	49800
	1.3%	1	0.21	49800
	1.2%	1	0.22	49800
	1.3%	1	0.21	49800
	1.3%	1	0.21	49800
130	1.3%	1	0.21	49800
	1.3%	1	0.22	49800
	1.3%	1	0.22	49800
	1.3%	1	0.22	49800
	1.3%	1	0.22	49800
	1.3%	1	0.22	49800
	2.3%	1	0.38	49800
	1.2%	1	0.30	49800
	2.9%	1	0.23	49800
	1.2%	1	0.21	49800
140	1.3%	1	0.21	49800
	1.3%	1	0.21	49800
	1.3%	1	0.21	49800
	1.2%	1	0.21	49800
	1.3%	1	0.21	49800
	1.3%	1	0.23	49800
	1.3%	1	0.21	49800
	1.2%	1	0.21	49800
	1.3%	1	0.21	49800
	1.2%	1	0.21	49800
150	1.3%	1	0.21	49800

	1.2%	1	0.21	49800
	0.9%	1	0.22	49800
	2.6%	1	0.34	49800
	1.8%	1	0.21	49800
	1.2%	1	0.21	49800
	1.3%	1	0.21	49800
	1.3%	1	0.22	49800
	1.3%	1	0.23	49800
	1.3%	1	0.21	49800
160	1.3%	1	0.22	49800
	1.3%	1	0.21	49800
	1.2%	1	0.21	49800
	1.5%	1	0.28	49800
	1.4%	1	0.22	49800
	1.3%	1	0.21	49800
	1.2%	1	0.21	49800
	1.3%	1	0.21	49800
	0.9%	1	0.15	0
	0.7%	1	0.11	0
170	0.6%	1	0.11	0
	0.7%	1	0.12	0
	0.7%	1	0.11	0
	0.7%	1	0.12	0
	0.7%	1	0.12	0
	0.7%	1	0.12	0
	0.7%	1	0.11	0
	0.7%	1	0.12	0
	0.7%	1	0.12	0
	0.7%	1	0.12	0
180	0.9%	1	0.15	0
	0.7%	1	0.11	0
	0.7%	1	0.12	0
	0.4%	1	0.11	0
	1.3%	1	0.14	0

	1.7%	1	0.23	0
	0.7%	1	0.11	0
	0.7%	1	0.12	0
	0.7%	1	0.12	0
	0.6%	1	0.12	0
190	0.7%	1	0.12	0
	0.7%	1	0.12	0
	0.7%	1	0.12	0
	0.7%	1	0.12	0
	0.7%	1	0.11	0
	0.4%	1	0.12	0
	1.4%	1	0.12	0
	0.6%	1	0.11	0
	0.7%	1	0.12	0
	0.6%	1	0.11	0
200	0.7%	1	0.13	0
	1.0%	1	0.17	0
	0.7%	1	0.11	0
	0.6%	1	0.11	0
	0.8%	1	0.13	0
	0.7%	1	0.11	0
	0.7%	1	0.11	0
	0.7%	1	0.12	0
	1.1%	1	0.18	0
	0.7%	1	0.11	0
210	0.7%	1	0.12	0
	0.7%	1	0.12	0
	0.7%	1	0.12	0
	0.7%	1	0.12	0
	0.5%	1	0.12	0
	0.9%	1	0.10	0
	0.7%	1	0.12	0
	0.7%	1	0.12	0

	1.2%	2	0.21	0
220				
	0.6%	1	0.11	0
	0.7%	1	0.11	0
	0.8%	1	0.14	0
	0.6%	1	0.11	0
	0.7%	1	0.12	0
	0.6%	1	0.12	0
	0.7%	1	0.12	0
	0.7%	1	0.12	0
	0.7%	1	0.12	0
230	0.7%	1	0.12	0
	0.7%	1	0.12	0
	0.8%	1	0.12	0
	0.7%	1	0.12	0
	0.7%	1	0.12	0
	0.7%	1	0.12	0
	0.5%	1	0.12	0
	0.8%	1	0.12	0
	0.7%	1	0.12	0
	0.7%	1	0.11	0
240	0.7%	1	0.11	0
	0.7%	1	0.12	0
	0.7%	1	0.12	0
	0.7%	1	0.12	0
	0.7%	1	0.12	0
	0.4%	1	0.12	0
	1.7%	1	0.16	0
	1.0%	1	0.12	0
	0.7%	1	0.11	0
	0.7%	1	0.12	0
250	0.7%	1	0.11	0
	0.6%	1	0.12	0
	0.7%	1	0.11	0

	0.7%	1	0.12	0
	0.7%	1	0.12	0
	0.7%	1	0.12	0
	0.7%	1	0.12	0
	0.7%	1	0.12	0
	0.7%	1	0.12	0
	0.6%	1	0.12	0
260	0.8%	1	0.12	0
	0.7%	1	0.12	0
	0.7%	1	0.12	0
	0.7%	1	0.12	0
	0.7%	1	0.12	0
	0.7%	1	0.12	0
	0.7%	1	0.12	0
	0.7%	1	0.12	0
	0.7%	1	0.12	0
	0.7%	1	0.12	0
270	0.4%	1	0.12	0
	1.1%	1	0.12	0
	0.9%	1	0.11	0
	0.6%	1	0.11	0
	0.6%	1	0.10	0
	0.6%	1	0.11	0
	0.4%	1	0.11	0
	1.6%	1	0.22	0
	0.6%	1	0.11	0
	0.0%	1	0.12	0

C.1.3   CINQUENTA OBJETOS

Tabela 18: 50 Objetos Pre-Runtime Box OnCollisionEnter2D

quadrosTotal	totalPercent	calls	totalTime	gcMemory

60				
	0.0%	2	0.00	0
	0.0%	2	0.00	0
70				
	0.0%	4	0.00	0
	0.0%	6	0.00	0
80	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	6	0.00	0
	0.0%	4	0.00	0
	0.0%	8	0.00	0
	0.0%	6	0.00	0
	0.0%	4	0.00	0
	0.0%	4	0.00	0
90				
	0.0%	2	0.00	0

	0.1%	12	0.00	0
	0.0%	6	0.00	0
	0.0%	2	0.00	0
	0.0%	8	0.00	0
	0.0%	14	0.01	0
	0.0%	12	0.00	0
	0.0%	8	0.00	0
100				
	0.0%	6	0.00	0
	0.0%	4	0.00	0
	0.0%	4	0.00	0
	0.0%	8	0.00	0
	0.0%	2	0.00	0
	0.0%	10	0.00	0
	0.0%	10	0.00	0
110	0.0%	10	0.01	0
	0.0%	14	0.01	0
	0.0%	10	0.00	0
	0.0%	10	0.00	0
	0.0%	12	0.00	0
	0.0%	2	0.00	0
	0.0%	6	0.00	0
	0.0%	6	0.00	0
	0.0%	4	0.00	0
120	0.0%	8	0.00	0
	0.0%	6	0.00	0
	0.0%	4	0.01	0
	0.0%	6	0.00	0

	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%	4	0.00	0
130	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	8	0.00	0
	0.0%	2	0.00	0
	0.0%	8	0.00	0
140	0.0%	4	0.00	0
	0.0%	4	0.00	0
	0.0%	4	0.00	0
	0.0%	6	0.00	0
	0.0%	2	0.00	0
150				
	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%	2	0.00	0
160				

	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
170	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
180				
	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
190	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0

	0.0%	6	0.00	0
	0.0%	2	0.00	0
200	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
210	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
220	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0

	0.0%	2	0.00	0
230	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
240				
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0
250				
	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0
260	0.0%	2	0.00	0

	0.0%	2	0.00	0
	0.0%	2	0.01	0
270				
	0.0%	2	0.00	0
	0.0%	6	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
280				
	0.0%	2	0.00	0
	0.0%	4	0.01	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0

Tabela 19: 50 Objetos Pre-Runtime Box OnCollisionExit2D

quadrosTotal	totalPercent	calls	totalTime	gcMemory
80				

	0.8%	2	0.14	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	6	0.00	0
	0.0%	2	0.00	0
90				
	0.0%	4	0.00	0
	0.1%	12	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%	4	0.00	0
	0.0%	6	0.00	0
100	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	6	0.00	0
	0.0%	10	0.00	0
	0.0%	10		0
			0.00	
	0.0%	6	0.00	0
	0.0%	12	0.00	0
110				
	0.0%	10	0.00	0
	0.0%	4	0.00	0
	0.0%	6	0.00	0

	0.0%	8	0.00	0
	0.0%	4	0.00	0
	0.0%	6	0.00	0
	0.0%	2	0.00	0
120	0.0%	10	0.00	0
	0.0%	4	0.00	0
	0.0%	6	0.00	0
	0.0%	6	0.00	0
	0.0%	10	0.00	0
	0.0%	8	0.00	0
	0.0%	10	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%	8	0.00	0
130	0.0%	4	0.00	0
	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.01	0
	0.0%	8	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0
140	0.0%	10	0.00	0
	0.0%	6	0.00	0
	0.0%	4		0
			0.00	
	0.0%	2	0.00	0
	0.0%	6	0.00	0

	0.0%	2	0.00	0
150				
	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
160	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%			
		2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	4		0
170				
			0.00	
	0.0%	4	0.00	0
	0.0%	6	0.00	0
	0.0%	2	0.00	0
180				
	0.0%	2	0.00	0

	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	8	0.00	0
190	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	6	0.00	0
	0.0%	4	0.00	0
200	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	6	0.00	0
	0.0%	2	0.00	0
210	0.0%			
		2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0

	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
220	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	2		
230			0.00	0
	0.0%	2		0
			0.00	
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0
240				
	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0
250	0.0%	2	0.00	0

	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%			
		2	0.00	0
	0.0%			
		2	0.00	0
260	0.0%	2		
			0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
270	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0
280	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%	2	0.00	0

	0.0%	6	0.00	0
	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	2		0
			0.00	

Tabela 20: 50 Objetos Pre-Runtime Box OnCollisionStay2D

quadrosTotal	totalPercent	calls	totalTime	gcMemory
	0.1%	60	0.08	0
	0.1%	30	0.03	0
	0.1%	10	0.01	0
	0.1%	10	0.00	0
	0.0%	10	0.00	0
	0.0%	10	0.00	0
	0.1%	10	0.00	0
	0.0%	10	0.00	0
10	0.0%	10	0.06	0
	0.0%	10	0.06	0
	0.0%	10	0.01	0
	0.1%	10	0.00	0
	0.0%	10	0.00	0
	0.1%	10	0.01	0
	0.1%		0.01	
	0.1%	10	0.01	0
		10		0
	0.1%	10	0.01	0
20	0.0%	10	0.00	0
	0.0%	10	0.00	0
	0.0%	20	0.00	0
	0.0%		0.02	
		10	0.01	0

	0.0%	10		0
	0.0%	10	0.01	0
	0.0%	10	0.00	0
	0.0%	10	0.00	0
	0.0%	10	0.01	0
30	0.1%	10	0.00	0
	0.0%	10	0.01	0
	0.0%	10	0.00	0
	0.1%	10	0.01	0
	0.0%	10	0.00	0
	0.1%	10	0.01	0
	0.0%	10	0.00	0
	0.0%	10	0.00	0
	0.0%	10	0.00	0
	0.0%	10	0.01	0
40	0.1%	10	0.01	0
	0.1%	10	0.01	0
	0.1%	10	0.01	0
	0.0%	10	0.00	0
	0.0%	10	0.00	0
	0.0%	10	0.01	0
	0.1%	10	0.01	0
	0.0%	10	0.01	0
	0.0%	10	0.00	0
	0.0%	10	0.00	0
50	0.0%	10	0.01	0
	0.0%	10	0.01	0
	0.0%	10	0.00	0
	0.0%	10	0.00	0
	0.0%	10	0.01	0
	0.0%	10	0.01	0
	0.0%	10	0.00	0
	0.0%	10	0.00	0
	0.0%	10	0.01	0

	0.0%	10	0.00	0
60	0.0%	10	0.01	0
	0.0%	10	0.00	0
	0.0%	10	0.00	0
	0.0%	10	0.00	0
	0.0%	10	0.01	0
	0.0%	10	0.02	0
	0.0%	10	0.00	0
	0.4%	10	0.02	0
	0.0%	10	0.01	0
	0.1%	10	0.00	0
70	0.0%	10	0.01	0
	0.0%	10	0.00	0
	0.0%	12	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.01	0
	0.1%	14	0.02	0
	0.0%	14	0.00	0
	0.1%	14	0.02	0
	0.0%	18	0.00	0
	0.0%	24	0.00	0
80	0.0%	24	0.01	0
	0.0%	26	0.01	0
	0.0%	26	0.01	0
	0.0%	24	0.01	0
	0.0%	24	0.01	0
	0.0%	26	0.01	0
	0.0%	26	0.01	0
	0.1%	28	0.02	0
	0.0%	28	0.01	0
	0.0%	32	0.01	0
90	0.0%	36	0.01	0
	0.1%	40	0.01	0
	0.1%	44	0.02	0

	0.1%	44	0.02	0
	0.1%	44	0.02	0
	0.1%	50	0.02	0
	0.1%	44	0.02	0
	0.0%	82	0.04	0
	0.1%	44	0.05	0
	0.1%	50	0.05	0
100	0.6%	48	0.02	0
	0.1%	46	0.02	0
	0.1%	50	0.04	0
	0.2%	58	0.05	0
	0.3%	66	0.05	0
	0.1%	72	0.02	0
	0.2%	70	0.05	0
	0.2%	74	0.03	0
	0.2%	72	0.03	0
	0.2%	66	0.03	
110	0.2%		0.04	0
	0.2%	68	0.03	0
	0.2%	90		0
		128	0.04	
	0.2%		0.07	0
	0.4%	58		0
		68	0.02	0
	0.1%	82	0.05	0
	0.2%	90	0.03	0
	0.2%	84	0.03	0
120	0.2%	90	0.05	0
	0.3%	96	0.05	0
	0.3%	96	0.05	0
	0.3%	102	0.04	0
	0.3%	98	0.05	0
	0.3%	92	0.06	0
	0.3%	94	0.06	0

	0.4%	74	0.04	0
	0.3%	92	0.05	0
	0.2%	178	0.18	0
130	0.8%	90	0.12	0
	1.3%	86	0.04	0
	0.3%	78	0.04	0
	0.4%	74	0.07	0
	0.2%	72	0.03	0
	0.4%	74	0.06	0
	0.4%	74	0.04	0
	0.2%	76	0.04	0
	0.2%	76	0.05	0
	0.3%	80	0.04	0
140	0.2%	74	0.04	0
	0.2%	78	0.04	0
	0.2%	76	0.03	0
	0.2%	74	0.04	0
	0.2%	72	0.04	0
	0.2%	70	0.03	0
	0.2%	66	0.04	0
	0.2%	68	0.03	0
	0.3%	76	0.06	0
	0.3%	82	0.05	0
150	0.1%	80	0.04	
	0.2%	78	0.04	0
	0.2%	78	0.10	
	0.2%	72	0.04	0
	0.2%		0.04	0
			0.04	0
	0.3%	74		0
		78	0.07	0
	0.2%	84		0
	0.3%	84	0.05	0
160	0.3%	80	0.05	0

	0.2%	82	0.04	0
	0.1%	82	0.04	0
	0.1%	162	0.15	0
	0.6%	78	0.10	0
	1.3%	78	0.10	0
	0.2%	78	0.04	0
	0.2%	78	0.04	0
	0.2%	78	0.05	0
	0.5%	82	0.07	0
170	0.3%	82	0.06	0
	0.3%	82	0.06	0
	0.3%	84	0.05	0
	0.3%	82	0.04	0
	0.4%	80	0.06	0
	0.2%	80	0.04	0
	0.2%	82	0.04	0
	0.3%	78	0.05	0
	0.3%	74	0.05	0
	0.2%	72	0.04	0
180	0.3%	72	0.06	0
	0.3%	74	0.05	0
	0.2%	74	0.04	0
	0.2%	76	0.04	0
	0.2%	76	0.04	0
	0.3%	78	0.05	0
	0.3%	78	0.05	0
	0.3%	80	0.05	0
	0.2%	82	0.04	0
	0.2%	82	0.04	0
190	0.2%	82	0.03	0
	0.3%	82	0.05	0
	0.4%	80	0.08	0
	0.1%	82	0.04	0
	0.2%	74	0.05	0

	0.9%	72	0.07	0
	0.3%	70	0.05	0
	0.2%	72	0.04	0
	0.2%	72	0.03	0
	0.2%	72	0.03	0
200	0.2%	72	0.03	0
	0.2%	72	0.03	0
	0.2%	70	0.04	0
	0.3%	70	0.05	0
	0.2%	70	0.03	0
	0.2%	72	0.04	0
	0.2%	70	0.03	0
	0.3%	70	0.06	0
	0.2%	74	0.03	0
	0.2%	74	0.04	0
210	0.2%	72	0.04	0
	0.2%	72	0.04	0
	0.3%	68	0.06	0
	0.2%	68	0.04	0
	0.2%	70	0.04	0
	0.2%	70	0.04	0
	0.3%	70	0.04	0
	0.2%	68	0.04	0
	0.2%	68	0.04	0
	0.2%	68	0.04	0
220	0.2%	66	0.04	0
	0.2%	68	0.04	0
	0.2%	66	0.03	0
	0.2%	64	0.05	0
	0.8%	62	0.19	0
	0.6%	62	0.03	0
	0.2%	64	0.03	0
	0.2%	62	0.03	0
	0.5%	62	0.10	0

	0.2%	60	0.04	0
230	0.2%	58	0.03	0
	0.2%	58	0.04	0
	0.2%	60	0.04	0
	0.2%	60	0.04	0
	0.2%	60	0.04	0
	0.2%	60	0.03	0
	0.2%	64	0.04	0
	0.2%	66	0.03	0
	0.3%	66	0.05	0
	0.2%	68	0.04	0
240	0.2%	70	0.03	0
	0.1%	68	0.03	0
	0.2%	70	0.03	0
	0.1%	68	0.03	0
	0.3%	64	0.03	0
	0.2%	62	0.05	0
	0.2%	66	0.04	0
	0.2%	68	0.03	0
	0.4%	68	0.05	0
	0.2%	64	0.04	0
250	0.2%	64	0.04	0
	0.2%	64	0.04	0
	0.2%	64	0.03	0
	0.1%	64	0.03	0
	0.3%	64	0.06	0
	0.6%	66	0.03	0
	0.2%	62	0.03	0
	0.2%	62	0.04	0
	0.3%	62	0.05	0
	0.2%	64	0.03	0
260	0.2%	64	0.04	0
	0.3%	62	0.04	0
	0.2%	62	0.04	0

	totalPercent	calls	totalTime	gcMemory
	0.3%	62	0.05	0
	0.3%	58	0.04	0
	0.2%	56	0.04	0
	0.2%	58	0.04	0
	0.2%	60	0.04	0
	0.1%	60	0.03	0
	0.2%	58	0.03	0
270	0.2%	60	0.03	0
	0.3%	60	0.04	0
	0.2%	60	0.03	0
	0.2%	58	0.03	0
	0.2%	58	0.03	0
	0.2%	60	0.04	0
	0.2%	58	0.04	0
	0.2%	58	0.03	0
	0.3%	54	0.05	0
	0.2%	54	0.04	0
280	0.1%	56	0.02	0
	0.3%	54	0.05	0
	0.1%	54	0.03	0
	0.0%	52	0.02	0
	0.5%	56	0.09	0
	0.6%	52	0.03	0
	0.3%	48	0.05	0
	0.2%	48	0.03	0
	0.3%	48	0.06	0
	0.1%	48	0.02	0

Tabela 21: 50 Objetos Pre-Runtime Box OnTriggerEnter2D

quadrosTotal	totalPercent	calls	totalTime	gcMemory
40	0.5%	2	0.08	0

	0.0%	4	0.00	0
	0.0%			
50				
		4	0.00	0
60	0.0%			
		2	0.00	0
	0.0%	2	0.00	0
	0.0%	2		0
70				
			0.00	
	0.0%	4	0.00	0

80				
	0.0%	2	0.00	0
	0.0%	2	0.00	0
90	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
100				
	0.0%	2	0.00	0
	0.0%	2	0.00	0

110				
	0.0%	2	0.00	0
	0.0%	2	0.00	0
120				
	0.0%	2	0.00	0
	0.0%			
130				
		2	0.00	0
	0.0%			
		2	0.00	0
	0.0%	2		
140				

			0.00	0
	0.0%	2		0
150				
180				
			0.00	
	0.0%	2	0.00	0
190				
	0.0%	2	0.00	0
200				

210				
	0.0%	2	0.00	0
220				
260				
	0.0%	2	0.00	0
270				

280				

Tabela 22: 50 Objetos Pre-Runtime Box OnTriggerExit2D

quadrosTotal	totalPercent	calls	totalTime	gcMemory
60				
	0.5%	2	0.08	0
	0.0%			
70		4	0.00	0
	0.0%			
	0.0%			

80				
		4	0.00	0
		2		
	0.0%			
90				
			0.00	0
		2		0
	0.0%	2		
			0.00	
				0
	0.0%	2		0
100				
			0.00	
			0.00	
	0.0%	2	0.00	0

			0.00	0
110				
120	0.0%	2		
				0
130				
	0.0%	2	0.00	
140				0
	0.0%	2	0.00	

				0
	0.0%	2	0.00	
				0
150				
180				
	0.0%	2	0.00	
				0
190				
	0.0%	2	0.00	
				0
	0.0%	2	0.00	
				0
				0
				0
	0.0%	2	0.00	
200				
				0

210				
	0.0%	2	0.00	
			0	
220				
230				
		2	0.00	
			0	
240				
260				

	0.0%			
270		2	0.00	
				0
280				

Tabela 23: 50 Objetos Pre-Runtime Box OnTriggerStay2D

quadrosTotal	totalPercent	calls	totalTime	gcMemory
40				
	0.5%	2	0.09	0
	0.0%	2	0.00	0

	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
50	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	6	0.01	0
	0.0%	6	0.01	0
	0.0%	6	0.01	0
	0.0%	6	0.01	0
	0.0%	6	0.01	0
	0.0%	6	0.01	0
	0.0%	6	0.01	0
	0.0%	6	0.00	0
60	0.0%	6	0.01	0
	0.0%	10	0.00	0
	0.0%	10	0.01	0
	0.0%	10	0.00	0
	0.0%	8	0.01	0
	0.1%	8	0.00	0
	0.0%	10	0.00	0
	0.0%	12	0.00	0
	0.0%	12	0.00	0
	0.0%	12	0.00	0
70	0.0%	8	0.00	0
	0.0%	8	0.00	0
	0.0%	8	0.00	0
	0.0%	12	0.01	0
	0.1%	12	0.01	0
	0.0%	12	0.00	0
	0.0%	12	0.00	0

	0.0%	12	0.02	0
	0.1%	12	0.00	0
	0.0%	12	0.00	0
80	0.0%	12	0.00	0
	0.0%	12	0.00	0
	0.0%	12	0.00	0
	0.0%	12	0.00	0
	0.0%	8	0.00	0
	0.0%	10	0.00	0
	0.0%	10	0.00	0
	0.0%	10	0.00	0
	0.0%	10	0.00	0
	0.0%	30	0.00	0
90	0.0%	12	0.00	0
	0.0%	12	0.00	0
	0.0%	14	0.00	0
	0.0%	16	0.00	0
	0.0%	16	0.00	0
	0.0%	30	0.00	0
	0.0%	16	0.00	0
	0.1%	16	0.03	0
	0.3%	16	0.02	0
	0.0%	14	0.00	0
100	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%		0.00	0
	0.0%	14	0.00	0
110	0.0%	26	0.00	0

	0.0%	14	0.01	0
	0.0%	14	0.01	0
		14		
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	16	0.00	0
	0.0%	16	0.00	0
	0.0%	16	0.00	0
120	0.0%	16	0.00	0
	0.0%	18	0.00	0
	0.5%	16	0.00	0
	0.0%	16	0.00	0
	0.0%	16	0.00	0
	0.0%	16	0.00	0
	0.0%	16	0.01	0
	0.0%	32	0.00	0
	0.0%	16	0.00	0
	0.1%	18	0.02	0
130	0.5%	18	0.05	0
	0.0%	18	0.00	0
	0.0%	18	0.00	0
	0.0%	18	0.00	0
	0.1%	18	0.01	0
	0.0%	18	0.00	0
	0.0%	20	0.00	0
	0.0%	18	0.00	0
	0.0%	18	0.00	0
	0.0%	20	0.00	0
140	0.0%	20	0.00	0
	0.0%	20	0.00	0
	0.0%	20	0.00	0
	0.0%	20	0.00	0
	0.0%	20	0.00	0

	0.0%	20	0.01	0
	0.0%	18	0.01	0
	0.0%	18	0.01	0
	0.0%	16	0.00	0
	0.0%		0.00	0
150	0.0%	32	0.00	0
	0.0%		0.00	0
	0.0%	18		
		18	0.01	0
	0.0%	18		
		18	0.00	0
	0.0%	18	0.00	0
	0.0%	18	0.00	0
	0.0%	18	0.01	0
	0.0%	36	0.00	0
160	0.0%	18	0.00	0
	0.0%	18	0.01	0
	0.3%	18	0.02	0
	0.0%	18	0.01	0
	0.0%	18	0.00	0
	0.0%	18	0.01	0
	0.0%	18	0.01	0
	0.0%	18	0.01	0
	0.0%	18	0.01	0
	0.0%	18	0.01	0
170	0.0%	18	0.01	0
	0.0%	18	0.00	0
	0.0%	18	0.01	0
	0.0%	18	0.00	0
	0.0%	18	0.00	0
	0.0%	18	0.00	0
	0.0%	18	0.00	0
	0.0%	18	0.00	0
	0.0%	18	0.00	0

	0.0%	18	0.00	0
180	0.0%	18	0.00	0
	0.0%	18	0.00	0
	0.0%	18	0.00	0
	0.0%	18	0.00	0
	0.0%	18	0.00	0
	0.0%	18	0.00	0
	0.0%	18	0.00	0
	0.0%	18	0.00	0
	0.0%	18	0.00	0
	0.0%	20	0.00	0
190	0.0%	18	0.00	0
	0.0%	18	0.00	0
	0.0%	18	0.00	0
	0.0%	18	0.01	0
	0.1%	18	0.01	0
	0.0%	18	0.00	0
	0.0%	18	0.00	0
	0.0%	18	0.00	0
	0.1%	14	0.02	0
	0.0%	18	0.00	0
200	0.0%	18	0.00	0
	0.0%	14	0.01	0
	0.0%	16	0.00	0
	0.0%	14	0.00	0
	0.0%	16	0.00	0
	0.0%	16	0.00	0
	0.0%	16	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
210	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0

	0.1%	14	0.01	0
	0.0%	14	0.02	0
	0.1%	14	0.01	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
220	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	12	0.00	0
	0.3%	12	0.00	0
	0.5%	12	0.00	0
	0.0%	12	0.00	0
	0.0%	14	0.08	0
	0.0%	12	0.02	0
	0.1%	14	0.00	0
230	0.0%	14	0.00	0
	0.0%	14	0.02	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	12	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	12	0.00	0
240	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	12	0.00	0
	0.0%	12	0.00	0
	0.0%	12	0.00	0
	0.0%	12	0.00	0

	0.0%	12	0.00	0
	0.0%	12	0.00	0
	0.0%	12	0.00	0
250	0.0%	12	0.01	0
	0.0%	12	0.00	0
	0.0%	12	0.00	0
	0.0%	12	0.00	0
	0.0%	12	0.00	0
	0.3%	12	0.00	0
	0.0%	12	0.00	0
	0.0%	12	0.00	0
	0.0%	12	0.00	0
	0.0%	12	0.00	0
260	0.0%	12	0.00	0
	0.0%	12	0.02	0
	0.0%	12	0.00	0
	0.0%	12	0.00	0
	0.0%	12	0.00	0
	0.0%	12	0.00	0
	0.0%	12	0.00	0
	0.0%	12	0.00	0
	0.0%	12	0.00	0
	0.0%	12	0.00	0
270	0.0%	12	0.00	0
	0.0%	12	0.00	0
	0.0%	12	0.00	0
	0.0%	12	0.00	0
	0.0%	12	0.00	0
	0.0%	12	0.00	0
	0.0%	12	0.00	0
	0.0%	12	0.00	0
	0.0%	12	0.00	0
	0.0%	12	0.00	0
280	0.0%	12	0.00	0

	0.0%	12	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.1%	12	0.00	0
	0.0%	12	0.00	0
	0.6%	12	0.00	0
	0.0%	12	0.00	0
	0.1%	12	0.00	0
	0.0%	12	0.00	0

Tabela 24: 50 Objetos Pre-Runtime Box Physics2DSimulate

quadrosTotal	totalPercent	calls	totalTime	gcMemory
	3.8%	6	1.80	213300
	10.0%	3	0.86	106600
	2.0%	1	0.85	35500
	2.0%	1	0.32	35500
	1.9%	1	0.28	35500
	1.6%	1	0.29	35500
	1.7%	1	0.33	35500
	2.1%	1	0.27	35500
10	1.7%	1	0.28	35500
	1.6%	1	0.33	35500
	1.7%	1	0.28	35500
	2.1%	1	0.58	
	1.7%	1	0.58	35500
	1.6%	1		35500
	1.7%	1	0.28	35500
			0.32	35500
	1.5%	1	0.33	35500
	1.7%	1	0.33	
20	1.6%	1	0.28	35500
	3.1%	1	0.27	35500

		1	0.57	35500
	1.6%	1		35500
	1.6%		0.28	35500
	1.7%	1	0.33	35500
	1.8%	1	0.27	35500
	1.7%	1	0.31	35500
	1.0%	1	0.28	35500
	6.2%	1	0.27	35500
30	1.7%	1	0.33	35500
	1.9%	1	0.28	35500
	2.0%	1	0.33	35500
	1.7%	1	0.31	35500
	1.9%	1	0.33	35500
	1.7%	1	0.31	35500
	1.8%	1	0.33	35500
	1.7%	1	0.33	35500
	1.9%	1	0.33	35600
	1.8%	1	0.39	35500
40	1.9%	1	0.36	35500
	2.4%	1	0.33	35500
	2.1%	1	0.33	35500
	1.9%	1	0.29	35500
	1.8%	1	0.28	35500
	2.3%	1	0.37	35500
	1.7%	1	0.29	35600
	1.8%	1	0.34	35500
	1.9%	1	0.29	35500
	2.0%	1	0.33	35500
50	1.8%	1	0.33	35500
	1.7%	1	0.29	42700
	1.9%	1	0.37	35500
	2.0%	1	0.28	35500
	1.8%	1	0.33	35500
	1.7%	1	0.28	35500

	1.9%	1	0.34	35500
	1.8%	1	0.37	42700
	1.7%	1	0.28	35500
	2.0%	1	0.31	35500
60	1.7%	1	0.37	42700
	1.8%	1	0.33	35600
	1.1%	1	0.54	35500
	3.0%	1	0.40	35500
	1.8%	1	0.34	35500
	7.7%	1	0.31	35500
	2.3%	1	0.37	42700
	2.5%	1	0.30	35500
	1.8%	1	0.46	35500
	2.2%	1	0.37	35500
70	1.7%	1	0.33	106600
	2.0%	1	0.32	42700
	2.4%	1	0.38	49800
	1.9%	1	0.32	49800
	2.5%	1	0.37	49800
	2.0%	1	0.44	49800
	2.2%	1	0.46	64000
	2.5%	1	0.40	106600
	1.9%	1	0.46	85300
	2.2%	1	0.43	106600
80	2.5%	1	0.37	85300
	2.5%	1	0.46	85300
	2.3%	1	0.40	106600
	2.4%	1	0.42	85300
	2.2%	1	0.42	92400
	2.5%	1	0.46	99500
	3.2%	1	0.70	106600
	3.4%	1	0.47	106600
	2.6%	1	0.52	270200
	2.8%	1	0.48	128000

90	2.9%	1	0.53	135100
	2.8%	1	0.46	156400
	3.2%	1	0.73	170600
	3.2%	1	0.70	163500
	3.2%	1	0.52	170700
	3.4%	1	0.70	170600
	1.6%	2	0.70	156400
	3.0%	1	0.55	270200
	17.4%	1	0.56	270200
	3.5%	1	0.70	270200
100	3.2%	1	0.60	184800
	3.4%	1	0.66	184800
	4.8%	1	0.75	206200
	4.1%	1	0.65	241700
	4.1%	1	0.68	270200
	3.7%	1	0.69	277300
	4.0%	1		369700
	4.1%		0.74	277300
	3.8%	1	1.13	284400
	4.8%	2		291500
110	4.1%		0.63	298600
		1	0.75	
	3.8%	1	0.80	270200
	4.8%	1	0.78	500000
		1	0.73	369700
	3.3%	1	0.75	
	4.8%	1	0.75	277300
	4.0%	1	0.72	277300
	4.0%	1	0.70	327000
	4.8%	1	0.69	348400
120	4.8%	1	0.75	369700
	4.4%	1	0.73	362700
	5.8%	1	1.67	369700
	4.6%	1	2.03	376800

	4.6%	1	0.69	369700
	5.0%	1	0.70	369700
	4.2%	1	0.69	383900
	5.8%	2	0.72	398100
	4.1%	1	0.84	284400
	2.7%	1	0.65	362600
130	7.9%	1	0.69	376800
	20.7%	1	0.69	376800
	5.3%	1	0.69	369700
	4.0%	1	0.71	284400
	4.0%	1	0.68	700000
	5.8%	1	0.71	327000
	3.9%	1	0.67	305700
	4.2%	1	0.69	284400
	4.1%	2	0.66	284400
	3.8%	1	0.69	284400
140	4.2%	1	0.69	284400
	4.2%	2	0.69	291500
	4.1%	1	0.64	291500
	3.8%	1	0.70	270200
	4.2%	1	0.64	277300
	4.0%	1	0.61	277300
	3.8%	1		298600
	4.4%	1	1.20	277300
	4.0%	1		284400
	4.0%		0.66	255900
150	4.0%	2	0.69	270200
	3.8%		0.67	284400
	3.6%	1	0.69	284400
		1	1.51	284400
	5.9%	1	1.64	277300
		1	0.72	
	3.8%	1	0.72	500000
	3.8%	1	0.77	

	5.6%	1	0.76	277300
	5.6%	2	1.26	298600
160	4.1%	1	0.94	305700
	2.4%	1	0.89	305700
	6.6%	1	0.96	312800
	21.4%	1	0.87	298600
	4.7%	1	0.71	305700
	5.0%	1	0.72	305700
	6.4%	1	0.72	600000
	7.2%	1	0.71	291500
	5.3%	1	0.68	291500
	5.6%	1	0.67	284400
170	5.2%	1	0.67	277300
	4.4%	1	0.65	298600
	4.3%	1	0.63	298600
	4.3%	1	0.62	305700
	3.8%	1	0.65	305700
	4.2%	1	0.63	305700
	4.2%	1	0.64	298600
	3.8%	1	0.62	291500
	4.0%	1	0.61	291500
	4.1%	1	0.64	298600
180	3.7%	1	0.66	284400
	3.7%	1	0.65	291500
	3.9%	1	0.65	263000
	3.8%	1	0.66	263000
	3.7%	1	0.65	263000
	3.8%	1	0.65	270200
	3.8%	1	0.68	270200
	4.1%	1	1.17	277300
	3.9%	1	0.77	284400
	3.9%	1	0.63	291500
190	3.8%	1	0.68	291500
	4.0%	1	0.63	298600

	2.2%	1	0.65	298600
	3.9%	1	0.66	291500
	5.3%	1	0.63	284400
	15.6%	1	0.64	291500
	4.9%	1	0.72	298600
	4.0%	1	0.65	291500
	3.5%	1	0.68	291500
	4.2%	1	0.63	284400
200	3.8%	1	0.67	263000
	3.9%	1	0.72	270200
	3.6%	1	0.65	277300
	4.2%	1	0.65	277300
	4.3%	1	0.62	270200
	4.3%	1	0.65	277300
	4.2%	1	1.08	284400
	3.9%	1	1.15	270200
	3.7%	1	0.72	270200
	4.2%	1	0.91	263000
210	4.0%	1	0.97	263000
	4.3%	1	0.67	255900
	3.6%	1	0.65	277300
	3.9%	1	0.62	270200
	6.5%	1	0.72	270200
	7.0%	1	0.61	263000
	5.3%	1	0.56	270200
	4.3%	1	0.64	270200
	3.9%	1	0.60	255900
	3.8%	1	2.08	255900
220	3.8%	1	0.65	263000
	3.8%	1	0.60	263000
	4.3%	1	0.92	263000
	3.7%	1	0.60	255900
	3.8%	1	0.56	220400
	8.8%	1	0.63	248800

	19.3%	1	0.60	255900
	3.8%	1	0.65	248800
	3.9%	1	0.57	248800
	3.8%	1	0.57	241700
230	4.8%	1	0.56	234600
	4.1%	1	0.64	234600
	3.6%	1	0.56	227500
	3.8%	1	0.57	220400
	4.0%	1	0.64	234600
	3.9%	1	0.59	234600
	3.4%	1	0.59	234600
	3.5%	1	0.60	220400
	3.5%	1	0.59	220400
	3.2%	1	0.64	248800
240	3.5%	1	0.60	220400
	3.8%	1	0.71	213300
	3.6%	1	0.64	227500
	3.5%	1	0.66	241700
	3.2%	1	0.63	248800
	4.0%	1	0.62	248800
	4.0%	1	0.62	255900
	2.7%	1	0.64	263000
	5.5%	1	0.58	248800
	4.1%	1	0.57	248800
250	3.4%	1	0.60	248800
	4.0%	1	0.84	241700
	3.7%	1	1.02	241700
	4.9%	1	0.57	241700
	3.7%	1	0.59	227500
	3.9%	1	0.58	248800
	3.3%	1	0.56	248800
	3.6%	1	0.59	241700
	1.9%	1	0.57	227500
	18.4%	1	0.60	234600

260	3.4%	1	0.59	234600
	3.5%	1	0.62	227500
	3.4%	1	0.62	234600
	3.4%	1	0.62	220400
	3.5%	1	0.62	234600
	3.4%	1	0.61	241700
	3.4%	1	0.57	234600
	3.4%	1	0.57	213300
	3.7%	1	0.60	234600
	3.7%	1	0.59	227500
270	3.5%	1	0.64	227500
	3.9%	1	0.59	227500
	3.2%	1	0.55	227500
	3.6%	1	0.54	227500
	3.5%	1	0.59	227500
	3.7%	1	0.59	227500
	3.7%	1	0.55	220400
	3.5%	1	0.66	220400
	3.3%	1	0.54	220400
	3.7%	1	0.55	227500
280	3.7%	1	1.12	227500
	3.4%	1	0.58	220400
	2.9%	1	1.02	220400
	4.4%	1	0.60	220400
	3.2%	1	0.55	220400
	1.8%	1	0.58	213300
	5.9%	1	0.72	213300
	18.1%	1	0.53	213300
	3.7%	1	0.54	213300
	3.3%	1	0.58	213300

C.1.4 CEM OBJETOS

Tabela 25: 100 Objetos Pre-Runtime Box OnCollisionEnter2D

quadrosTotal	totalPercent	calls	totalTime	gcMemory
30				
	0.0%	8	0.00	0
	0.0%	4	0.00	0
40	0.0%			
		4	0.01	0
	0.0%	8	0.00	0
	0.0%	8	0.00	0
	0.0%	6		0
50			0.00	
	0.0%	4	0.00	0
	0.0%	4	0.00	0
	0.0%	6	0.00	0
	0.0%	4	0.00	0
	0.0%	10	0.00	0
	0.0%	6	0.00	0
	0.0%	20	0.01	0
	0.0%	12	0.00	0

	0.0%	6	0.00	0
60	0.1%	10	0.02	0
	0.0%	6	0.00	0
	0.1%	8	0.01	0
	0.1%	16	0.00	0
	0.0%	10	0.01	0
	0.0%	10	0.00	0
	0.0%	10	0.00	0
	0.0%	18	0.00	0
70	0.0%	30	0.01	0
	0.1%	24	0.02	0
	0.0%	12	0.00	0
	0.0%	8	0.00	0
	0.0%	18	0.00	0
	0.0%	10	0.00	0
	0.1%	6	0.01	0
	0.0%	8	0.00	0
	0.0%	4	0.00	0
	0.0%	16	0.00	0
80	0.0%	16	0.00	0
	0.0%	18	0.00	0
	0.0%	12	0.00	0
	0.0%	18	0.01	0
	0.0%	22	0.00	0
	0.0%	10	0.01	0
	0.2%	22	0.03	0
	0.0%	10	0.00	0
	0.0%	12	0.00	0
	0.0%	18	0.00	0
90	0.0%	22	0.00	0
	0.0%	20	0.00	0
	0.0%	24	0.01	0

	0.0%	14	0.00	0
	0.0%	20	0.00	0
	0.0%	8	0.00	0
	0.0%	18	0.00	0
	0.0%	8	0.00	0
	0.0%	4	0.00	0
	0.0%	18	0.00	0
100	0.0%	10	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%	4	0.00	0
	0.0%	6	0.00	0
	0.0%	10	0.00	0
	0.0%	6	0.00	0
	0.0%	6	0.00	0
	0.0%	8	0.00	0
	0.0%	4	0.00	0
110	0.0%	6	0.00	0
	0.0%	4	0.00	0
	0.0%	10	0.00	0
	0.0%	2	0.00	0
	0.0%	10	0.00	0
	0.0%	4	0.00	0
	0.0%	6	0.00	0
	0.0%	2	0.00	0
	0.0%	8	0.00	0
	0.0%	12	0.00	0
120	0.0%	6	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	6	0.00	0
	0.0%	6	0.00	0
	0.0%	2	0.00	0

	0.0%	2	0.00	0
	0.0%	8	0.00	0
	0.0%	4	0.00	0
130	0.0%	10	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%	10	0.00	0
	0.0%	6	0.00	0
	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	6	0.00	0
	0.0%	6	0.00	0
140	0.0%	4	0.00	0
	0.0%	6	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
150	0.0%	6	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	6	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0
160	0.0%	2	0.00	0

	0.0%	2	0.00	0
	0.0%	6	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%	12	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
170	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	8	0.00	0
	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%			
		10	0.00	0
	0.0%			
180		4	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	10	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%	4	0.00	0
	0.0%	2	0.00	0
190				
	0.0%	4	0.00	0
	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0

	0.0%	4	0.00	0
	0.0%	8	0.00	0
	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	6	0.00	0
200	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%	8	0.00	0
	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%	6	0.00	0
	0.0%	10	0.00	0
	0.0%	8	0.00	0
210	0.0%	6	0.00	0
	0.0%	10	0.00	0
	0.0%	8	0.00	0
	0.0%	6	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%	2	0.01	0
	0.0%	4	0.00	0
	0.0%	4	0.00	0
	0.0%	6	0.00	0
220	0.0%	6	0.00	0
	0.0%	4	0.00	0
	0.0%	8	0.00	0
	0.0%	4	0.00	0
	0.0%	4	0.00	0

	0.0%	2	0.00	0
230	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%	2		0
			0.00	
	0.0%	6	0.00	0
	0.0%	4	0.00	0
	0.0%	6	0.00	0
	0.0%	6	0.00	0
	0.0%	4	0.00	0
	0.0%	2	0.00	0
240	0.0%	10	0.00	0
	0.0%	6	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%	8	0.00	0
	0.0%	2	0.00	0
	0.0%	8	0.00	0
	0.0%	6	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0
250	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%	4	0.00	0
	0.0%	4	0.00	0
	0.0%	4	0.00	0
	0.0%	4	0.00	0
260	0.0%	2	0.00	0
	0.0%	4	0.00	0

	0.0%	6	0.00	0
	0.0%	2	0.00	0
	0.0%	6	0.00	0
	0.0%	4	0.00	0
	0.0%	6		0
			0.00	
	0.0%	2	0.00	0
270	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
280	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%	4	0.00	0
	0.0%	6	0.00	0
	0.0%	2		0
			0.00	
	0.0%	4	0.00	0
	0.0%	6	0.01	0
290	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%	4	0.00	0
	0.0%	2	0.00	0

	0.0%	4	0.00	0
	0.0%	2	0.00	0
300	0.0%	8	0.00	0

Tabela 26: 100 Objetos Pre-Runtime Box OnCollisionExit2D

quadrosTotal	totalPercent	calls	totalTime	gcMemory
40				
		2	0.13	0
50	0.0%			
	0.0%	2	0.00	0
	0.0%			0
	0.0%	4	0.00	
		6	0.00	0
	0.0%	4	0.00	0
	0.0%	10	0.00	0
	0.0%	2	0.00	0
	0.0%	12	0.00	0
				0
60				
	0.0%	4	0.00	
				0

	0.0%	2	0.00	
	0.0%	8	0.00	0
	0.0%	8	0.00	0
	0.0%	2	0.00	0
	0.0%	6	0.00	0
	0.0%	10	0.00	0
	0.0%	8	0.00	0
70	0.0%	8	0.00	0
	0.0%	10	0.00	0
	0.0%	6	0.00	0
	0.0%	6	0.00	0
	0.0%	10	0.00	0
	0.0%	18	0.00	0
	0.0%	8	0.00	0
	0.0%	14	0.00	0
	0.0%	12	0.00	0
	0.0%	8	0.00	0
80	0.0%	14	0.00	0
	0.0%	18	0.00	0
	0.0%	6	0.00	0
	0.0%	12	0.00	0
	0.0%	10	0.00	0
	0.0%	4	0.00	0
	0.0%	18	0.00	0
	0.0%	10	0.00	0
	0.0%	18	0.01	0
	0.0%	18	0.00	0
90	0.1%	6	0.00	0
	0.0%	16	0.00	0
	0.0%	12	0.00	0
	0.0%	14	0.00	0
	0.0%	4	0.00	0
	0.0%	14	0.00	0
	0.0%	4	0.00	0

	0.0%	8	0.00	0
	0.0%	18	0.00	0
	0.0%	22	0.02	0
100	0.1%	6	0.00	0
	0.0%	16	0.00	0
	0.0%	12	0.00	0
	0.0%	10	0.00	0
	0.0%	16	0.00	0
	0.0%	12	0.00	0
	0.0%	12	0.00	0
	0.0%	12	0.00	0
	0.0%	6	0.00	0
	0.0%	8	0.00	0
110	0.0%	8	0.00	0
	0.0%	4	0.00	0
	0.0%	6	0.00	0
				0
	0.0%	10	0.00	
	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%	4	0.00	0
	0.0%	8	0.00	0
120	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	8	0.00	0
	0.0%	4	0.00	0
	0.0%	8	0.00	0
	0.0%	8		0
	0.0%		0.00	
		2	0.00	0
	0.0%	6	0.00	0
130	0.0%	2	0.00	0

	0.0%	6	0.00	0
	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%	6	0.00	0
	0.0%	6	0.00	0
	0.0%	4	0.00	0
	0.0%	4		0
			0.00	0
140	0.0%	4		
			0.00	0
	0.0%	6	0.00	
	0.0%	6	0.00	0
	0.0%	2	0.00	0
	0.0%	6	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%	8	0.00	0
	0.0%	2	0.00	0
150	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%	4		0
			0.00	
	0.0%	2	0.00	0
	0.0%	6	0.00	0
	0.0%	4	0.00	0
	0.0%	4	0.00	0
	0.0%	2	0.00	0
				0
160	0.0%	4	0.00	
				0
	0.0%	6	0.00	
	0.0%	8	0.00	0
	0.0%	6	0.00	0

	0.0%	2	0.00	0
	0.0%			
		4	0.00	0
	0.0%			
170		8	0.00	0
	0.0%	2		
	0.0%			
			0.00	0
		4	0.00	0
	0.0%	4		0
		2		
			0.00	
	0.0%		0.00	0
				0
180	0.0%	2	0.00	
	0.0%	4	0.00	0
				0
	0.0%	4	0.00	
	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%	6	0.00	0
	0.0%	6	0.00	0
190	0.0%	8	0.00	0
	0.0%			0
	0.0%	2	0.00	0
		6	0.00	
	0.0%	6	0.00	0
	0.0%	6	0.00	0
	0.0%	6	0.00	0
	0.0%	12	0.00	0
	0.0%	4	0.00	0

	0.0%	10	0.01	0
200	0.0%	6	0.00	0
	0.0%	4	0.00	0
	0.0%	10	0.00	0
	0.0%	6	0.00	0
	0.0%	6	0.00	0
	0.0%	2	0.00	0
	0.1%	16	0.02	0
	0.0%	6	0.01	0
	0.0%	2	0.00	0
	0.0%	8	0.00	0
210	0.0%	8	0.00	0
	0.0%	8	0.00	0
	0.0%	6	0.00	0
	0.0%	8	0.00	0
	0.0%	4	0.00	0
	0.0%	6	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
				0
220				
	0.0%	8	0.00	
	0.0%	2	0.00	0
	0.0%	10	0.00	0
	0.0%	2	0.00	0
	0.0%			0
		6	0.00	0
	0.0%	8	0.00	
	0.0%	2		0
				0
230			0.00	0
	0.0%	6	0.00	
	0.0%			

		10	0.00	0
	0.0%	6	0.00	
	0.0%	8	0.00	0
	0.0%	6	0.00	0
	0.0%	2	0.00	0
	0.0%	8	0.00	0
	0.0%	4	0.00	0
240	0.0%	2	0.00	0
	0.0%	8	0.00	0
	0.0%	8	0.00	0
	0.0%	6	0.00	0
	0.0%	6	0.00	0
	0.0%	4	0.00	0
	0.0%	6	0.00	0
	0.0%	8	0.00	0
	0.0%	6	0.00	0
	0.0%	2	0.00	0
250	0.0%	4	0.00	0
	0.0%			
		2	0.00	0
	0.0%			
		4	0.00	0
	0.0%	6	0.00	0
	0.0%	6	0.02	0
	0.0%	10	0.00	0
	0.0%	4	0.00	0
260				0
	0.0%	6	0.00	
				0
	0.0%	2	0.00	
	0.0%	2	0.00	0
	0.0%	6	0.00	0
	0.0%	2	0.00	0

	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
270				0
	0.0%	4	0.00	0
	0.0%	2	0.00	
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2		0
			0.00	
	0.0%	2	0.00	0
280	0.0%	2	0.00	0
				0
	0.0%	2	0.00	
	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	6	0.00	0
290	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	6	0.01	0
	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0
300	0.0%	2	0.00	0

Tabela 27: 100 Objetos Pre-Runtime Box OnCollisionStay2D

quadrosTotal	totalPercent	calls	totalTime	gcMemory
	0.0%	20	0.01	0
	0.0%	20	0.00	0
	0.0%	20	0.00	0
	0.0%	20	0.01	0
	0.0%	20	0.06	0
	0.0%	20	0.00	0
	0.0%	20	0.06	0
	0.0%	146	0.01	0
	0.0%	146	0.01	0
10	0.3%	20	0.00	0
	0.3%	20	0.00	0
	0.0%	20	0.01	0
	0.0%	20	0.00	0
	0.0%	20	0.00	0
	0.0%	20	0.00	0
	0.0%	20	0.00	0
	0.0%	20	0.00	0
	0.0%	20	0.00	0
	0.0%	20	0.00	0
20	0.0%	20	0.01	0
	0.0%	20	0.00	0
	0.2%		0.00	
	0.0%	20	0.01	0
		20		0
	0.0%	40	0.01	0
	0.2%		0.01	
		20		0
	0.0%	20	0.00	0
	0.0%	20	0.00	0
30	0.0%	20	0.00	0
	0.0%	20	0.00	0

153

	0.0%	20	0.00	0
	0.1%	20	0.00	0
	0.0%	20	0.00	0
	0.2%	20	0.01	0
	0.2%	20	0.01	0
	0.2%	20	0.03	0
	0.3%	20	0.04	0
	0.0%	20	0.01	0
40	0.1%	20	0.00	0
	0.0%	28	0.00	0
	0.1%	50	0.00	0
	0.3%	32	0.01	0
	0.1%	32	0.06	0
	0.2%	32	0.06	0
	0.0%	32	0.04	0
	0.1%	50	0.04	0
	0.1%	32	0.01	0
	0.1%	34	0.01	0
50	0.1%	48	0.01	0
	0.1%	48	0.04	0
	0.1%	50	0.01	0
	0.1%	48	0.02	0
	0.1%	50	0.01	0
	0.1%	52	0.01	0
	0.2%	58	0.02	0
	0.2%	58	0.04	0
	0.1%	58	0.04	0
	0.2%	100	0.02	0
60	0.2%	62	0.03	0
	0.2%	70	0.02	0
	0.2%	88	0.03	0
	0.2%	94	0.04	0
	0.2%	100	0.03	0
	0.2%	94	0.04	0

	0.5%	100	0.04	0
	0.3%	84	0.07	0
	0.2%	84	0.05	0
	0.2%	92	0.04	0
70	0.3%	100	0.03	0
	0.3%	104	0.04	0
	0.3%	112	0.03	0
	0.3%	134	0.04	0
	0.3%	150	0.05	0
	0.4%	152	0.04	0
	0.4%	160	0.06	0
	0.3%	154	0.06	0
	0.3%	162	0.06	0
	0.3%	164	0.07	0
80	0.4%	156	0.06	0
	0.4%	152	0.08	0
	0.3%	160	0.08	0
	0.3%	148	0.06	0
	0.3%	160	0.07	0
	0.5%	148	0.07	0
	0.4%	154	0.06	0
	0.4%	160	0.08	0
	0.4%	172	0.05	0
	0.6%	178	0.06	0
90	0.3%	182	0.08	0
	0.5%	182	0.09	0
	0.6%	176	0.08	0
	0.5%	176	0.07	0
	0.6%	218	0.07	0
	0.6%	192	0.07	0
	0.5%	206	0.08	0
	0.6%	218	0.08	0
	1.8%	216	0.09	0
	0.6%	222	0.08	0

100	0.5%	226	0.10	0
	0.7%	218	0.12	0
	0.4%	218	0.08	0
	0.5%	218	0.20	0
	0.4%	162	0.09	0
	0.4%	202	0.09	0
	0.4%	162	0.10	0
	0.4%	190	0.12	0
	0.4%	184	0.08	0
	0.4%	174	0.08	0
110	0.8%	166	0.08	0
	0.8%	172	0.09	0
	0.5%	166	0.07	0
	0.3%	166	0.07	0
	0.4%	160	0.07	0
	0.5%	162	0.09	0
	0.4%	162	0.07	0
	0.4%	158	0.07	0
	0.8%	160	0.08	0
	0.4%	164	0.06	0
120	0.8%	166	0.07	0
	0.5%	166	0.07	0
	0.6%	166	0.09	0
	0.5%	170	0.07	0
	0.5%	170	0.08	0
	0.4%	170	0.12	0
	0.5%	168	0.08	0
	0.5%	172	0.10	0
	0.4%	182	0.08	0
	0.3%	184	0.07	0
130	0.5%	184	0.07	0
	0.5%	178	0.08	0
	0.5%	170	0.08	0
	0.4%	174	0.17	0

	0.6%	170	0.07	0
	0.7%	172	0.10	0
	0.5%	178	0.07	0
	0.5%	180	0.13	0
	2.1%	192	0.08	0
	0.5%	184	0.08	0
140	0.4%	192	0.09	0
	0.5%	180	0.08	0
	0.4%	186	0.08	0
	2.1%	186	0.08	0
	0.6%	186	0.10	0
	0.5%	184	0.08	0
	0.5%	192	0.09	0
	0.4%	190	0.08	0
	2.1%	192	0.07	0
	0.5%	196	0.08	0
150	0.4%	196	0.10	0
	0.4%	192	0.08	0
	0.5%	178	0.08	
	0.4%	188		0
		188	0.11	0
	0.3%	184	0.16	0
	2.1%	178	0.10	0
	0.4%	178	0.07	0
	0.4%	178	0.08	0
	0.4%	182	0.07	0
160	0.4%	178	0.08	0
	0.3%		0.10	0
	1.7%	176	0.18	0
	0.4%	178	0.07	0
	0.5%	346	0.09	0
	0.4%	172	0.10	0
	0.4%	170	0.07	0
	0.5%	174	0.09	0

	0.4%	188	0.10	0
	0.5%	176	0.10	0
170	0.5%	178	0.08	0
	0.6%	178	0.10	0
	0.4%	172	0.07	0
	0.5%	188	0.10	0
	0.4%	182	0.07	0
	0.5%	180	0.10	0
	0.4%	180	0.07	0
	0.4%	188	0.09	0
	0.4%	180		
	0.4%	174	0.15	0
180	0.5%	176		0
	0.5%	180	0.10	
		184	0.07	0
	0.7%	182	0.10	0
		182	0.07	0
	0.4%	184	0.08	0
	0.4%		0.10	0
	0.5%	362	0.07	0
	0.5%		0.09	0
	0.4%	188	0.08	0
190	0.5%	188	0.07	0
	0.4%	180	0.09	0
	0.6%	196	0.08	0
	0.4%	196	0.25	0
	0.5%	196	0.10	0
	0.5%	180	0.12	0
	0.4%	196	0.07	0
	0.5%	196	0.19	0
	0.4%	198	0.09	0
	0.5%	194	0.09	0
200	0.4%	188	0.06	0
	0.5%	184	0.07	0

	1.8%	188	0.05	0
	0.5%	186	0.09	0
	1.2%	184	0.07	0
	0.3%	180	0.07	0
	0.7%	174	0.07	0
	0.4%	170	0.08	0
	1.2%	170	0.06	0
	0.5%	166	0.08	0
210	0.5%	162	0.06	0
	0.5%	162	0.07	0
	0.4%	150	0.10	0
	0.4%	150	0.09	0
	0.4%	158	0.07	0
	0.4%	158	0.07	0
	0.4%	156	0.07	0
	0.3%	160	0.06	0
	0.5%	162	0.07	0
	0.3%	160	0.06	0
220	0.4%	148	0.07	0
	0.3%	160	0.13	0
	0.4%	162	0.07	0
	0.4%	164	0.08	0
	0.4%	170	0.06	0
	0.4%	176	0.07	0
	0.4%	168	0.10	0
	0.4%	166	0.10	0
	0.7%	160	0.23	0
	0.4%	158	0.06	0
230	0.5%	156	0.07	0
	0.4%	162	0.07	0
	0.4%	164	0.06	0
	0.4%	140	0.08	0
	0.4%	148	0.08	0
	0.4%	148	0.08	0

	0.4%	164	0.08	0
	0.4%	160	0.07	0
	0.3%	160	0.06	0
	1.1%	156	0.07	0
240	0.4%	154	0.06	0
	0.4%	146	0.06	0
	1.7%	158	0.09	0
	0.4%	154	0.06	0
	0.5%	152	0.06	0
	0.4%	160	0.11	0
	0.4%	158	0.06	0
	1.2%	152	0.07	0
	0.4%	150	0.06	0
	0.5%	152	0.06	0
250	0.4%	150	0.06	0
	0.4%	150	0.06	0
	0.4%	146	0.07	0
	0.5%	154	0.07	0
	0.5%	146	0.07	0
	0.5%	148	0.23	0
	0.4%	146	0.06	0
	0.4%	146	0.06	0
	0.4%	146	0.06	0
	0.3%	150	0.06	0
260	0.5%	154	0.08	0
	0.3%	150	0.07	0
	0.4%	146	0.07	0
	0.5%	144	0.06	0
	0.4%	138	0.09	0
	0.4%	138	0.09	0
	0.4%	140	0.06	0
	0.3%	140	0.06	0
	0.4%	138	0.06	0
	0.3%	156	0.06	0

270	0.4%	138	0.09	0
	0.4%	146	0.07	0
	0.4%	146	0.09	0
	0.2%	148	0.06	0
	1.7%	146	0.06	0
	1.7%	146	0.07	0
	0.5%	146	0.06	0
	0.5%	148	0.08	0
	0.3%	150	0.07	0
	0.4%	148	0.10	0
280	0.4%	146	0.08	0
	0.4%	144	0.07	0
	0.4%	142	0.08	0
	0.5%	142	0.06	0
	0.5%	144	0.06	0
	0.5%	146	0.06	0
	0.4%	146	0.06	0
	0.3%	148	0.17	0
	0.4%	150	0.07	0
	0.5%	150	0.08	0
290	0.4%	150	0.08	0
	0.5%	152	0.07	0
	0.3%	150	0.25	0
	0.4%	146	0.08	0
	0.4%	148	0.11	0
	0.3%	148	0.06	0
	0.4%	148	0.07	0
	0.4%	148	0.07	0
	0.5%	150	0.07	0
	0.3%	150	0.08	0
300	1.1%	154	0.07	0

Tabela 28: 100 Objetos Pre-Runtime Box OnTriggerEnter2D

quadrosTotal	totalPercent	calls	totalTime	gcMemory
	0.6%	2	0.09	0
10				
	0.0%	4	0.00	0
	0.0%			
20				
		4	0.00	0
30	0.0%			

		4	0.00	0
	0.0%	4	0.00	0
	0.0%	2		0
40				
			0.00	
	0.0%	4	0.00	0
50				
	0.0%	2	0.00	0
	0.0%	2	0.00	0
60	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0

70				
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
80	0.0%			
		2	0.00	0
	0.0%			
		2	0.00	0
	0.0%	2		
90				
			0.00	0
	0.0%	2		

100				
300				

Tabela 29: 100 Objetos Pre-Runtime Box OnTriggerExit2D

quadrosTotal	totalPercent	calls	totalTime	gcMemory
30				
	1.9%	2		0
			0.01	
40	0.0%	4		0
	0.0%			0
50				
			0.00	
		4		
	0.0%			0

			0.00	
		2		
	0.0%	2		0
60				
			0.00	
	0.0%	2		0
				0
70				
			0.00	
			0.00	
	0.0%	2	0.00	
	0.0%	2	0.00	0
	0.0%	2	0.00	0
80				

90				
	0.0%	2	0.00	0
	0.0%	2	0.00	0
100				
300				

Tabela 30: 100 Objetos Pre-Runtime Box OnTriggerStay2D

quadrosTotal	totalPercent	calls	totalTime	gcMemory
10	0.0%	2	0.09	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.01	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0

	0.0%	2	0.00	0
	0.0%	2	0.01	0
	0.0%	6	0.01	0
20	0.0%	6		0
		6	0.00	0
	0.1%			
		6	0.01	0
	0.0%	12	0.00	0
	0.0%	18	0.01	0
	0.0%		0.01	0
	0.0%	6	0.01	0
	0.0%	6	0.01	
	0.0%	6	0.01	0
30	0.1%	6	0.01	0
	0.0%	6	0.04	0
	0.2%	10	0.01	0
	0.1%	10	0.01	0
	0.0%	10	0.05	0
	0.0%	8	0.01	0
	0.3%	8	0.00	0
	0.0%	12	0.01	0
	0.0%	22	0.01	0
	0.0%	14	0.01	0
40	0.2%	14	0.01	0
	0.0%	10	0.01	0
	0.0%	10	0.01	0
	0.0%	10	0.00	0
	0.0%	10	0.01	0
	0.0%	14	0.01	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.01	0
50	0.0%	14	0.00	0

	0.0%	14	0.01	0
	0.0%	22	0.01	0
	0.0%	14	0.01	0
	0.0%	14	0.00	0
	0.0%	12	0.00	0
	0.0%	10	0.00	0
	0.0%	12	0.00	0
	0.0%	12	0.00	0
	0.0%	12	0.00	0
60	0.0%	12	0.00	0
	0.0%	12	0.00	0
	0.0%	12	0.04	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	14	0.00	0
	0.0%	16	0.00	0
	0.0%	16	0.00	0
	0.0%	18	0.01	0
	0.0%	16	0.00	0
70	0.0%	16	0.00	0
	0.0%	16	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	16	0.01	0
	0.0%	18	0.01	0
	0.0%	18	0.01	0
	0.0%	18	0.01	0
	0.0%	20	0.00	0
	0.0%	20	0.00	0
80	0.0%	20	0.00	0
	0.0%	18	0.01	0
	0.0%	18	0.01	0
	0.0%	20	0.01	0
	0.0%	20	0.01	0

	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
90	0.0%	22	0.02	0
	0.0%	22	0.02	0
	0.1%	22	0.01	0
	0.1%	22	0.01	0
	0.1%	24	0.01	0
	0.0%	24	0.01	0
	0.3%	24	0.01	0
	0.0%	26	0.01	0
	0.0%	24	0.01	0
	0.0%	24	0.01	0
100	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.03	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
110	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.02	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0

	0.1%	22	0.00	0
120	0.0%	22	0.00	0
	0.0%	22	0.03	0
	0.0%	22	0.03	0
	0.0%	22	0.00	0
	0.1%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.03	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
130	0.0%	22	0.01	0
	0.1%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.03	0
	0.0%	22	0.01	0
	0.1%	22	0.00	0
	0.0%	22	0.01	0
	0.1%	22	0.01	0
	0.0%	22	0.01	0
140	0.1%	22	0.01	0
	0.0%	22	0.01	0
	0.1%	22	0.01	0
	0.1%	22	0.00	0
	0.0%	22	0.01	0
	0.1%	22	0.02	0
	0.0%	22	0.01	0
	0.0%	22		0
	0.0%	22	0.01	0
	0.0%	22	0.03	0
150	0.0%	22	0.01	0
	0.1%	22	0.01	0
	0.0%	22	0.01	0

		22	0.01	0
	0.4%	22	0.01	0
	0.1%	22	0.01	0
	0.0%	22	0.01	0
	0.1%	22	0.01	0
	0.0%	22	0.01	
	0.0%	22	0.01	0
160	0.1%		0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.03	0
	0.5%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.1%	22	0.01	0
	0.0%	22	0.01	0
170	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22		0
	0.0%	22	0.02	0
	0.0%	22	0.01	0
	0.0%	22		0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
		22	0.01	0
	0.1%	22	0.01	0
180	0.0%	22	0.01	0
		22	0.00	0
	0.0%	22	0.01	0
	0.0%	22	0.02	
	0.0%		0.01	0
	0.0%	44	0.01	
	0.0%		0.01	0

	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
190	0.0%	22	0.07	0
	0.1%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.06	0
	0.0%	22	0.01	0
	0.5%	22	0.01	0
	0.1%	22	0.01	0
	0.0%	22	0.01	0
200	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
210	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.00	0
	0.0%	22	0.00	0
	0.0%	22	0.01	0
	0.1%	22	0.00	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.00	0
	0.0%	22	0.01	0
220	0.0%	22	0.01	0

	0.0%	22	0.00	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.00	0
	0.0%	22	0.00	0
	0.1%	22	0.01	0
230	0.0%	18	0.00	0
	0.0%	22	0.00	0
	0.0%	22	0.00	0
	0.0%	22	0.03	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	18	0.01	0
	0.0%	22	0.00	0
	0.0%	18	0.04	0
	0.0%	22	0.00	0
240	0.0%	22	0.01	0
	0.0%	18	0.01	0
	0.0%	18	0.01	0
	0.0%	18	0.01	0
	0.0%	18	0.00	0
	0.0%	18	0.00	0
	0.0%	18	0.00	0
	0.0%	18	0.01	0
	0.0%	18	0.00	0
	0.0%	18	0.04	0
250	0.0%	18	0.00	0
	0.0%	18	0.00	0
	0.0%	18	0.04	0
	0.0%	18	0.00	0
	0.3%	18	0.01	0

	0.0%	18	0.00	0
	0.0%	18	0.01	0
	0.0%	22	0.00	0
	0.0%	18	0.04	0
	0.0%	18	0.00	0
260	0.0%	18	0.01	0
	0.0%	18	0.01	0
	0.1%	18	0.00	0
	0.0%	18	0.00	0
	0.0%	18	0.04	0
	0.0%	18	0.01	0
	0.0%	18	0.00	0
	0.0%	18	0.00	0
	0.0%	18	0.00	0
	0.0%	18	0.01	0
270	0.0%	22	0.01	0
	0.2%	18	0.01	0
	0.1%	22	0.01	0
	0.0%	18	0.01	0
	0.0%	22	0.01	0
	0.0%	18	0.01	0
	0.1%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.2%	22	0.01	0
280	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.1%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.1%	22	0.00	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0

quadrosTotal	totalPercent	calls	totalTime	gcMemory
	0.0%	22	0.01	0
290	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.1%	22	0.01	0
	0.0%	22	0.01	0
	0.1%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.01	0
300	0.0%	22	0.01	0

Tabela 31: 100 Objetos Pre-Runtime Box Physics2DSimulate

quadrosTotal	totalPercent	calls	totalTime	gcMemory
	4.1%	1	0.44	71100
	3.0%	1	0.52	71100
	2.4%	1	0.40	71100
	2.5%	1	0.41	71100
	2.9%	1	0.50	71100
	2.4%	1	0.41	71100
	2.4%	1	0.40	71100
	3.1%	1	0.52	71100
	3.4%	1	0.54	71200
10	3.2%	1	0.54	71100
	3.4%	1	0.59	71100
	2.7%	1	0.45	71100
	2.8%	1	0.46	71100
	3.5%	1	0.60	71100
	2.8%	1	0.45	71100
	3.0%	1	0.49	71100
	3.8%	1	0.71	71200

	3.0%	1	0.48	71100
	2.9%	1	0.44	71100
20	3.0%	1	0.51	71100
	3.0%	1	0.53	71100
	4.9%	2	0.88	142200
	2.4%	1	0.42	71100
	2.4%	1	0.43	71100
	3.3%	1	0.53	71100
	2.8%	1	0.46	71100
	2.6%	1	0.45	71200
30	2.4%	1	0.63	71100
	12.9%	1	1.25	71100
	2.8%	1	0.46	71100
	8.6%	1	1.28	71100
	6.1%	1	1.03	71100
	3.9%	1	0.63	71200
	5.5%	1	0.94	71100
	3.3%	1	0.57	71100
	3.1%	1	0.51	99500
	4.3%	1	0.73	113800
40	6.0%	1	1.04	113800
	4.9%	1	0.84	113800
	4.9%	1	0.81	113800
	3.4%	1	0.55	113800
	3.8%	1	0.63	128000
	5.4%	1	0.90	156400
	4.0%	1	0.68	170600
	4.0%	1	0.65	170600
	4.4%	1	0.69	170600
	3.3%	1	0.56	170600
50	3.6%	1	0.58	184800
	4.4%	1	0.72	199100

	3.6%	1	0.63	213300
	5.0%	1	0.90	220400
	5.0%	1	0.82	255900
	4.2%	1	0.67	263000
	4.5%	1	0.74	298600
	5.3%	1	0.89	334100
	4.6%	1	0.74	312800
	4.9%	1	0.82	348400
60	5.4%	1	0.91	348400
	3.3%	1	0.79	334100
	9.3%	1	1.13	355500
	6.7%	1	0.94	376800
	5.2%	1	0.86	383900
	5.3%	1	0.89	391000
	5.6%	1	0.95	398100
	5.4%	1	0.95	455000
	7.1%	1	1.07	500000
	6.7%	1	1.16	600000
70	6.7%	1	1.09	600000
	6.7%	1	1.15	600000
	7.1%	1	1.17	600000
	6.9%	1	1.16	600000
	7.7%	1	1.31	600000
	8.0%	1	1.32	600000
	7.5%	1	1.28	600000
	7.2%	1	1.15	600000
	7.2%	1	1.22	600000
	7.7%	1	1.14	600000
80	6.8%	1	1.15	600000
	7.4%	1	1.24	700000
	7.2%	1	1.22	700000
	7.8%	1	1.26	700000
	7.2%	1	1.26	700000
	7.8%	1	1.23	700000

	6.7%	1	1.33	700000
	9.1%	1	1.28	700000
	7.8%	1	1.27	800000
	8.7%	1	1.38	800000
90	7.5%	1	1.33	800000
	8.6%	1	1.38	800000
	5.9%	1	1.45	800000
	15.9%	1	1.80	800000
	9.5%	1	1.34	800000
	8.5%	1	1.35	800000
	7.9%	1	1.38	900000
	8.7%	1	1.37	800000
	7.3%	1	1.27	700000
	8.1%	1	1.31	700000
100	7.2%	1	1.28	700000
	7.1%	1	1.25	700000
	8.3%	1	1.33	700000
	9.1%	1	1.38	600000
	7.5%	1	1.37	600000
	7.9%	1	1.30	600000
	7.9%	1	1.26	600000
	7.4%	1	1.14	600000
	6.7%	1	1.15	600000
	7.0%	1	1.13	600000
110	6.9%	1	1.19	600000
	6.6%	1	1.11	600000
	7.4%	1	1.18	600000
	6.5%	1	1.13	600000
	6.8%	1	1.18	700000
	11.1%	1	1.72	700000
	7.1%	1	1.19	700000
	7.0%	1	1.17	700000
	7.2%	1	1.16	600000
	7.0%	1	1.19	600000

120	7.2%	1	1.15	600000
	6.8%	1	1.14	600000
	6.8%	1	1.18	600000
	4.6%	1	1.17	600000
	18.5%	1	1.99	700000
	8.5%	1	1.16	700000
	6.9%	1	1.21	700000
	8.0%	1	1.24	700000
	7.1%	1	1.20	700000
	7.8%	1	1.28	700000
130	8.5%	1	1.61	700000
	8.4%	1	1.20	700000
	7.3%	1	1.23	700000
	7.9%	1	1.35	700000
	7.8%	1	1.33	700000
	8.6%	1	1.36	700000
	7.3%	1	1.24	700000
	7.7%	1	1.21	700000
	6.9%	1	1.18	700000
	7.3%	1	1.19	700000
140	6.7%	1	1.14	700000
	6.7%	1	1.13	700000
	7.0%	1	1.13	700000
	6.9%	1	1.12	600000
	7.4%	1	1.26	600000
	6.8%	1	1.14	600000
	43.5%	1	13.67	600000
	33.9%	2	2.53	1200000
	6.9%	1	1.06	600000
150	6.7%	1	1.09	600000
	6.5%	1	1.11	600000
	6.2%	1	1.09	600000
	4.4%	1	1.14	600000

	19.4%	1	2.02	600000
	9.1%	1	1.18	600000
	7.3%	1	1.23	600000
	8.2%	1	1.32	700000
	7.5%	1	1.30	600000
	7.8%	1	1.22	600000
160	7.8%	1	1.39	600000
	7.5%	1	1.25	600000
	7.8%	1	1.28	600000
	8.1%	1	1.29	600000
	6.8%	1	1.10	600000
	6.5%	1	1.15	600000
	7.5%	1	1.17	700000
	6.6%	1	1.12	700000
	6.7%	1	1.13	600000
170	10.8%	2	2.16	1300000
	6.4%	1	1.21	700000
	7.6%	1	1.18	700000
	7.1%	1	1.27	700000
	7.4%	1	1.22	700000
	7.4%	1	1.19	700000
	7.2%	1	1.22	700000
	7.4%	1	1.23	700000
	7.7%	1	1.23	700000
180	7.2%	1	1.22	700000
	7.1%	1	1.19	700000
	8.3%	1	1.36	700000
	6.8%	1	1.19	700000
	5.3%	1	1.35	700000
	22.6%	1	3.10	700000
	12.6%	1	1.43	700000
	10.7%	1	1.66	700000

	10.4%	1	1.69	700000
	8.1%	1	1.41	700000
190	11.5%	1	1.87	600000
	7.8%	1	1.29	600000
	7.6%	1	1.21	600000
	7.2%	1	1.23	600000
	7.2%	1	1.22	600000
	6.7%	1	1.11	600000
	7.4%	1	1.21	600000
	6.9%	1	1.14	600000
	8.0%	1	1.35	600000
	7.3%	1	1.22	600000
200	7.7%	1	1.27	600000
	7.0%	1	1.23	600000
	8.2%	1	1.30	600000
	6.9%	1	1.11	600000
	6.5%	1	1.11	600000
	6.7%	1	1.11	600000
	6.9%	1	1.10	600000
	6.5%	1	1.08	600000
	6.7%	1	1.16	600000
	6.8%	1	1.11	600000
210	6.9%	1	1.10	600000
	6.6%	1	1.07	600000
	6.5%	1	1.09	600000
	6.6%	1	1.09	600000
	6.0%	1	1.08	600000
	4.0%	1	1.08	600000
	14.9%	1	1.63	600000
	7.8%	1	1.10	600000
	6.9%	1	1.11	600000
	7.1%	1	1.12	600000
220	6.7%	1	1.12	600000
	6.7%	1	1.06	600000

	9.4%	1	1.74	600000
	7.4%	1	1.21	600000
	7.5%	1	1.17	600000
	7.5%	1	1.26	600000
	7.5%	1	1.23	600000
	7.0%	1	1.21	600000
	7.7%	1	1.25	600000
	7.2%	1	1.22	600000
230	7.9%	1	1.29	600000
	7.6%	1	1.28	600000
	7.1%	1	1.09	600000
	5.9%	1	1.05	600000
	6.3%	1	1.13	600000
	8.3%	1	1.18	600000
	7.3%	1	1.20	500000
	6.6%	1	1.08	500000
	6.0%	1	1.01	500000
	6.4%	1	1.01	500000
240	5.8%	1	1.00	500000
	6.4%	1	1.03	500000
	5.9%	1	1.00	500000
	5.9%	1	0.99	500000
	6.2%	1	1.02	500000
	5.8%	1	0.99	500000
	4.5%	1	1.11	500000
	14.7%	1	1.95	511900
	8.7%	1	0.96	511900
	6.1%	1	1.05	511900
250	6.0%	1	1.00	511900
	6.7%	1	1.13	500000
	6.8%	1	1.08	500000
	6.6%	1	1.16	500000
	7.3%	1	1.16	500000
	7.2%	1	1.21	500000

	7.2%	1	1.21	500000
	7.0%	1	1.15	500000
	6.5%	1	1.15	500000
	8.0%	1	1.26	500000
260	8.1%	1	1.32	500000
	6.0%	1	1.02	500000
	6.3%	1	1.05	500000
	6.6%	1	1.06	500000
	6.1%	1	1.00	500000
	6.0%	1	1.02	500000
	6.2%	1	1.05	500000
	6.3%	1	1.07	500000
	7.1%	1	1.13	500000
	7.0%	1	1.40	500000
270	53.2%	1	14.32	500000
	21.7%	1	1.34	500000
	5.8%	1	1.00	500000
	6.4%	1	1.02	500000
	6.1%	1	1.01	500000
	5.8%	1	1.00	500000
	3.6%	1	1.01	500000
	17.3%	1	1.80	500000
	7.3%	1	0.95	500000
	6.3%	1	1.04	500000
280	6.5%	1	1.09	500000
	7.1%	1	1.18	600000
	9.9%	1	2.03	500000
	9.0%	1	1.16	500000
	7.2%	1	1.22	500000
	7.4%	1	1.18	600000
	7.5%	1	1.26	600000
	7.5%	1	1.22	600000
	7.0%	1	1.22	600000
	7.3%	1	1.16	600000

290	6.3%	1	1.06	600000
	3.8%	1	1.04	600000
	10.9%	1	1.16	600000
	8.9%	1	1.07	600000
	8.5%	1	1.59	600000
	7.2%	1	1.10	600000
	6.5%	1	1.02	600000
	6.2%	1	1.05	600000
	6.4%	1	1.07	500000
	4.7%	1	1.04	500000
300	0.3%	1	1.03	600000

C.1.5 QUINHENTOS OBJETOS

Tabela 32: 500 Objetos Pre-Runtime Box OnCollisionEnter2D

quadrosTotal	totalPercent	calls	totalTime	gcMemory
50				
	0.0%	8	0.02	0
		4	0.00	0
			0.02	0
60			0.00	0
	0.0%			
	0.0%	8		
	0.0%	8		

		8	0.00	0
		6	0.00	0
			0.00	0
	0.0%			0
	0.0%			0
70	0.0%	4		
	0.0%	4	0.00	
	0.0%	4	0.00	
	0.0%	4	0.00	0
	0.0%	10	0.00	0
	0.0%	20	0.00	0
	0.0%	14	0.00	0
		6	0.00	0
	0.0%	10	0.00	0
	0.0%		0.00	0
80	0.0%	10	0.00	0
	0.0%	8		0
	0.0%	10	0.02	0
	0.0%	6	0.00	
	0.0%	18	0.00	0
	0.1%	38	0.00	0
	0.1%	20	0.00	0
	0.0%	14	0.03	0
	0.0%	6	0.02	0
	0.0%	14	0.00	0
90	0.0%	12	0.00	0
	0.0%	8	0.00	0
	0.0%	14	0.00	0
	0.0%	6	0.00	0
	0.0%	20	0.00	0
	0.0%	26	0.00	0
	0.0%	10	0.00	0
	0.1%	18	0.01	0
	0.0%	26	0.00	0

	0.1%	10	0.01	0
100	0.0%	30	0.02	0
	0.0%	18	0.00	0
	0.0%	28	0.02	0
	0.0%	18	0.00	0
	0.0%	12	0.01	0
	0.0%	6	0.00	0
	0.0%	16	0.01	0
	0.0%	16	0.00	0
	0.1%	30	0.00	0
	0.0%	22	0.01	0
110	0.2%	10	0.03	0
	0.0%	32	0.00	0
	0.0%	16	0.00	0
	0.0%	18	0.02	0
	0.0%	10	0.00	0
	0.0%	20	0.00	0
	0.0%	16	0.00	0
	0.0%	10	0.00	0
	0.0%	10	0.00	0
	0.0%	12	0.00	0
120	0.0%	18	0.00	0
	0.0%	30	0.00	0
	0.0%	22	0.01	0
	0.0%	20	0.01	0
	0.0%	16	0.00	0
	0.0%	28	0.00	0
	0.1%	24	0.01	0
	0.0%	32	0.01	0
	0.0%	22	0.00	0
	0.0%	28	0.02	0
130	0.0%	28	0.00	0
	0.0%	14	0.01	0
	0.0%	20	0.01	0

	0.0%	22	0.00	0
	0.1%	32	0.00	0
	0.0%	26	0.00	0
	0.0%	24	0.01	0
	0.1%	58	0.01	0
	0.1%	48	0.01	0
	0.1%	38	0.02	0
140	0.1%	44	0.01	0
	0.1%	34	0.02	0
	0.1%	54	0.03	0
	0.2%	38	0.03	0
	0.0%	58	0.02	0
	0.1%	26	0.01	0
	0.0%	52	0.03	0
	0.1%	26	0.01	0
	0.1%	30	0.02	0
	0.1%	44	0.01	0
150	0.1%	44	0.02	0
	0.1%	38	0.02	0
	0.0%	58	0.02	0
	0.1%	32	0.02	0
	0.1%	36	0.01	0
	0.1%	38	0.02	0
	0.2%	46	0.02	0
	0.1%	40	0.02	0
	0.1%	56	0.03	0
	0.1%	64	0.02	0
160	0.1%	58	0.02	0
	0.1%	52	0.03	0
	0.1%	62	0.02	0
	0.2%	68	0.02	0
	0.3%	88	0.02	0
	0.1%	64	0.03	0
	0.6%	72	0.04	0

	0.1%	74	0.03	0
	0.1%	44	0.12	0
	0.1%	46	0.02	0
170	0.2%	62	0.02	0
	0.1%	70	0.04	0
	0.2%	48	0.02	0
	0.3%	128	0.05	0
	0.1%	80	0.04	0
	0.3%	60	0.06	0
	0.2%	74	0.04	0
	0.2%	72	0.03	0
	0.2%	68	0.05	0
	0.2%	78	0.04	0
180	0.1%	64	0.04	0
	0.4%	136	0.04	0
	0.3%	126	0.04	0
	0.2%	78	0.08	0
	0.1%	66	0.04	0
	0.1%	52	0.04	0
	0.2%	70	0.04	0
	0.1%	82	0.02	0
	0.2%	56	0.03	0
	0.2%	66	0.04	0
190	0.6%	64	0.02	0
	0.3%	80	0.03	0
	0.2%	126	0.05	0
	0.2%	64	0.13	0
	0.1%	80	0.06	0
	0.2%	64	0.03	0
	0.2%	58	0.04	0
	0.2%	90	0.04	0
	0.1%	84	0.03	0
	0.1%	84	0.03	0
200	0.3%	64	0.04	0

	0.3%	128	0.04	0
	0.4%	122	0.04	0
	0.2%	162	0.12	0
	0.1%	80	0.08	0
	0.1%	58	0.09	0
	0.1%	66	0.03	0
	0.2%	68	0.02	0
	0.2%	90	0.03	0
	0.1%	80	0.03	0
210	0.2%	74	0.04	0
	0.2%	42	0.03	0
	0.2%	48	0.04	0
	0.1%	76	0.03	0
	0.2%	74	0.03	0
	0.2%	126	0.03	0
	0.1%	74	0.04	0
	0.2%	46	0.06	0
	0.1%	68	0.03	0
	0.1%	48	0.02	0
220	0.1%	58	0.03	0
	0.1%	54	0.02	0
	0.1%	68	0.03	0
	0.2%	58	0.02	0
	0.1%	48	0.03	0
	0.2%	62	0.03	0
	0.2%	60	0.03	0
	0.1%	46	0.03	0
	0.0%	48	0.04	0
	0.3%	52	0.03	0
230	0.3%	88	0.02	0
	0.1%	100	0.01	0
	0.2%	62	0.11	0
	0.1%	88	0.06	0
	0.1%	30	0.03	0

	0.1%	38	0.04	0
	0.2%	52	0.01	0
	0.1%	50	0.02	0
	0.1%	52	0.03	0
	0.2%	46	0.04	0
240	0.1%	46	0.03	0
	0.1%	60	0.02	0
	0.0%	40	0.02	0
	0.1%	24	0.02	0
	0.1%	44	0.01	0
	0.0%	42	0.02	0
	0.1%	30	0.05	0
	0.1%	48	0.02	0
	0.1%	36	0.01	0
	0.0%	52	0.02	0
250	0.1%	32	0.01	0
	0.1%	34	0.02	0
	0.0%	42	0.01	0
	0.2%	42	0.02	0
	0.0%	90	0.02	0
	0.1%	36	0.02	0
	0.1%	40	0.04	0
	0.1%	40	0.01	0
	0.2%	64	0.01	0
	0.2%	52	0.03	0
260	0.1%	104	0.05	0
	0.1%	30	0.02	0
	0.1%	44	0.05	0
	0.2%	46	0.01	0
	0.1%	44	0.03	0
	0.1%	54	0.02	0
	0.1%	44	0.03	0
	0.0%	44	0.02	0
	0.1%	32	0.02	0

	0.1%	36	0.01	0
270	0.0%	26	0.01	0
	0.1%	40	0.01	0
	0.1%	82	0.01	0
	0.0%	40	0.02	0
	0.0%	22	0.02	0
	0.1%	40	0.01	0
	0.1%	58	0.01	0
	0.0%	28	0.02	0
	0.0%	28	0.03	0
	0.1%	26	0.01	0
280	0.0%	38	0.01	0
	0.1%	28	0.01	0
	0.1%	36	0.01	0
	0.0%	32	0.01	0
	0.1%	16	0.02	0
	0.0%	28	0.02	0
	0.1%	30	0.00	0
	0.0%	26	0.01	0
	0.2%	34	0.02	0
	0.1%	82	0.01	0
290	0.1%	58	0.08	0
	0.1%	30	0.01	0
	0.0%	32	0.03	0
	0.0%	24	0.01	0
	0.1%	34	0.02	0
	0.1%	32	0.01	0
	0.0%	26	0.01	0
	0.1%	44	0.01	0
	0.1%	66	0.02	0
	0.2%	20	0.02	0
300	0.1%	34	0.03	0

Tabela 33: 500 Objetos Pre-Runtime Box OnCollisionExit2D

quadrosTotal	totalPercent	calls	totalTime	gcMemory
60				
	0.5%	10	0.09	0
	0.0%			
70				
		2		0
	0.0%		0.00	0
	0.0%	4	0.00	
		10	0.00	0
	0.0%	6	0.00	0
	0.0%	6	0.00	0
	0.0%	8	0.00	0
	0.0%	12	0.00	0
				0
80				
	0.0%	6	0.00	
	0.0%	2	0.00	0
	0.0%	12	0.00	0
	0.0%	6	0.00	0
	0.0%	4	0.00	0
	0.0%	12	0.00	0
	0.0%	4	0.00	0
	0.0%	8	0.00	0

	0.0%	12	0.00	0
90	0.0%	4	0.00	0
	0.0%	20	0.00	0
	0.0%	2	0.00	0
	0.0%	10	0.00	0
	0.0%	10	0.00	0
	0.0%	12	0.00	0
	0.0%	8	0.00	0
	0.0%	24	0.01	0
	0.0%	16	0.00	0
	0.0%	18	0.00	0
100	0.0%	18	0.00	0
	0.0%	10	0.00	0
	0.0%	6	0.00	0
	0.0%	8	0.00	0
	0.0%	12	0.00	0
	0.0%	18	0.01	0
	0.0%	24	0.01	0
	0.0%	20	0.00	0
	0.0%	10	0.01	0
	0.0%	18	0.00	0
110	0.0%	20	0.00	0
	0.0%	14	0.00	0
	0.0%	2	0.00	0
	0.0%	10	0.00	0
	0.0%	16	0.01	0
	0.0%	34	0.03	0
	0.0%	12	0.00	0
	0.0%	16	0.00	0
	0.0%	10	0.00	0
	0.0%	10	0.00	0
120	0.0%	12	0.00	0
	0.0%	18	0.00	0
	0.0%	18	0.00	0

	0.0%	6	0.01	0
	0.0%	18	0.00	0
	0.0%	18	0.00	0
	0.0%	20	0.00	0
	0.0%	6	0.00	0
	0.0%	8	0.01	0
	0.0%	14	0.01	0
130	0.0%	8	0.00	0
	0.0%	20	0.00	0
	0.0%	4	0.00	0
	0.0%	18	0.00	0
	0.0%	18	0.00	0
	0.0%	18	0.00	0
	0.0%	14	0.00	0
	0.0%	12	0.00	0
	0.0%	20	0.01	0
	0.0%	22	0.01	0
140	0.0%	30	0.01	0
	0.0%	20	0.01	0
	0.0%	32	0.01	0
	0.0%	38	0.01	0
	0.0%	20	0.01	0
	0.0%	20	0.01	0
	0.0%	62	0.04	0
	0.2%	26	0.01	0
	0.1%	24	0.01	0
	0.0%	20	0.01	0
150	0.0%	28	0.01	0
	0.0%	36	0.01	0
	0.0%	38	0.02	0
	0.1%	50	0.01	0
	0.1%	32	0.01	0
	0.0%	30	0.01	0
	0.0%	40	0.01	0

	0.1%	38	0.02	0
	0.1%	36	0.01	0
	0.1%	20	0.01	0
160	0.0%	62	0.02	0
	0.2%	54	0.01	0
	0.0%	30	0.04	0
	0.1%	32	0.01	0
	0.1%	34	0.02	0
	0.0%	30	0.01	0
	0.1%	40	0.01	0
	0.0%	52	0.02	0
	0.1%	62	0.02	0
	0.1%	46	0.03	0
170	0.1%	48	0.04	0
	0.0%	30	0.01	0
	0.1%	38	0.02	0
	0.1%	42	0.01	0
	0.1%	62	0.02	0
	0.0%	44	0.04	0
	0.2%	44	0.05	0
	0.1%	108	0.04	0
	0.2%	48	0.02	0
	0.3%	70	0.04	0
180	0.1%	48	0.06	0
	0.3%	68	0.02	0
	0.2%	44	0.02	0
	0.1%	48	0.04	0
	0.2%	52	0.04	0
	0.1%	54	0.06	0
	0.3%	116	0.09	0
	0.7%	68	0.04	0
	0.2%	70	0.02	0
	0.1%	50	0.02	0
190	0.1%	48	0.03	0

	0.2%	62	0.04	0
	0.0%	62	0.02	0
	0.1%	50	0.03	0
	0.1%	166	0.06	0
	0.2%	36	0.04	0
	0.0%	98	0.04	0
	0.2%	56	0.02	0
	0.2%	166	0.03	0
	0.1%	64	0.04	0
200	0.2%	68	0.04	0
	0.2%	70	0.03	0
	0.1%	74	0.03	0
	0.2%	72	0.05	0
	0.0%	58	0.02	0
	0.3%	150	0.12	0
	0.4%	166	0.10	0
	0.3%	168	0.08	0
	0.2%	84	0.04	0
	0.2%	72	0.04	0
210	0.1%	92	0.05	0
	0.3%	80	0.03	0
	0.1%	66	0.04	0
	0.2%	100	0.03	0
	0.2%	66	0.03	0
	0.1%	62	0.03	0
	0.1%	72	0.03	0
	0.2%	56	0.02	0
	0.1%	78	0.04	0
	0.3%	142	0.07	0
220	0.1%	56	0.02	0
	0.2%	76	0.03	0
	0.1%	66	0.03	0
	0.1%	72	0.03	0
	0.2%	74	0.03	0

	0.0%	56	0.02	0
	0.1%	88	0.05	0
	0.0%	62	0.04	0
	0.3%	54	0.03	0
	0.2%	62	0.02	0
230	0.2%	70	0.02	0
	0.1%	52	0.02	0
	0.1%	42	0.02	0
	0.1%	76	0.04	0
	0.3%	124	0.12	0
	0.2%	108	0.05	0
	0.0%	48	0.02	0
	0.2%	86	0.04	0
	0.3%	62	0.04	0
	0.0%	30	0.01	0
240	0.1%	50	0.02	0
	0.2%	30	0.01	0
	0.0%	58	0.03	0
	0.2%	24	0.01	0
	0.0%	28	0.03	0
	0.2%	46	0.02	0
	0.1%	32	0.01	0
	0.1%	24	0.03	0
	0.1%	42	0.02	0
	0.1%	46	0.02	0
250	0.1%	40	0.02	0
	0.1%	60	0.02	0
	0.2%	60	0.03	0
	0.1%	40	0.02	0
	0.0%	24	0.01	0
	0.1%	44	0.02	0
	0.1%	44	0.02	0
	0.0%	58	0.01	0
	0.2%	112	0.02	0

	0.1%	44	0.03	0
260	0.1%	32	0.01	0
	0.1%	32	0.01	0
	0.0%	54	0.10	0
	0.3%	58	0.05	0
	0.2%	84	0.02	0
	0.2%	32	0.03	0
	0.1%	48	0.02	0
	0.1%	48	0.02	0
	0.1%	34	0.01	0
	0.1%	58	0.02	0
270	0.1%	58	0.02	0
	0.1%	42	0.02	0
	0.1%	52	0.03	0
	0.1%	44	0.02	0
	0.1%	36	0.02	0
	0.1%	46	0.01	0
	0.1%	38	0.02	0
	0.1%	34	0.02	0
	0.1%	38	0.03	0
	0.1%	46	0.02	0
280	0.0%	86	0.04	0
	0.2%	44	0.02	0
	0.0%	44	0.01	0
	0.1%	28	0.01	0
	0.1%	36	0.02	0
	0.0%	26	0.01	0
	0.0%	44	0.04	0
	0.2%	28	0.03	0
	0.2%	46	0.01	0
	0.1%	28	0.02	0
290	0.0%	44	0.01	0
	0.0%	26	0.00	0
	0.2%	80	0.08	0

	0.1%	66	0.04	0
	0.1%	28	0.02	0
	0.0%	30	0.02	0
	0.1%	38	0.02	0
	0.1%	46	0.01	0
	0.0%	24	0.01	0
	0.1%	32	0.01	0
300	0.0%	30	0.01	0

Tabela 34: 500 Objetos Pre-Runtime Box OnCollisionStay2D

quadrosTotal	totalPercent	calls	totalTime	gcMemory
	0.3%	100	0.04	0
	0.3%	100	0.41	0
	0.3%	100	0.05	
	0.3%		0.41	0
	0.3%	100	0.05	0
		100		0
	0.3%	100	0.07	0
	0.3%	100	0.07	0
	0.3%	100	0.05	0
10	0.2%	100	0.07	0
	2.7%	100	0.04	0
	2.7%	100	0.07	0
	0.3%	100	0.05	0
	0.3%	100	0.04	0
	0.4%	100	0.05	0
	3.3%	100	0.06	0
	0.3%	100	0.05	0
	0.2%	100	0.06	0
	0.3%	100	0.04	0
20	0.3%	100	0.05	0
	0.6%	100	0.06	0

	0.2%	100	0.18	0
	1.1%	100	0.11	0
	0.5%	100	0.07	0
	0.3%	100	0.07	0
	0.6%	100	0.05	0
	0.3%	100	0.05	0
	0.4%	100	0.07	0
	0.4%	100	0.07	0
30	0.2%	100	0.04	0
	0.4%	100	0.05	0
	0.2%	100	0.05	0
	0.4%	100	0.06	0
	0.2%	100	0.04	0
	0.6%	100	0.04	0
	0.6%	100	0.10	0
	0.9%	100	0.15	0
	0.4%	100	0.06	0
	0.4%	100	0.05	0
40	0.4%	100	0.08	0
	0.3%	100	0.05	0
	0.3%	100	0.04	0
	0.4%	100	0.04	0
	0.3%	100	0.06	0
	0.4%	100	0.05	0
	0.3%	100	0.04	0
	0.2%	100	0.04	0
	0.3%	100	0.04	0
	0.3%	100	0.04	0
50	0.4%	100	0.05	0
	0.2%	100	0.06	0
	0.2%	100	0.04	0
	0.4%	100	0.04	0
	0.1%	100	0.14	0
	0.5%	100	0.12	0

	0.4%	100	0.04	0
	0.3%	200		
	1.0%	100	0.13	0
		128		0
60	0.6%		0.05	
		200	0.07	0
	0.2%		0.06	0
	0.4%	100	0.05	0
	0.3%	108	0.05	0
	0.4%	112	0.05	0
	0.3%	112	0.05	0
	0.4%	112	0.05	0
	0.3%	112	0.06	0
	0.3%	128	0.05	0
70	0.3%	112	0.05	0
	0.4%	128	0.05	0
	0.3%	114	0.05	0
	0.3%	122	0.05	0
	0.3%	128	0.06	0
	0.3%	128	0.06	0
	2.6%	128	0.05	0
	0.3%	128	0.07	0
	0.4%	132	0.08	0
	0.3%	134	0.06	0
80	0.4%	172	0.07	0
	0.5%	138	0.08	0
	0.4%	138	0.07	0
	2.6%	142	0.07	0
	2.6%	142	0.64	0
	0.7%	150	0.07	0
	0.2%	172	0.07	0
	2.6%	170	0.07	0
	0.8%	174	0.07	0
	0.4%	172	0.07	0

90	0.4%	348	0.08	0
	0.5%	176	0.12	0
	0.6%	172	0.10	0
	0.5%	182	0.11	0
	0.7%	190	0.11	0
	0.6%	220	0.11	0
	0.6%	236	0.13	0
	0.6%	228	0.12	0
	0.6%	238	0.11	0
	0.6%	242	0.10	0
100	0.8%	246	0.10	0
	0.6%	236	0.25	0
	0.6%	246	0.09	0
	0.6%	246	0.12	0
	0.5%	236	0.11	0
	0.8%	226	0.25	0
	0.6%	228	0.11	0
	0.5%	236	0.11	0
	0.6%	236	0.12	0
	0.7%	236	0.12	0
110	0.7%	266	0.15	0
	0.5%	264	0.11	0
	0.8%	276	0.12	0
	0.7%	270	0.25	0
	0.7%	290	0.25	0
	1.2%	318	0.15	0
	1.1%	298	0.11	0
	0.5%	290	0.13	0
	0.8%	318	0.24	0
	0.5%	282	0.16	0
120	3.6%	316	0.52	0
	1.2%	322	0.16	0
	0.8%	634	0.16	0
	1.2%	316	0.15	0

	0.9%	318	0.14	0
	0.9%	318	0.16	0
	1.0%	318	0.16	0
	3.1%	332	0.16	0
	1.0%	324	0.56	0
	0.9%	328	0.16	0
130	1.0%	436	0.16	0
	1.1%	436	0.16	0
	1.0%	322	0.18	0
	1.2%	322	0.16	0
	1.2%	346	0.21	0
	1.0%	358	0.19	0
	1.3%	360	0.21	0
	1.2%	380	0.19	0
	1.2%	384	0.19	0
	1.2%	436	0.19	0
140	1.3%	416	0.21	0
	1.1%	426	0.20	0
	1.4%	436	0.20	0
	1.1%	436	0.21	0
	1.4%	444	0.21	0
	2.7%	444	0.19	0
	2.1%	446	0.21	0
	1.3%	442	0.21	0
	1.7%	446	0.21	0
	1.6%	462	0.30	0
150	1.5%	480	0.22	0
	1.7%	1002	0.69	0
	1.7%	504	0.30	0
	1.7%	674	0.22	0
	1.6%	556	0.23	0
	1.5%	562	0.27	0
	1.7%	674	0.27	0
	1.0%	586	0.28	0

	2.7%	574	0.30	0
	1.7%	566	0.45	0
160	1.6%	580	0.29	0
	2.0%	578	0.28	0
	1.7%	674	0.26	0
	2.0%	572	0.45	0
	1.9%	572	0.97	0
	2.1%	590	0.27	0
	2.6%	582	0.27	0
	2.9%	924	0.30	0
	2.3%	592	0.31	0
	2.2%	616	0.97	0
170	1.4%	674	0.28	0
	3.5%	686	0.45	0
	2.8%	924	0.27	0
	3.3%	696	0.29	0
	3.1%	718	0.32	0
	2.8%	758	0.53	0
	2.8%	792	0.33	0
	1.4%	826	0.97	0
	3.7%	924	0.33	0
	3.1%	828	0.34	0
180	3.2%	812	0.52	0
	2.9%	830	0.68	0
	3.6%	1154	0.45	0
	3.2%	856	0.36	0
	3.1%	1712	0.53	0
	8.4%	886	0.38	0
	5.0%	908	0.37	0
	4.0%	924	1.01	0
	3.1%	1154	0.97	0
	3.2%	940	0.53	0
190	3.1%	964	0.68	0
	3.4%	1934	0.42	0

	2.0%	1154	0.53	0
	1.9%	988	1.34	0
	5.6%	1004	0.54	0
	5.5%	1048	0.68	0
	4.7%	1008	0.48	0
	3.5%	1032	0.50	0
	3.1%	1052	0.48	0
	2.8%	1046	0.93	0
200	2.6%	1062	0.49	0
	2.9%	1090	0.53	0
	3.1%	1142	1.34	0
	2.9%	1142	0.49	0
	2.8%	1048	0.62	0
	1.6%	1154	0.51	0
	4.0%	1148	1.34	0
	3.0%	1132	0.50	0
	2.9%	1048	0.48	0
	2.9%	1144	0.68	0
210	2.7%	1844	0.47	0
	2.9%	1170	1.87	0
	2.5%	2326	1.10	0
	3.3%	2214	0.48	0
	3.2%	2172	0.57	0
	2.5%	1078	0.56	0
	2.7%	1086	0.53	0
	1.3%	1052	0.52	0
	5.0%	950	0.58	0
	4.3%	1036	0.54	0
220	1.5%	1044	0.57	0
	4.6%	1844	2.00	0
	3.1%	1062	0.47	0
	2.8%	1048	1.34	0
	2.6%	1844	1.05	0
	3.0%	926	0.47	0

	2.4%	1046	0.51	0
	2.5%	2088	0.45	0
	2.6%	1046	0.52	0
	2.5%	1026	0.56	0
230	2.6%	1022	0.48	0
	2.9%	1004	0.48	0
	2.3%	988	0.56	0
	3.6%	950	0.47	0
	3.0%	986	0.48	0
	2.9%	950	0.44	0
	3.0%	966	0.53	0
	2.2%	948	0.98	0
	3.3%	1682	0.58	0
	2.7%	958	0.45	0
240	2.6%	926	0.48	0
	2.8%	976	0.45	0
	2.7%	926	0.45	0
	1.4%	948	0.47	0
	3.4%	1844	0.47	0
	2.4%	1820	0.45	0
	2.4%	908	0.57	0
	2.5%	1854	0.53	0
	1.7%	910	0.56	0
	4.3%	910	0.46	0
250	4.2%	898	0.45	0
	2.6%	920	0.54	0
	2.8%	912	0.44	0
	2.7%	936	1.70	0
	2.8%	950	0.88	0
	2.7%	1682	0.48	0
	2.7%	1682	0.45	0
	2.7%	968	0.88	0
	2.7%	946	0.45	0
	2.8%	954	0.43	0

260	2.5%	956	0.45	0
	2.8%	926	0.45	0
	2.4%	914	0.48	0
	2.4%	902	0.41	0
	1.4%	938	0.44	0
	2.3%	916	0.45	0
	3.1%	926	0.49	0
	2.3%	1822	0.54	0
	2.3%	924	0.54	0
	2.3%	1894	0.43	0
270	2.5%	964	0.49	0
	1.9%	946	0.41	0
	4.5%	942	0.43	0
	3.3%	954	0.45	0
	3.3%	940	0.45	0
	2.2%	936	0.46	0
	2.5%	938	0.46	0
	1.2%	916	0.48	0
	4.0%	904	0.45	0
	4.8%	910	0.86	0
280	3.5%	912	0.42	0
	2.9%	888	0.43	0
	2.7%	1750	0.48	0
	2.3%	854	1.17	0
	2.7%	854	0.94	0
	2.3%	844	0.48	0
	4.4%	856	0.43	0
	3.5%	840	0.46	0
	2.3%	848	0.44	0
	2.4%	852	0.48	0
290	2.9%	824	0.45	0
	2.4%	1682	0.49	0
	1.7%	836	0.47	0
	2.8%	840	0.44	0

	2.9%	1682	0.42	0
	2.4%	1684	0.41	0
	2.7%	840	0.41	0
	2.8%	840	0.41	0
	2.5%	834	0.45	0
	1.9%	834	0.82	0
300	0.1%	836	0.39	0

Tabela 35: 500 Objetos Pre-Runtime Box OnTriggerEnter2D

quadrosTotal	totalPercent	calls	totalTime	gcMemory
20				
	0.5%	4	0.09	0
30				
	0.0%	8	0.00	0

40				
	0.0%	8	0.00	0
50				
	0.0%	8	0.01	0
	0.0%	4	0.00	0
60				
	0.0%	8	0.00	0
70				
	0.0%	2	0.00	0
	0.0%	2	0.00	0

	0.0%	6	0.00	0
	0.0%	4	0.00	0
	0.0%	2	0.00	0
80	0.0%	4	0.00	0
	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
90				
	0.0%	4	0.00	0
	0.0%	4	0.00	0
	0.0%	4	0.00	0
	0.0%	4	0.00	0
	0.0%	2	0.00	0
100				
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0

110				
	0.0%	2	0.00	0
	0.0%	2	0.00	0
120				
	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
130				
	0.0%	2	0.00	0
	0.0%	2	0.00	0
140				

	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
150				
	0.0%	2	0.00	0
	0.0%	4	0.01	0
160				
	0.0%	2	0.00	0
	0.0%	4	0.00	0
170				

180				
	0.0%	2	0.00	0
	0.0%	2	0.01	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
190	0.0%	2	0.01	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
200	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0

210				
	0.0%	2	0.00	0
220				
230				
240	0.0%	2	0.00	0

250				
	0.0%	2	0.00	0
260				
	0.0%	2	0.00	0
270				
300				

Tabela 36: 500 Objetos Pre-Runtime Box OnTriggerExit2D

quadrosTotal	totalPercent	calls	totalTime	gcMemory

50				
	0.9%	4	0.10	0
	0.0%	8	0.00	0
60	0.0%			
70				
		8	0.00	0
	0.0%			
		2	0.00	0
	0.0%	2		
			0.00	0
	0.0%	4		0
80				
			0.01	
	0.1%	6	0.01	0

90				
	0.0%	4	0.00	0
	0.0%	4	0.00	0
	0.0%	4	0.00	0
100				
110				
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0

	0.0%	2	0.00	0
120				
	0.0%	2	0.00	0
130				
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%			
		2	0.00	0
	0.0%			
		2	0.00	0
	0.0%	2		
140			0.00	0
	0.0%	2		0
			0.00	
	0.0%	2	0.01	0
150				

160				
	0.0%	4	0.01	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
170				
	0.0%	2	0.00	0
180				

190				
	0.0%	2	0.00	0
200				
	0.0%	2	0.00	0
210				
	0.0%	4	0.00	0
	0.0%	4	0.00	0

220				
	0.0%	2	0.00	0
230				
250				
	0.0%	2	0.00	0
260				
300				

Tabela 37: 500 Objetos Pre-Runtime Box OnTriggerStay2D

quadrosTotal	totalPercent	calls	totalTime	gcMemory
20				

30	0.7%	4	0.10	0
	0.0%	4	0.00	0
	0.0%	4	0.00	0
	0.0%	4	0.03	0
	0.2%	4	0.03	0
	0.2%	4	0.00	0
	0.0%	4	0.00	0
	0.0%	4	0.00	0
	0.0%	4	0.01	0
	0.0%	12	0.00	0
40	0.0%	12	0.00	0
	0.0%	12	0.01	0
	0.0%	12	0.00	0
	0.0%	12	0.00	0
	0.0%	12	0.00	0
	0.0%	12	0.00	0
	0.0%	12	0.00	0
	0.0%	12	0.00	0
	0.0%	12	0.00	0
	0.0%	12	0.01	0
50	0.0%	12	0.00	0
	0.0%	20	0.02	0
	0.0%	20	0.02	0
	0.2%	40	0.03	0
	0.0%	16	0.00	0
	0.1%	16	0.02	0

	0.1%	52	0.03	0
	0.1%	28	0.03	0
60	0.1%	28	0.01	0
	0.0%	20	0.01	0
	0.1%	20	0.01	0
	0.0%	20	0.01	0
	0.0%	28	0.01	0
	0.1%	28	0.01	0
	0.0%	28	0.01	0
	0.0%	28	0.01	0
	0.0%	28	0.01	0
	0.1%	28	0.01	0
70	0.0%	28	0.01	0
	0.0%	28	0.01	0
	0.0%	28	0.01	0
	0.0%	28	0.01	0
	0.0%	28	0.01	0
	0.0%	22	0.01	0
	0.0%	24	0.01	0
	0.0%	24	0.01	0
	0.0%	22	0.01	0
	0.0%	22	0.00	0
80	0.0%	24	0.01	0
	0.0%	60	0.01	0
	0.0%	24	0.01	0
	0.0%	28	0.01	0
	0.6%	60	0.14	0
	0.1%	28	0.01	0
	0.1%	32	0.01	0
	0.1%	32	0.01	0
	0.1%	32	0.01	0
	0.1%	32	0.01	0

90	0.1%	32	0.02	0
	0.1%	32	0.01	0
	0.0%	32	0.01	0
	0.1%	34	0.01	0
	0.1%	36	0.01	0
	0.1%	36	0.01	0
	0.1%	40	0.02	0
	0.1%	40	0.02	0
	0.1%	40	0.02	0
	0.1%	36	0.01	0
100	0.1%	36	0.01	0
	0.1%	40	0.02	0
	0.1%	40	0.02	0
	0.1%	40	0.02	0
	0.1%	42	0.02	0
	0.1%	42	0.02	0
	0.1%	42	0.02	0
	0.2%	42	0.03	0
	0.1%	42	0.02	0
	0.2%	44	0.04	0
110	0.1%	46	0.02	0
	0.1%	46	0.02	0
	0.1%	48	0.02	0
	0.1%	48	0.03	0
	0.1%	46	0.04	0
	0.3%	88	0.05	0
	0.1%	40	0.02	0
	0.1%	40	0.02	0
	0.1%	42	0.02	0
	0.1%	44	0.02	0
120	0.1%	42	0.02	0
	0.1%	42	0.02	0
	0.1%	42	0.02	0
	0.1%	42	0.02	0

	0.1%	42	0.02	0
	0.1%	42	0.02	0
	0.1%	42	0.02	0
	0.1%	42	0.02	0
	0.1%	42	0.02	0
	0.1%	46	0.02	0
130	0.1%	48	0.02	0
	0.1%	50	0.01	0
	0.1%	50	0.02	0
	0.1%	52	0.02	0
	0.1%	50	0.02	0
	0.0%	48	0.01	0
	0.1%	50	0.02	0
	0.1%	48	0.02	0
	0.1%	48	0.02	0
	0.1%	48	0.02	0
140	0.1%	50	0.02	0
	0.1%	48	0.01	0
	0.0%	48	0.02	0
	0.8%	46	0.20	0
	0.3%	92	0.06	0
	0.2%	44	0.02	0
	0.1%	44	0.02	0
	0.2%	44	0.04	0
	0.1%	48	0.02	0
	0.1%	48	0.02	0
150	0.2%	50	0.03	0
	0.1%	50	0.02	0
	0.1%	50	0.02	0
	0.1%	50	0.02	0
	0.1%	52	0.02	0
	0.1%	52	0.02	0
	0.2%	52	0.04	0
	0.1%	52	0.02	0

	0.2%	52	0.02	0
	0.1%	52	0.02	0
160	0.1%	54	0.02	0
	0.1%	58	0.03	0
	0.1%	58	0.03	0
	0.1%	58	0.02	0
	0.1%	58	0.02	0
	0.1%	54	0.02	0
	0.1%	54	0.02	0
	0.2%	54	0.04	0
	0.2%	54	0.03	0
	0.1%	52	0.02	0
170	0.1%	52	0.02	0
	0.2%	50	0.06	0
	0.3%	54	0.10	0
	0.3%	108	0.07	0
	0.4%	54	0.05	0
	0.1%	54	0.03	0
	0.2%	54	0.03	0
	0.1%	54	0.02	0
	0.1%	54	0.03	0
	0.1%	54	0.03	0
180	0.0%	54	0.03	0
	0.3%	106	0.07	0
	0.2%	52	0.03	0
	0.2%	52	0.03	0
	0.2%	52	0.03	0
	0.1%	52	0.02	0
	0.1%	54	0.02	0
	0.1%	54	0.03	0
	0.1%	54	0.02	0
	0.1%	54	0.03	0
190	0.3%	54	0.07	0
	0.2%	114	0.05	0

	0.2%	58	0.03	0
	0.2%	60	0.03	0
	0.1%	60	0.02	0
	0.1%	62	0.03	0
	0.2%	64	0.03	0
	0.1%	64	0.03	0
	0.3%	64	0.10	0
	0.4%	128	0.17	0
200	0.2%	128	0.07	0
	0.2%	126	0.05	0
	0.2%	64	0.03	0
	0.2%	62	0.03	0
	0.2%	64	0.03	0
	0.1%	66	0.03	0
	0.1%	66	0.03	0
	0.2%	66	0.03	0
	0.2%	66	0.03	0
	0.2%	66	0.03	0
210	0.1%	66	0.02	0
	0.1%	68	0.03	0
	0.3%	138	0.08	0
	0.2%	70	0.03	0
	0.2%	70	0.04	0
	0.1%	66	0.03	0
	0.2%	66	0.03	0
	0.2%	66	0.03	0
	0.1%	62	0.02	0
	0.1%	62	0.03	0
220	0.6%	62	0.11	0
	0.2%	62	0.03	0
	0.2%	62	0.03	0
	0.1%	62	0.02	0
	0.1%	64	0.03	0
	0.1%	64	0.03	0

	0.4%	128	0.15	0
	0.4%	128	0.08	0
	0.1%	64	0.03	0
	0.2%	126	0.05	0
230	0.2%	62	0.03	0
	0.1%	62	0.03	0
	0.1%	62	0.03	0
	0.2%	62	0.03	0
	0.2%	62	0.03	0
	0.2%	62	0.03	0
	0.2%	62	0.03	0
	0.2%	62	0.03	0
	0.1%	62	0.03	0
	0.2%	62	0.04	0
240	0.2%	62	0.03	0
	0.2%	62	0.03	0
	0.1%	62	0.03	0
	0.2%	62	0.03	0
	0.1%	62	0.03	0
	0.2%	64	0.04	0
	0.2%	64	0.03	0
	0.1%	64	0.03	0
	0.1%	64	0.03	0
	0.3%	128	0.07	0
250	0.3%	64	0.03	0
	0.2%	64	0.03	0
	0.1%	64	0.03	0
	0.1%	64	0.03	0
	0.3%	128	0.08	0
	0.2%	64	0.03	0
	0.1%	66	0.03	0
	0.2%	66	0.03	0
	0.2%	66	0.04	0
	0.1%	66	0.03	0

260	0.2%	66	0.04	0
	0.1%	64	0.03	0
	0.2%	64	0.03	0
	0.2%	64	0.03	0
	0.2%	64	0.03	0
	0.2%	64	0.03	0
	0.2%	64	0.03	0
	0.1%	64	0.03	0
	0.1%	64	0.03	0
	0.4%	128	0.08	0
270	0.2%	64	0.03	0
	0.3%	66	0.05	0
	0.2%	66	0.03	0
	0.2%	66	0.04	0
	0.2%	66	0.05	0
	0.5%	66	0.08	0
	0.3%	66	0.05	0
	0.3%	66	0.04	0
	0.1%	66	0.03	0
	0.2%	66	0.03	0
280	0.1%	66	0.03	0
	0.2%	132	0.08	0
	0.3%	132	0.07	0
	0.2%	66	0.03	0
	0.2%	66	0.03	0
	0.2%	66	0.04	0
	0.2%	66	0.03	0
	0.2%	66	0.03	0
	0.1%	66	0.03	0
	0.0%	66	0.03	0
290	0.3%	132	0.06	0
	0.2%	66	0.03	0
	0.1%	66	0.03	0
	0.2%	66	0.03	0

	0.2%	66	0.03	0
	0.1%	66	0.03	0
	0.2%	66	0.03	0
	0.2%	66	0.03	0
	0.2%	66	0.03	0
	0.2%	66	0.03	0
300	0.2%	66	0.03	0

Tabela 38: 500 Objetos Pre-Runtime Box Physics2DSimulate

quadrosTotal	totalPercent	calls	totalTime	gcMemory
	10.2%	1	1.59	355500
	9.5%	1	1.78	355500
	9.5%			
	10.9%	1	2.43	355500
		1	1.62	355500
	12.3%	1	1.78	355500
	10.4%	1	1.78	355500
	10.6%	1	1.79	355500
	11.8%	1	2.24	355500
10	10.3%	1	1.73	355500
	11.8%	1	1.79	355500
	11.1%	1	2.24	455000
	9.8%	1	1.63	355500
	10.7%	1	1.65	455000
	13.0%	1	2.35	355500
	9.7%	1	1.64	355500
	36.8%	1	1.65	355500
	9.8%	1	3.00	355500
	9.7%	1	3.63	355500
20	36.8%	1	4.93	700000
	13.7%	1	3.00	355500
	10.4%	1	2.98	700000

	10.4%	1	2.98	700000
	6.0%	2	1.91	700000
	17.4%	1	2.05	355500
	46.5%	1	2.93	355500
	19.4%	1	2.22	355500
	11.9%	1	2.23	355500
	13.1%	1	2.45	355500
30	16.7%	1	2.19	355500
	13.9%	1	1.98	355600
	13.4%	1	1.77	355500
	14.5%	1	2.28	355500
	12.6%	1	1.77	355500
	13.4%	1	2.50	355500
	15.5%	1	1.77	355500
	14.1%	1	2.58	355500
	15.0%	1	1.80	355500
	13.3%	1	2.58	355600
40	15.0%	1	1.64	355500
	11.2%	1	1.66	355500
	10.6%	1	2.22	355500
	15.1%	1	1.74	355500
	10.4%	1	1.72	355500
	10.0%	1	2.31	355500
	12.5%	1	1.69	355500
	11.3%	1	2.22	355500
	9.9%	1	1.60	355500
	14.1%	1	1.85	355500
50	10.3%	1	2.37	355600
	10.4%	1	1.96	700000
	12.0%	1	3.98	355500
	12.6%	2	3.98	355500
	8.5%	1	3.98	700000
	12.0%	1	1.96	355500
	7.3%		2.30	355600

	7.3%	2		
	7.3%		4.06	700000
	39.4%	1		
60	16.6%	1	1.92	383900
	13.6%	1	2.43	398100
		1	2.00	398100
	19.0%	1	1.98	398100
		1	2.50	398100
	9.4%	1	1.79	412300
	15.7%	1	2.53	900000
	12.3%	1	3.16	440800
	12.3%	1	1.91	455000
	12.3%	1	1.77	455000
70	14.3%	1	1.77	455000
	11.8%	1	3.00	700000
	15.5%	1	3.16	900000
	36.8%	1	3.00	700000
	11.1%	1	1.77	455000
	36.8%	1	2.49	469200
	14.9%	1	1.79	497700
	11.8%	1	1.79	504800
	11.1%	1	2.48	500000
	13.3%	1	1.91	500000
80	11.4%	1	2.55	600000
	15.2%	1	2.07	600000
	11.1%	1	1.99	600000
	10.9%	1	2.65	600000
	12.0%	1	3.00	700000
	12.1%	1	9.00	600000
	36.8%	1	3.32	1200000
	14.3%	1	2.32	700000
	12.3%	1	3.18	1200000
	50.9%	1	2.31	700000
90	12.5%	1	3.00	900000

	9.0%	1	3.16	900000
	15.5%	1	3.16	700000
	36.8%	1	2.45	700000
	15.5%	1	2.47	900000
	14.5%	1	3.21	900000
	17.4%	1	2.50	900000
	14.0%	1	3.16	900000
	16.5%	1	2.78	900000
	15.0%	1	2.82	900000
100	15.5%	1	3.27	900000
	18.5%	1	3.16	900000
	17.3%	1	2.45	900000
	17.1%	1	2.53	900000
	19.3%	1	2.45	900000
	15.1%	1	3.16	1000000
	15.5%	1	2.62	1200000
	50.9%	1	3.18	1600000
	17.6%	1	2.65	1000000
	22.0%	1	3.33	1200000
110	16.6%	1	3.18	1100000
	50.9%	1	3.19	1100000
	14.1%	1	2.66	1100000
	19.3%	2	2.78	1100000
	16.0%	1	4.27	1100000
	18.2%	1	2.72	1200000
	16.9%	1	3.18	1100000
	50.9%	1	3.39	1100000
	21.0%	1	2.79	1200000
	20.8%	1	19.71	1200000
120	16.7%	1	8.03	2400000
	20.7%	1	3.10	1200000
	10.0%	1	3.62	1200000
	50.9%	1	3.18	1200000
	56.4%	1	3.05	1200000

	22.0%	1	3.66	1600000
	20.5%	1	3.33	1200000
	21.3%	1	3.11	1200000
	22.0%	1	4.41	1600000
	59.7%	1	3.33	2100000
130	18.4%	1	4.47	1200000
	22.0%	1	3.11	1200000
	20.2%	1	3.33	1600000
	24.7%	1	3.75	1300000
	20.2%	1	3.35	1300000
	18.5%	1	3.16	1400000
	22.1%	1	3.71	1500000
	20.2%	1	3.19	1500000
	19.7%	1	3.24	1600000
	22.0%	1	3.84	1600000
140	19.5%	1	3.33	1600000
	20.7%	1	3.30	2100000
	59.7%	1	3.86	1700000
	22.0%	1	3.45	1700000
	18.9%	1	4.47	2100000
	23.6%	2	3.36	1700000
	59.7%	1	4.05	2100000
	59.7%	1	3.41	1800000
	21.4%	1	4.47	2600000
	26.0%	1	3.54	1800000
150	23.4%	1	4.47	1900000
	19.2%	1	3.68	1900000
	26.8%	1	4.74	3900000
	13.0%	1	8.30	2000000
	33.1%	1	10.10	2100000
	59.7%	1	4.23	2100000
	26.3%	1	4.70	2200000
	26.0%	1	4.37	2200000
	27.4%	1	4.47	2600000

	26.0%	1	4.67	2200000
160	30.6%	1	4.70	2600000
	28.0%	1	5.06	2200000
	30.0%	1	4.74	2200000
	26.0%	1	4.26	2600000
	26.6%	1	4.74	2300000
	27.4%	1	4.85	2400000
	48.9%	1	4.34	3600000
	27.7%	1	16.22	2500000
	56.9%	1	4.74	2600000
	44.7%	1	5.18	2600000
170	26.0%	1	4.24	2700000
	27.6%	1	4.38	3000000
	28.6%	1	6.84	3600000
	29.6%	1	5.04	3100000
	27.4%	1	4.71	3600000
	48.9%	1	4.74	3200000
	48.9%	1	5.24	3200000
	29.8%	2	5.03	3300000
	32.0%	1	5.16	3300000
	35.9%	1	7.12	6800000
180	40.6%	2	6.84	3600000
	48.9%	1	6.26	3500000
	21.1%	1	6.84	3500000
	44.0%	2	5.42	3500000
	66.4%	1	5.66	3600000
	48.9%	2	5.50	4400000
	36.2%	1	13.99	3600000
	39.8%	2	6.10	3700000
	44.6%	1	6.84	3800000
	40.9%	1	7.20	4400000
190	36.2%	1	7.10	3900000
	42.6%	1	6.96	4400000
	36.2%	1	6.84	3800000

	68.1%	1	7.50	3900000
	55.0%	2	14.07	4099999.9999999995
	43.6%	1	7.50	4099999.9999999995
	41.4%	2	7.31	4300000
	44.6%	1	7.06	4300000
	43.8%	1	6.84	4200000
	36.2%	1	7.50	4400000
200	42.7%	1	6.84	4400000
	36.2%	1	7.58	4500000
	65.3%	1	7.05	4300000
	68.2%	1	6.87	4500000
	53.9%	2	7.84	4500000
	44.4%	2	14.46	4500000
	47.4%	2	14.81	4099999.9999999995
	46.2%	1	7.74	9000000
	72.0%	1	7.50	8700000
	72.1%	1	7.50	8700000
210	28.7%	1	7.74	4099999.9999999995
	61.7%	1	7.70	4300000
	73.1%	1	7.60	4300000
	72.1%	1	19.40	4200000
	52.8%	1	8.47	4200000
	72.1%	1	21.92	4099999.9999999995
	42.4%	1	17.56	4099999.9999999995
	39.8%	2	14.92	4200000
	51.8%	1	7.66	4000000
	44.2%	1	7.19	4099999.9999999995
220	42.7%	1	7.08	4200000
	72.1%	1	8.25	4099999.9999999995
	69.4%	1	6.22	7000000
	67.8%	1	7.02	4099999.9999999995
	72.1%	1	6.73	4099999.9999999995
	53.7%	1	16.08	4000000
	44.4%	1	7.70	3900000

	39.5%	1	6.22	7000000
	40.5%	1	7.16	3900000
	39.4%	1	6.22	7000000
230	69.4%	1	6.42	3900000
	41.2%	1	6.52	3700000
	69.4%	1	6.96	3700000
	48.1%	2	6.32	3700000
	45.7%	2	6.68	3500000
	44.5%	1	8.51	3700000
	39.4%	1	6.49	7000000
	39.1%	2	6.22	7000000
	37.4%	1	7.62	3500000
	69.4%	1	6.30	7000000
240	18.7%	1	6.22	3500000
	58.3%	1	6.22	3400000
	64.0%	1	19.74	3500000
	69.4%	1	12.86	3500000
	65.4%	1	21.57	3500000
	46.3%	1	12.52	3500000
	39.3%	1	6.49	3500000
	41.5%	1	6.47	3500000
	39.1%	1	6.49	3600000
	39.1%	1	6.30	3600000
250	38.2%	1	6.46	3600000
	37.8%	1	6.51	3600000
	39.9%	1	6.58	3500000
	41.4%	1	6.49	3600000
	42.3%	1	6.40	3600000
	39.1%	1	6.53	3500000
	41.4%	1	6.67	3500000
	39.3%	1	6.49	3500000
	36.3%	1	6.40	3500000
	41.6%	1	6.30	3500000
260	39.1%	2	6.40	3500000

	38.9%	1	6.58	3600000
	38.2%	1	6.45	3400000
	37.2%	1	6.32	3100000
	69.3%	1	5.84	3400000
	39.9%	1	6.41	3600000
	46.9%	1	6.58	3600000
	52.2%	1	21.41	3600000
	35.4%	1	6.58	7200000
	39.9%	1	13.08	3600000
270	23.4%	1	6.52	3600000
	39.9%	1	6.25	3600000
	45.8%	1	6.40	3700000
	68.1%	2	14.97	3600000
	50.9%	1	6.97	3600000
	38.9%	1	6.58	3500000
	40.3%	1	6.68	3500000
	38.4%	1	6.56	3300000
	38.3%	1	5.84	3100000
	39.9%	1	5.61	3400000
280	38.1%	1	6.48	3400000
	33.1%	1	6.49	3400000
	46.9%	1	5.84	3100000
	41.0%	2	6.06	3400000
	36.8%	1	6.46	6600000
	46.9%	1	5.84	3100000
	36.9%	1	6.22	3200000
	68.9%	1	5.79	3200000
	46.9%	1	12.38	3300000
	66.3%	1	5.92	3200000
290	47.3%	1	5.98	3200000
	26.3%	2	5.84	3200000
	34.1%	1	5.78	3200000
	37.0%	1	5.61	3200000
	38.4%	1	7.59	3100000

	29.1%	1	8.43	3100000
	48.6%	1	5.61	3300000
	38.4%	1	6.03	3300000
	46.9%	1	5.92	3100000
	46.7%	1	5.71	3300000
300	33.1%	1	5.71	6400000

C.1.6   MIL OBJETOS

Tabela 39: 1000 Objetos Pre-Runtime Box OnCollisionEnter2D

quadrosTotal	totalPercent	calls	totalTime	gcMemory
60				
	0.0%	8	0.00	0
	0.0%	4	0.01	
				0
	0.0%	4	0.00	0
70	0.0%	8	0.00	0
	0.0%	8	0.00	0
	0.0%	6		
			0.00	0
	0.0%	10	0.00	0
	0.0%	4	0.00	0
	0.0%	6	0.00	0
	0.0%	10	0.00	0

80	0.0%	8	0.00	0
	0.0%	18	0.00	0
	0.0%	10	0.00	0
	0.0%	4	0.00	0
	0.0%	22	0.00	0
	0.0%	10	0.00	0
	0.0%	2	0.00	0
	0.0%	10	0.01	0
	0.0%	10	0.01	0
	0.1%	10	0.00	0
90	0.0%	10	0.00	0
	0.1%	8	0.00	0
	0.0%	10	0.00	0
	0.0%	20	0.01	0
	0.0%	14	0.00	0
	0.0%	22	0.01	0
	0.0%	20	0.00	0
	0.0%	14	0.01	
				0
	0.0%	12	0.00	0
100	0.0%	8	0.00	0
	0.0%	10	0.00	0
	0.1%	10	0.00	0
	0.0%	12	0.00	0
	0.0%	14	0.01	0
	0.0%	20	0.01	0
	0.0%	22	0.01	0
	0.0%	20	0.01	0
	0.0%	22	0.00	0
	0.0%	18	0.01	0
110	0.0%	22	0.01	0
	0.0%	34	0.00	0
	0.1%	20	0.00	0
	0.0%	14	0.00	0

	0.0%	46	0.00	0
	0.0%	18	0.01	0
	0.0%	20	0.01	0
	0.0%	26	0.01	0
	0.0%	24	0.01	0
	0.0%	40	0.00	0
120	0.1%	16	0.01	0
	0.0%	14	0.00	0
	0.1%	22	0.01	0
	0.1%	46	0.00	0
	0.0%	16	0.01	0
	0.0%	14	0.00	0
	0.0%	18	0.01	0
	0.0%	20	0.00	0
	0.0%	10	0.00	0
	0.0%	12	0.00	0
130	0.0%	24	0.01	0
	0.0%	24	0.00	0
	0.0%	34	0.00	0
	0.0%	46	0.01	0
	0.1%	18	0.00	0
	0.1%	14	0.02	0
	0.0%	44	0.01	0
	0.0%	10	0.01	0
	0.0%	46	0.02	0
	0.0%	22	0.01	0
140	0.1%	44	0.02	0
	0.0%	46	0.01	0
	0.0%	30	0.02	0
	0.1%	22	0.01	0
	0.1%	26	0.01	0
	0.0%	28	0.01	0
	0.1%	24	0.03	0
	0.0%	48	0.05	0

	0.0%	60	0.02	0
	0.0%	72	0.00	0
150	0.1%	44	0.02	0
	0.1%	44	0.02	0
	0.1%	30	0.01	0
	0.2%	18	0.03	0
	0.2%	60	0.02	0
	0.0%	70	0.02	0
	0.0%	32	0.02	0
	0.1%	44	0.01	0
	0.0%	70	0.01	0
	0.1%	40	0.01	0
160	0.1%	40	0.00	0
	0.1%	32	0.02	0
	0.1%	42	0.01	0
	0.0%	22	0.02	0
	0.0%	46	0.01	0
	0.1%	44	0.02	0
	0.0%	70	0.02	0
	0.1%	54	0.02	0
	0.0%	38	0.02	0
	0.1%	56	0.03	0
170	0.1%	70	0.03	0
	0.1%	42	0.03	0
	0.0%	70	0.02	0
	0.1%	60	0.02	0
	0.1%	56	0.03	0
	0.0%	46	0.02	0
	0.3%	58	0.11	0
	0.1%	64	0.07	0
	0.1%	118	0.03	0
	0.1%	64	0.05	0
180	0.2%	156	0.03	0
	0.1%	122	0.03	0

	0.1%	68	0.03	0
	0.1%	80	0.03	0
	0.0%	62	0.03	0
	0.1%	64	0.03	0
	0.2%	68	0.03	0
	0.3%	74	0.09	0
	0.2%	146	0.03	0
	0.1%	220	0.05	0
190	0.2%	162	0.02	0
	0.1%	76	0.03	0
	0.1%	62	0.02	0
	0.1%	220	0.03	0
	0.3%	64	0.07	0
	0.2%	64	0.03	0
	0.3%	336	0.03	0
	0.1%	62	0.03	0
	0.1%	220	0.03	0
	0.1%	78	0.37	0
200	0.1%	74	0.03	0
	0.2%	336	0.04	0
	0.2%	68	0.14	0
	0.1%	336	0.17	0
	0.2%	90	0.37	0
	0.1%	86	0.37	0
	0.2%	220	0.09	0
	0.3%	248	0.22	0
	0.2%	220	0.16	0
	0.1%	872	0.19	0
210	0.4%	164	0.21	0
	0.3%	176	0.22	0
	0.3%	336	0.37	0
	0.2%	436	0.40	0
	0.3%	872	0.37	0
	0.3%	300	0.37	0

	0.3%	830	0.38	0
	0.3%	336	0.37	0
	0.3%	872	0.42	0
	0.3%	454	0.49	0
220	0.3%	830	0.37	0
	0.3%	538	0.42	0
	0.3%	648	0.52	0
	0.2%	740	0.42	0
	0.2%	830	0.37	0
	0.3%	828	0.42	0
	0.4%	872	0.37	0
	0.3%	716	0.42	0
	0.3%	786	0.41	0
	0.2%	626	0.37	0
230	0.3%	872	0.34	0
	0.3%	830	0.20	0
	0.2%	626	0.20	0
	0.2%	956	0.31	0
	0.2%	854	0.37	0
	0.2%	522	0.32	0
	0.3%	724	0.35	0
	0.2%	522	0.32	0
	0.2%	830	0.24	0
	0.3%	704	0.36	0
240	0.2%	626	0.24	0
	0.2%	748	0.30	0
	0.2%	728	0.20	0
	0.2%	626	0.28	0
	0.2%	602	0.20	0
	0.2%	614	0.47	0
	0.2%	522	0.30	0
	0.1%	608	0.23	0
	0.2%	626	0.26	0
	0.1%	522	0.24	0

250	0.2%	620	0.24	0
	0.1%	626	0.20	0
	0.2%	576	0.16	0
	0.1%	438	0.15	0
	0.1%	522	0.22	0
	0.1%	656	0.13	0
	0.2%	522	0.16	0
	0.1%	432	0.10	0
	0.1%	358	0.04	0
	0.1%	470	0.18	0
260	0.2%	388	0.29	0
	0.1%	400	0.04	0
	0.1%	256	0.19	0
	0.1%	312	0.12	0
	0.1%	92	0.16	0
	0.1%	300	0.16	0
	0.1%	52	0.15	0
	0.1%	368	0.18	0
	0.1%	206	0.12	0
	0.1%	52	0.16	0
270	0.0%	184	0.11	0
	0.1%	164	0.09	0
	0.1%	296	0.04	0
	0.1%	300	0.09	0
	0.1%	300	0.08	0
	0.1%	252	0.07	0
	0.0%	236	0.08	0
	0.1%	244	0.04	0
	0.1%	300	0.05	0
	0.1%	240	0.05	0
280	0.1%	52	0.05	0
	0.2%	200	0.03	0
	0.1%	204	0.04	0
	0.0%	82	0.03	0

	0.1%	162	0.04	0
	0.1%	126	0.04	0
	0.0%	106	0.07	0
	0.1%	144	0.05	0
	0.1%	100	0.06	0
	0.1%	82	0.04	0
290	0.1%	70	0.10	0
	0.1%	52	0.03	0
	0.0%	92	0.03	0
	0.1%	52	0.04	0
	0.0%	82	0.08	0
	0.1%	52	0.06	0
	0.0%	24	0.04	0
	0.1%	34	0.04	0
	0.1%	72	0.03	0
	0.0%	104	0.04	0
300	0.1%	168	0.02	0

Tabela 40: 1000 Objetos Pre-Runtime Box OnCollisionExit2D

quadrosTotal	totalPercent	calls	totalTime	gcMemory
70	0.4%	2		0
			0.00	
	0.0%	2		0
	0.0%			
	0.0%			
			0.00	
		4	0.00	0
		114	0.00	0
	0.0%	4	0.00	0

80	0.0%	4	0.00	0
	0.0%	6		0
	0.0%		0.00	
	0.0%	12		0
		2	0.00	0
	0.0%			
		2	0.00	
			0.00	0
	0.0%	12	0.00	0
	0.0%	8	0.00	0
90	0.0%	32	0.00	0
	0.0%	8	0.00	0
	0.0%	6	0.00	0
	0.0%	6	0.00	0
	0.0%	32	0.00	0
	0.0%	32	0.00	0
	0.0%	2	0.00	0
	0.0%	18	0.00	0
	0.0%	10	0.00	0
	0.0%	6	0.06	0
100	0.0%	6	0.00	0
	0.0%	2	0.00	0
	0.0%	18	0.00	0
	0.0%	18	0.00	0
	0.0%	16	0.01	0
	0.0%	16	0.01	0
	0.0%	18	0.00	0
	0.0%	14	0.06	0
	0.0%	22	0.01	0
	0.0%	12	0.00	0
110	0.0%	22	0.00	0
	0.1%	8	0.01	0
	0.1%	114	0.00	0
	0.0%	10	0.02	0

	0.0%	18	0.01	0
	0.1%	18	0.01	0
	0.0%	14	0.00	0
	0.0%	10	0.03	0
	0.0%	14	0.00	0
	0.0%	30	0.00	0
120	0.0%	10	0.06	0
	0.0%	46	0.06	0
	0.0%	16	0.00	0
	0.0%	14	0.00	0
	0.0%	10	0.00	0
	0.3%	114	0.00	0
	0.0%	12	0.01	0
	0.1%	114	0.01	0
	0.0%	16	0.00	0
	0.0%	12	0.01	0
130	0.0%	18	0.01	0
	0.0%	12	0.01	0
	0.0%	10	0.01	0
	0.0%	10	0.00	0
	0.0%	32	0.01	0
	0.0%	14	0.11	0
	0.0%	8	0.00	0
	0.0%	40	0.00	0
	0.0%	32	0.00	0
	0.0%	12	0.01	0
140	0.0%	32	0.11	0
	0.0%	18	0.00	0
	0.0%	12	0.01	0
	0.3%	30	0.25	0
	0.1%	18	0.01	0
	0.0%	32	0.03	0
	0.1%	16	0.01	0
	0.0%	18	0.01	0

	0.1%	18	0.01	0
	0.1%	18	0.01	0
150	0.3%	14	0.01	0
	0.0%	50	0.01	0
	0.0%	340	0.25	0
	0.0%	46	0.06	0
	0.0%	24	0.01	0
	0.1%	28	0.06	0
	0.0%	28	0.02	0
	0.1%	22	0.03	0
	0.0%	28	0.01	0
	0.1%	18	0.01	0
160	0.0%	340	0.03	0
	0.1%	28	0.02	0
	0.3%	114	0.04	0
	0.0%	114	0.02	0
	0.1%	22	0.01	0
	0.3%	46	0.02	0
	0.1%	46	0.06	0
	0.1%	42	0.03	0
	0.2%	38	0.02	0
	0.0%	28	0.09	0
170	0.1%	72	0.25	0
	0.2%	46	0.41	0
	0.1%	42	0.06	0
	0.2%	114	0.04	0
	0.1%	340	0.06	0
	0.3%	926	0.03	0
	0.3%	46	0.03	0
	0.1%	114	0.03	0
	0.3%	46	0.02	0
	0.1%	90	0.25	0
180	0.1%	46	0.02	0
	0.1%	106	0.41	0

	0.2%	62	0.02	0
	0.1%	340	0.05	0
	0.3%	926	0.25	0
	0.1%	38	0.03	0
	0.3%	42	0.03	0
	0.3%	340	0.01	0
	0.2%	56	0.02	0
	0.1%	46	0.02	0
190	0.3%	104	0.03	0
	0.3%	50	0.25	0
	0.2%	68	0.02	0
	0.2%	46	0.03	0
	0.2%	150	0.25	0
	0.3%	340	0.41	0
	0.2%	34	0.15	0
	0.1%	926	0.13	0
	0.2%	40	0.10	0
	0.3%	340	0.25	0
200	0.2%	604	0.25	0
	0.3%	64	0.08	0
	0.2%	198	0.41	0
	0.3%	926	0.07	0
	0.3%	340	0.15	0
	0.3%	252	0.17	0
	0.3%	604	0.25	0
	0.2%	356	0.16	0
	0.3%	926	0.41	0
	0.2%	340	0.16	0
210	0.2%	388	0.21	0
	0.2%	522	0.25	0
	0.3%	684	0.35	0
	0.1%	926	0.38	0
	0.3%	596	0.41	0
	0.3%	550	0.27	0

	0.3%	926	0.43	0
	0.2%	926	0.41	0
	0.1%	676	0.41	0
	0.3%	938	0.49	0
220	0.4%	604	0.44	0
	0.2%	604	0.45	0
	0.3%	838	0.25	0
	0.2%	852	0.42	0
	0.3%	926	0.25	0
	0.2%	318	0.41	0
	0.2%	858	0.37	0
	0.3%	604	0.12	0
	0.2%	780	0.25	0
	0.3%	318	0.12	0
230	0.3%	604	0.37	0
	0.1%	596	0.25	0
	0.2%	604	0.33	0
	0.3%	624	0.25	0
	0.3%	604	0.31	0
	0.1%	640	0.32	0
	0.2%	688	0.41	0
	0.1%	526	0.25	0
	0.2%	466	0.38	0
	0.1%	318	0.29	0
240	0.1%	604	0.24	0
	0.1%	478	0.34	0
	0.1%	444	0.45	0
	0.2%	318	0.37	0
	0.1%	318	0.25	0
	0.2%	480	0.12	0
	0.1%	318	0.26	0
	0.1%	318	0.23	0
	0.3%	454	0.12	0
	0.1%	104	0.22	0

250	0.2%	274	0.12	0
	0.1%	104	0.12	0
	0.1%	308	0.16	0
	0.1%	318	0.14	0
	0.1%	268	0.12	0
	0.2%	318	0.18	0
	0.1%	230	0.04	0
	0.1%	104	0.04	0
	0.1%	104	0.12	0
	0.1%	202	0.12	0
260	0.1%	240	0.14	0
	0.1%	104	0.22	0
	0.1%	316	0.13	0
	0.1%	286	0.12	0
	0.0%	104	0.20	0
	0.1%	118	0.04	0
	0.1%	104	0.04	0
	0.0%	180	0.14	0
	0.1%	104	0.29	0
	0.0%	180	0.04	0
270	0.1%	104	0.17	0
	0.0%	118	0.10	0
	0.1%	118	0.12	0
	0.0%	102	0.08	0
	0.0%	98	0.04	0
	0.1%	102	0.04	0
	0.0%	118	0.05	0
	0.0%	58	0.04	0
	0.1%	104	0.10	0
	0.1%	118	0.04	0
280	0.0%	102	0.04	0
	0.0%	114	0.04	0
	0.0%	64	0.03	0
	0.1%	102	0.03	0

quadrosTotal	totalPercent	calls	totalTime	gcMemory
	0.0%	68	0.04	0
	0.1%	102	0.10	0
	0.0%	66	0.10	0
	0.0%	136	0.03	0
	0.0%	118	0.03	0
	0.0%	118	0.03	0
290	0.0%	126	0.05	0
	0.1%	118	0.02	0
	0.0%	118	0.04	0
	0.0%	102	0.07	0
	0.0%	102	0.03	0
	0.0%	102	0.03	0
	0.0%	46	0.11	0
	0.0%	102	0.03	0
	0.1%	140	0.04	0
	0.0%	132	0.07	0
300	0.0%	128	0.03	0

Tabela 41: 1000 Objetos Pre-Runtime Box OnCollisionStay2D

quadrosTotal	totalPercent	calls	totalTime	gcMemory
	0.7%	800	0.58	0
	0.6%	1502	2.20	0
	2.8%	1502	0.89	0
	0.6%	200	2.20	0
	0.9%	200	1.46	0
	0.6%	200	0.20	0
	0.5%	200	1.46	0
	4.1%	200	0.10	0
10	4.1%	200	0.09	0
	4.1%	200	0.09	0
	0.5%	200	2.20	0

	0.7%	3004	0.10	0
	0.6%	200	0.12	0
	4.1%	3004	0.10	0
	2.8%	200	0.11	0
	2.8%	200	0.09	0
	0.5%	200	0.09	0
	0.5%	200	0.09	0
20	0.6%	200	0.09	0
	0.6%	200	2.20	0
	0.6%	200	2.20	0
	0.6%	200	0.10	0
	4.1%	200	0.10	0
	0.6%	200	0.08	0
	4.1%	200	0.10	0
	0.6%	200	0.10	0
	0.6%	200	0.10	0
	0.3%	200	0.08	0
30	0.6%	200	0.09	0
	0.8%	400	0.09	0
	0.6%	200	0.08	0
	0.5%	200	0.08	0
	0.5%	200	0.10	0
	0.6%	200	0.09	0
	0.6%	200	0.09	0
	0.6%	200	0.10	0
	0.5%	200	0.10	0
	0.6%	200	0.09	0
40	0.4%	200	0.09	0
	0.6%	200	0.08	0
	0.5%	200	0.09	0
	0.6%	200	0.08	0
	0.5%	200	0.09	0
	0.5%	200	0.08	0
	0.6%	200	0.11	0

	0.5%	200	0.10	0
	0.6%	200	0.10	0
	0.5%	200	0.08	0
50	0.6%	200	0.11	0
	0.5%	200	0.11	0
	0.5%	212	0.08	0
	0.4%	200	0.09	0
	0.6%	200	0.08	0
	0.5%	200	0.11	0
	0.6%	212	0.08	0
	0.7%	200	0.21	0
	0.5%	212	1.46	0
	0.5%	200	0.08	0
60	0.6%	212	0.11	0
	0.6%	200	0.09	0
	0.5%	200	0.10	0
	4.9%	200	0.09	0
	0.8%	1502	0.10	0
	1.0%	212	0.11	0
	0.8%	200	0.09	0
	0.5%	200	0.09	0
	0.5%	212	0.08	0
	0.6%	208	0.11	0
70	0.5%	212	0.09	0
	4.9%	3030	0.10	0
	0.5%	212	0.09	0
	4.9%	3030	0.11	0
	0.7%	212	0.09	0
	4.9%	212	0.10	0
	0.6%	214	0.15	0
	0.8%	222	0.10	0
	0.5%	228	0.09	0
	4.9%	342	0.13	0
80	0.7%	226	0.11	0

	0.5%	3030	0.15	0
	4.9%	226	0.12	0
	0.6%	226	0.14	0
	0.5%	3030	0.12	0
	0.6%	3030	0.16	0
	0.8%	3030	0.84	0
	0.5%	236	0.12	0
	0.8%	342	0.15	0
	0.8%	248	0.15	0
90	0.9%	320	0.14	0
	0.4%	254	0.12	0
	2.9%	3030	0.13	0
	0.8%	342	0.15	0
	1.0%	342	0.16	0
	0.8%	274	0.16	0
	0.6%	320	0.14	0
	0.8%	278	0.19	0
	0.8%	342	0.15	0
	0.9%	280	0.15	0
100	0.8%	342	0.16	0
	0.8%	320	0.14	0
	0.9%	342	0.15	0
	1.0%	320	0.15	0
	1.0%	330	0.14	0
	0.9%	342	0.16	0
	0.9%	320	0.16	0
	0.9%	338	0.19	0
	1.0%	342	0.18	0
	1.2%	320	0.19	0
110	1.3%	334	0.15	0
	1.0%	330	0.16	0
	1.3%	320	0.15	0
	1.1%	320	0.19	0
	2.9%	326	0.20	0

	1.2%	342	0.16	0
	1.4%	352	0.16	0
	1.7%	362	0.16	0
	1.2%	372	0.19	0
	1.7%	382	0.20	0
120	1.3%	396	0.19	0
	1.7%	408	0.20	0
	1.7%	492	0.20	0
	1.2%	848	0.19	0
	1.2%	424	0.20	0
	1.2%	492	0.19	0
	2.6%	492	0.22	0
	1.1%	492	0.19	0
	2.6%	430	0.19	0
	2.6%	444	0.22	0
130	2.6%	450	0.90	0
	1.3%	492	0.22	0
	1.7%	450	0.22	0
	1.7%	492	0.19	0
	1.4%	488	0.20	0
	1.1%	486	0.20	0
	2.6%	492	0.20	0
	1.7%	474	0.20	0
	2.2%	484	0.22	0
	2.6%	492	0.20	0
140	2.1%	992	0.22	0
	1.7%	512	0.24	0
	1.7%	526	0.24	0
	1.3%	516	0.22	0
	1.7%	542	0.20	0
	2.6%	552	0.24	0
	1.4%	1154	0.22	0
	2.6%	606	0.24	0
	2.8%	598	0.20	0

	2.2%	1194	0.20	0
150	2.1%	668	0.21	0
	1.6%	1194	0.22	0
	2.5%	1352	0.30	0
	1.7%	696	0.30	0
	1.7%	734	0.30	0
	1.8%	750	0.22	0
	1.8%	1194	0.24	0
	2.2%	1194	0.30	0
	1.8%	760	0.22	0
	4.4%	1352	0.23	0
160	2.3%	784	0.24	0
	3.9%	1604	0.31	0
	2.5%	822	0.46	0
	2.8%	1194	0.31	0
	4.4%	850	0.33	0
	2.5%	1352	0.30	0
	3.3%	874	0.30	0
	1.4%	1194	0.31	0
	4.4%	888	0.23	0
	4.3%	1352	0.31	0
170	3.2%	882	0.24	0
	4.4%	1842	0.25	0
	3.4%	1906	0.30	0
	2.6%	1352	0.24	0
	3.0%	1352	0.43	0
	4.4%	1980	0.24	0
	4.4%	980	0.31	0
	1.6%	986	0.43	0
	4.2%	1028	0.88	0
	4.0%	1048	0.65	0
180	4.0%	1090	0.31	0
	3.2%	1194	0.28	0
	3.5%	2192	0.30	0

	4.2%	1186	0.29	0
	3.9%	1194	0.43	0
	4.4%	10166	0.30	0
	4.0%	1242	0.43	0
	5.3%	1352	0.28	0
	4.0%	2496	0.43	0
	4.4%	1252	0.31	0
190	2.7%	1320	0.34	0
	5.2%	1352	0.34	0
	5.2%	1352	0.43	0
	3.4%	4206	0.31	0
	4.5%	5840	0.31	0
	4.7%	10166	0.34	0
	3.7%	4556	0.31	0
	4.0%	3064	0.35	0
	5.7%	6474	2.48	0
	4.0%	10166	0.38	0
200	5.8%	3096	0.43	0
	4.0%	4904	0.39	0
	4.1%	7034	0.43	0
	5.1%	7394	0.51	0
	5.2%	10166	2.48	0
	4.0%	12268	0.45	0
	3.4%	13784	6.53	0
	5.1%	6474	1.51	0
	3.4%	10166	2.48	0
	4.2%	14158	1.20	0
210	6.0%	6474	2.48	0
	4.0%	3006	0.44	0
	5.7%	13832	0.45	0
	4.0%	14116	6.53	0
	5.0%	14216	0.51	0
	5.4%	10166	0.58	0
	6.3%	12560	2.48	0

	2.9%	11714	0.55	0
	5.0%	11484	6.53	0
	4.0%	11956	2.48	0
220	3.4%	6474	1.05	0
	5.1%	11978	1.15	0
	3.4%	11706	0.57	0
	4.8%	6474	0.60	0
	4.9%	3006	6.53	0
	5.1%	3006	0.60	0
	4.7%	11996	0.61	0
	5.8%	4554	4.07	0
	4.0%	11916	0.67	0
	4.9%	11490	6.53	0
230	4.0%	11336	0.63	0
	5.5%	10166	5.57	0
	4.0%	11200	0.67	0
	5.5%	3138	6.53	0
	6.0%	10528	0.72	0
	2.9%	10412	2.95	0
	5.8%	6474	2.48	0
	2.9%	8598	3.11	0
	4.6%	10282	1.47	0
	3.4%	10354	4.07	0
240	5.9%	10166	1.53	0
	4.0%	3006	2.93	0
	2.8%	8354	4.07	0
	2.8%	3006	2.48	0
	6.6%	4554	3.22	0
	2.8%	6634	3.48	0
	5.7%	4554	5.57	0
	3.0%	6484	4.54	0
	6.6%	8216	5.57	0
	4.1%	10002	5.46	0
250	5.8%	3004	6.53	0

	4.1%	4626	5.49	0
	4.2%	3004	5.85	0
	4.9%	3004	5.17	0
	4.1%	9372	7.08	0
	4.7%	9450	4.07	0
	6.3%	9722	6.83	0
	4.6%	1502	6.76	0
	5.3%	1502	4.07	0
	3.6%	1502	6.75	0
260	4.0%	9440	6.53	0
	0.7%	3004	5.57	0
	5.4%	9406	6.65	0
	3.4%	9308	6.58	0
	6.1%	7940	5.57	0
	5.9%	8066	6.29	0
	5.4%	6518	5.53	0
	5.3%	6474	4.07	0
	4.0%	4774	5.91	0
	2.9%	6334	5.90	0
270	2.9%	4716	5.57	0
	5.2%	3156	3.09	0
	5.0%	4728	5.86	0
	5.4%	4640	6.23	0
	5.6%	3074	5.49	0
	3.4%	3006	4.73	0
	5.5%	3094	5.65	0
	5.1%	1544	4.07	0
	5.1%	3078	6.29	0
	5.1%	4554	4.51	0
280	3.0%	4554	5.57	0
	4.0%	5964	4.97	0
	2.8%	4452	4.02	0
	2.8%	4490	3.30	0
	5.4%	3006	4.92	0

	4.9%	6092	2.20	0
	2.8%	4638	4.42	0
	4.6%	3138	4.02	0
	5.7%	3138	3.09	0
	5.1%	3140	2.98	0
290	4.7%	4664	6.68	0
	1.9%	4534	4.71	0
	4.9%	1502	1.46	0
	4.8%	2952	1.46	0
	3.4%	4454	5.12	0
	5.0%	3004	1.46	0
	5.1%	2958	4.50	0
	3.7%	3004	2.20	0
	0.7%	2992	2.20	0
	END	2998	5.35	0
300		3004	4.07	0

Tabela 42: 1000 Objetos Pre-Runtime Box OnTriggerEnter2D

quadrosTotal	totalPercent	calls	totalTime	gcMemory
30				
	0.7%	4	0.11	
40				

				0
	0.0%		0.00	0
	0.0%			
50				
		8		
			0.00	0
	0.0%		0.00	
		8		
60		8		0
	0.0%	4	0.00	0
	0.0%		0.00	0
		8		
	0.0%		0.00	0
			0.00	
70				

		2		
	0.0%	2		0
	0.0%		0.00	0
80				
		4		
	0.0%	2	0.01	0
	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%	2	0.00	
	0.0%	4	0.00	
90				
				0
				0
	0.0%	2	0.00	0
	0.0%		0.00	
	0.0%	4	0.00	0
	0.0%	2		0
100		4	0.00	
	0.0%			0
		4	0.00	0
	0.0%	4	0.00	0
	0.0%		0.00	0
			0.00	
		2		
	0.0%	2		0
	0.0%		0.00	0

			0.00	
110				
		2		
	0.0%			0
			0.00	0
120				
		2		
	0.0%			
				0
		2		
	0.0%		0.00	
130				0
140				

		4		
	0.0%		0.01	
	0.0%			0
		2		
		2	0.00	
150	0.0%		0.00	0
		2		
	0.0%	2	0.00	0
	0.0%			
		2	0.00	0
	0.0%			0
		2	0.01	
	0.0%	2	0.00	
160	0.0%			
				0
		2	0.00	0
	0.0%			
		2	0.00	0
	0.0%		0.00	
170		2		0
	0.0%	2	0.00	
				0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
			0.01	
	0.0%	4		0

			0.00	
		2		0
			0.00	
180				
	0.0%			
		2		
	0.0%			0
190		2	0.00	
	0.0%			0
	0.0%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	
200				
	0.0%	4	0.00	0
				0
	0.0%	2	0.00	0
		4	0.00	0
		2		
	0.0%			
	0.0%		0.01	0
		2		
210				

	0.0%		0.01	0
		2		0
	0.0%		0.00	
	0.0%	2	0.01	0
	0.0%	6		0
			0.00	
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.00	0
220	0.0%	2		0
	0.0%	2	0.00	0
				0
	0.0%	2	0.00	0
	0.0%	2		0
	0.0%		0.00	
			0.00	0
		2		
	0.0%	2		
230	0.0%	2		0
				0
			0.01	
			0.00	
			0.00	
	0.0%	4		
	0.0%	2	0.00	0
	0.0%	4	0.00	0
	0.0%			0
		2		0
240	0.0%	2		0
	0.0%			
				0
				0

250				
300				

Tabela 43: 1000 Objetos Pre-Runtime Box OnTriggerExit2D

quadrosTotal	totalPercent	calls	totalTime	gcMemory
50				
	0.9%	4	0.09	0
60				
	0.0%	8	0.00	0
	0.0%			

70				
		8	0.00	0
	0.0%			
80				
		2	0.00	0
	0.0%	2	0.00	0
	0.0%	2		0
			0.00	
	0.0%	2	0.00	0
	0.0%	4	0.00	0
90				
	0.0%	2	0.00	0
100				
	0.0%	4	0.00	0
	0.0%	4	0.00	0

	0.0%	4	0.01	0
110	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
120				
	0.0%	2	0.00	0
	0.0%			
130				

140				
150		2	0.00	0
	0.0%			
		2	0.00	0
	0.0%	2		
160			0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
170				

	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
180				
	0.0%	2	0.00	0
	0.0%	4	0.00	0
190	0.0%	2	0.00	0
	0.0%	4	0.00	0
200				
	0.0%	2	0.00	0

	0.0%	2	0.00	0
	0.0%			
		2	0.00	0
210	0.0%			
		2	0.00	0
	0.0%	4		
			0.00	0
	0.0%	2	0.00	0
	0.0%	4	0.01	0
	0.0%	2	0.01	0
	0.0%	6	0.01	0
	0.0%	8	0.01	0
220	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
230				
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%			
		2	0.00	0
	0.0%			
		2	0.00	0

	0.0%			
240				
280				
		2	0.00	0
	0.0%			
290				
300				

Tabela 44: 1000 Objetos Pre-Runtime Box OnTriggerStay2D

quadrosTotal	totalPercent	calls	totalTime	gcMemory
30				
	0.5%	4	0.08	0
	0.0%	4	0.00	0
	0.0%	4	0.02	0
40	0.0%	4	0.00	0

	0.0%	4	0.00	0
	0.0%	4	0.00	0
	0.0%	4	0.00	0
	0.0%	4	0.00	0
	0.0%	4	0.00	0
	0.0%	4	0.01	0
	0.0%	12	0.01	0
	0.0%	12	0.01	0
	0.0%	12	0.01	0
50	0.0%	12	0.01	0
	0.0%	12	0.01	0
	0.0%	12	0.01	0
	0.0%	12	0.01	0
	0.0%	12	0.01	0
	0.0%	12	0.01	0
	0.0%	12	0.01	0
	0.1%	12	0.01	0
	0.1%	12	0.03	0
	0.0%	12	0.03	0
60	0.0%	20	0.03	0
	0.1%	20	0.03	0
	0.1%	40	0.00	0
	0.1%	16	0.01	0
	0.1%	16	0.01	0
	0.0%	24	0.01	0
	0.1%	28	0.03	0
	0.0%	28	0.01	0
	0.1%	20	0.01	0
	0.1%	20	0.01	0
70	0.1%	20	0.01	0
	0.1%	28	0.01	0
	0.1%	28	0.01	0
	0.0%	28	0.01	0
	0.1%	28	0.01	0

	0.1%	28	0.01	0
	0.0%	28	0.01	0
	0.1%	28	0.01	0
	0.0%	28	0.01	0
	0.0%	28	0.01	0
80	0.1%	28	0.01	0
	0.0%	28	0.01	0
	0.0%	22	0.01	0
	0.2%	24	0.00	0
	0.0%	24	0.01	0
	0.1%	22	0.03	0
	0.0%	20	0.01	0
	0.1%	24	0.04	0
	0.1%	26	0.01	0
	0.1%	60	0.02	0
90	0.1%	30	0.02	0
	0.1%	34	0.02	0
	0.1%	34	0.02	0
	0.1%	34	0.02	0
	0.1%	34	0.02	0
	0.1%	40	0.02	0
	0.1%	34	0.01	0
	0.1%	34	0.02	0
	0.1%	32	0.01	0
	0.1%	34	0.02	0
100	0.1%	36	0.02	0
	0.1%	36	0.02	0
	0.0%	40	0.02	0
	0.1%	40	0.02	0
	0.1%	40	0.01	0
	0.1%	36	0.03	0
	0.1%	36	0.02	0
	0.1%	40	0.02	0
	0.4%	40	0.02	0

	0.2%	40	0.08	0
110	0.1%	44	0.09	0
	0.2%	42	0.03	0
	0.1%	44	0.02	0
	0.1%	44	0.02	0
	0.1%	42	0.02	0
	0.1%	42	0.02	0
	0.0%	42	0.02	0
	0.3%	42	0.02	0
	0.2%	40	0.02	0
	0.1%	44	0.09	0
120	0.1%	46	0.03	0
	0.1%	88	0.02	0
	0.1%	42	0.02	0
	0.1%	40	0.02	0
	0.1%	40	0.02	0
	0.1%	40	0.02	0
	0.1%	40	0.02	0
	0.1%	40	0.02	0
	0.1%	40	0.02	0
	0.1%	40	0.02	0
130	0.1%	40	0.02	0
	0.1%	42	0.02	0
	0.1%	40	0.02	0
	0.1%	40	0.02	0
	0.1%	40	0.02	0
	0.2%	88	0.02	0
	0.0%	42	0.04	0
	0.3%	42	0.02	0
	0.2%	42	0.06	0
	0.1%	42	0.03	0
140	0.1%	88	0.02	0
	0.1%	84	0.03	0
	0.1%	42	0.02	0

	0.1%	42	0.02	0
	0.1%	42	0.02	0
	0.0%	42	0.02	0
	0.2%	42	0.02	0
	0.3%	42	0.02	0
	0.3%	42	0.10	0
	0.2%	42	0.08	0
150	0.2%	88	0.02	0
	0.1%	92	0.03	0
	0.1%	52	0.03	0
	0.2%	46	0.02	0
	0.3%	46	0.04	0
	0.2%	46	0.05	0
	0.1%	52	0.03	0
	0.1%	46	0.02	0
	0.1%	46	0.03	0
	0.1%	48	0.02	0
160	0.2%	48	0.02	0
	0.1%	50	0.02	0
	0.1%	48	0.02	0
	0.2%	50	0.02	0
	0.2%	50	0.03	0
	0.2%	50	0.03	0
	0.1%	52	0.03	0
	0.1%	50	0.02	0
	0.2%	48	0.02	0
	0.2%	104	0.02	0
170	0.1%	46	0.07	0
	0.2%	104	0.02	0
	0.1%	46	0.02	0
	0.1%	48	0.04	0
	0.0%	48	0.02	0
	0.1%	50	0.03	0
	0.2%	50	0.02	0

	0.2%	50	0.06	0
	0.2%	52	0.06	0
	0.7%	100	0.06	0
180	0.1%	102	0.06	0
	0.7%	100	0.03	0
	0.1%	104	0.02	0
	0.1%	54	0.02	0
	0.1%	54	0.02	0
	0.1%	52	0.04	0
	0.2%	56	0.03	0
	0.2%	52	0.04	0
	0.2%	56	0.07	0
	0.1%	56	0.07	0
190	0.2%	56	0.06	0
	0.2%	112	0.03	0
	0.7%	108	0.03	0
	0.2%	54	0.03	0
	0.1%	54	0.07	0
	0.1%	54	0.13	0
	0.1%	56	0.02	0
	0.2%	110	0.03	0
	0.1%	52	0.04	0
	0.1%	52	0.02	0
200	0.0%	330	0.26	0
	0.2%	52	0.03	0
	0.2%	52	0.10	0
	0.2%	52	0.14	0
	0.1%	330	0.26	0
	0.2%	170	0.06	0
	0.2%	168	0.08	0
	0.1%	112	0.12	0
	0.1%	112	0.12	0
	0.1%	232	0.11	0
210	0.1%	180	0.14	0

	0.1%	184	0.14	0
	0.2%	254	0.18	0
	0.2%	264	0.27	0
	0.2%	330	0.26	0
	0.1%	360	0.23	0
	0.1%	390	0.24	0
	0.1%	390	0.22	0
	0.1%	396	0.24	0
	0.2%	328	0.24	0
220	0.1%	394	0.27	0
	0.1%	360	0.23	0
	0.2%	396	0.23	0
	0.1%	396	0.24	0
	0.2%	414	0.32	0
	0.2%	424	0.23	0
	0.1%	402	0.31	0
	0.2%	406	0.21	0
	0.2%	394	0.28	0
	0.2%	374	0.24	0
230	0.2%	384	0.23	0
	0.1%	360	0.23	0
	0.2%	364	0.25	0
	0.2%	372	0.25	0
	0.2%	380	0.21	0
	0.1%	372	0.21	0
	0.2%	362	0.20	0
	0.2%	354	0.26	0
	0.2%	384	0.23	0
	0.2%	360	0.24	0
240	0.3%	360	0.20	0
	0.2%	348	0.24	0
	0.2%	290	0.29	0
	0.2%	352	0.34	0
	0.2%	362	0.23	0

	0.2%	198	0.33	0
	0.2%	374	0.23	0
	0.3%	384	0.23	0
	0.3%	394	0.23	0
	0.3%	334	0.34	0
250	0.3%	396	0.25	0
	0.2%	396	0.21	0
	0.3%	396	0.19	0
	0.2%	330	0.28	0
	0.3%	264	0.29	0
	0.1%	264	0.28	0
	0.2%	198	0.33	0
	0.1%	330	0.18	0
	0.3%	396	0.14	0
	0.3%	330	0.26	0
260	0.1%	264	0.18	0
	0.3%	198	0.06	0
	0.3%	330	0.10	0
	0.2%	264	0.33	0
	0.2%	198	0.25	0
	0.2%	396	0.24	0
	0.3%	396	0.28	0
	0.1%	396	0.38	0
	0.2%	396	0.26	0
	0.2%	396	0.21	0
270	0.1%	396	0.20	0
	0.3%	396	0.16	0
	0.2%	330	0.06	0
	0.2%	198	0.17	0
	0.1%	330	0.12	0
	0.2%	264	0.07	0
	0.2%	196	0.16	0
	0.1%	264	0.12	0
	0.3%	198	0.09	0

	0.3%	264	0.06	0
280	0.2%	198	0.12	0
	0.2%	132	0.12	0
	0.1%	198	0.06	0
	0.1%	198	0.08	0
	0.1%	132	0.03	0
	0.2%	132	0.06	0
	0.2%	66	0.14	0
	0.2%	132	0.14	0
	0.2%	198	0.10	0
	0.2%	264	0.11	0
290	0.1%	196	0.07	0
	0.3%	64	0.08	0
	0.3%	198	0.07	0
	0.2%	198	0.18	0
	0.2%	132	0.12	0
	0.1%	264	0.08	0
	0.2%	196	0.07	0
	0.2%	128	0.08	0
	0.2%	128	0.14	0
	0.2%	128	0.11	0
300	0.2%	192	0.10	0

Tabela 45: 1000 Objetos Pre-Runtime Box Physics2DSimulate

quadrosTotal	totalPercent	calls	totalTime	gcMemory
	25.7%	6	18.93	1400000
	57.6%	2	89.39	37000000
	31.4%	1	19.94	700000
	17.6%	1	46.36	700000
	81.5%	1	9.27	700000
	81.5%	1	89.39	37000000

	18.7%	1	3.41	700000
	24.6%	1	46.36	700000
10	19.6%	1	2.97	37000000
	75.9%	1	89.39	37000000
	75.9%	1	46.36	700000
	19.6%	1	3.54	37000000
	21.4%	1	89.39	37000000
	22.2%	1	3.19	700000
	22.2%	1	4.49	37000000
	19.6%	1	89.39	700000
	25.6%	1	4.31	700000
	19.6%	1	89.39	37000000
20	19.6%	1	3.68	700000
	25.9%	1	3.08	37000000
	20.9%	1	46.36	700000
	18.0%	1	46.36	700000
	21.0%	1	4.54	700000
	26.0%	1	3.19	700000
	19.6%	1	4.31	700000
	10.0%	1	4.31	700000
	19.6%	1	89.39	700000
	19.6%	1	89.39	700000
30	44.3%	1	3.12	700000
	21.0%	1	4.31	700000
	21.0%	1	3.35	700000
	21.0%	1	3.09	700000
	20.0%	1	3.15	700000
	19.6%	1	3.48	700000
	19.6%	1	4.31	900000
	19.6%	1	4.31	700000
	19.6%	1	4.44	700000
	17.2%	1	4.31	1400000
40	24.1%	1	3.15	900000
	22.6%	1	3.07	700000

	21.0%	1	3.15	900000
	20.4%	1	3.15	700000
	21.0%	1	3.21	900000
	60.9%	1	4.46	700000
	60.9%	1	4.31	900000
	25.8%	1	4.31	700000
	60.9%	1	4.31	900000
	60.9%	1	3.61	900000
50	21.0%	1	4.52	700000
	19.6%	1	3.15	700000
	21.0%	1	3.13	700000
	24.8%	1	4.92	900000
	21.0%	1	3.15	800000
	21.9%	1	4.92	800000
	18.6%	1	4.57	800000
	22.0%	1	4.92	800000
	21.0%	1	3.15	800000
	22.0%	2	4.92	1700000
60	22.0%	1	3.16	900000
	60.9%	1	3.15	1700000
	22.0%	1	3.15	900000
	60.9%	1	4.82	900000
	60.9%	1	3.12	900000
	16.0%	1	3.78	1700000
	38.6%	1	4.45	1000000
	60.9%	1	3.78	1700000
	29.2%	1	3.15	1000000
	19.2%	1	4.92	1700000
70	22.0%	1	3.15	1700000
	22.0%	1	3.78	1000000
	24.9%	1	3.78	1700000
	20.5%	1	4.92	1700000
	20.7%	1	3.26	1000000
	60.9%	1	4.92	1700000

	22.0%	1	4.92	1700000
	22.0%	1	4.51	1100000
	25.1%	1	3.29	1700000
	60.9%	1	3.78	1200000
80	34.7%	1	3.78	1700000
	27.9%	1	3.45	2500000
	22.0%	1	6.20	1200000
	25.7%	1	3.78	1300000
	22.0%	1	3.78	2500000
	28.9%	1	4.92	1200000
	25.5%	1	3.53	1700000
	23.5%	1	4.92	1700000
	28.6%	1	3.82	1700000
	25.7%	1	5.33	1200000
90	23.4%	1	3.53	1700000
	25.7%	1	5.31	1200000
	24.8%	1	4.45	1200000
	24.6%	1	3.60	2500000
	25.7%	1	5.33	1300000
	25.7%	2	3.78	3300000
	25.7%	1	3.78	2500000
	24.8%	1	5.33	1300000
	29.0%	1	5.24	3300000
	25.7%	1	3.68	1400000
100	24.8%	1	5.33	2500000
	28.3%	1	5.27	1500000
	22.7%	1	5.33	1500000
	54.5%	1	5.33	3300000
	25.7%	1	4.01	1500000
	33.1%	1	5.33	1700000
	24.8%	1	5.40	2500000
	23.3%	1	5.39	3300000
	24.8%	1	5.33	1600000
	16.5%	1	3.62	1700000

110	51.4%	1	5.01	1600000
	24.8%	1	5.33	3300000
	24.0%	1	5.54	2500000
	29.8%	1	4.17	1700000
	29.4%	1	5.33	1700000
	27.6%	1	4.25	24500000
	24.8%	1	5.33	1700000
	24.8%	1	4.17	24500000
	29.4%	1	3.96	2500000
	31.1%	1	5.30	1800000
120	25.7%	1	4.15	1800000
	29.3%	2	4.13	3300000
	29.4%	1	5.33	1800000
	29.4%	1	4.17	1800000
	25.7%	2	31.31	24500000
	23.6%	1	31.31	3300000
	29.4%	1	4.31	1800000
	24.2%	1	5.54	53500000
	31.9%	1	7.44	2000000
	24.8%	1	7.44	2000000
130	29.4%	1	6.24	53500000
	31.7%	1	4.88	24500000
	31.0%	1	4.97	31300000
	29.5%	1	31.31	24500000
	30.3%	1	4.58	3300000
	87.6%	1	7.44	2000000
	87.6%	2	31.31	2500000
	24.8%	1	4.48	31300000
	29.4%	1	4.75	4500000
	18.9%	1	31.31	53500000
140	53.4%	2	6.19	2200000
	41.1%	1	7.44	2400000
	34.4%	1	7.44	2400000
	29.4%	1	4.64	31300000

	87.6%	2	18.48	2400000
	31.9%	1	11.85	2500000
	34.4%	1	6.57	2500000
	27.6%	1	31.31	2500000
	87.6%	1	4.96	3300000
	34.8%	1	31.31	2600000
150	90.4%	1	5.06	24500000
	87.6%	1	7.44	53500000
	90.4%	1	18.91	53500000
	29.7%	1	16.07	2600000
	29.4%	2	7.44	24500000
	32.7%	1	31.31	2700000
	29.4%	1	8.26	2800000
	55.6%	1	6.64	31300000
	90.4%	1	7.94	31300000
	57.6%	2	7.44	2900000
160	46.8%	6	7.61	7200000
	40.9%	1	31.31	2900000
	87.6%	1	18.81	3000000
	90.7%	1	24.06	3300000
	35.7%	6	8.12	3300000
	87.6%	1	8.66	3400000
	29.4%	2	7.52	7200000
	90.4%	1	7.44	24500000
	90.7%	1	18.81	7000000
	90.4%	1	8.69	7200000
170	56.9%	1	19.91	7500000
	69.4%	2	18.81	45800000
	47.0%	6	16.32	45800000
	39.3%	1	9.77	7700000
	39.1%	1	8.31	4700000
	90.7%	1	21.11	3900000
	36.6%	2	10.10	3900000
	49.6%	1	25.05	45800000

	87.6%	1	19.51	4000000
	42.0%	1	19.83	4099999.9999999995
180	92.6%	6	10.02	4200000
	41.0%	6	11.45	4600000
	90.4%	6	21.11	8500000
	45.3%	1	10.52	4600000
	40.5%	6	21.11	8800000
	90.7%	1	47.35	4600000
	90.7%	6	10.44	4700000
	90.4%	2	47.35	11100000
	92.6%	1	47.35	11100000
	63.0%	1	31.31	11100000
190	74.2%	1	34.20	4700000
	87.6%	6	23.83	9700000
	45.3%	1	47.64	4800000
	92.6%	6	39.72	4800000
	48.6%	1	53.84	5000000
	45.3%	6	115.87	53500000
	27.0%	2	85.03	53500000
	58.6%	1	99.51	5200000
	57.0%	1	92.16	16100000.000000002
	73.0%	1	101.45	22300000
200	48.6%	1	119.74	17200000
	48.6%	2	115.18	31300000
	57.2%	1	118.29	31300000
	48.6%	6	101.23	24500000
	50.1%	1	115.21	19100000
	72.6%	6	97.90	19600000
	57.0%	2	120.98	28600000
	72.5%	1	115.87	51300000
	58.3%	1	115.87	36300000
	57.0%	6	101.74	42900000
210	75.5%	1	115.32	48000000
	75.5%	6	84.43	53500000

	75.5%	2	104.89	52900000
	86.4%	2	47.35	54500000
	74.2%	2	81.26	54400000
	61.4%	1	109.55	54900000
	60.1%	1	82.47	31300000
	60.2%	6	83.06	54100000
	90.4%	6	104.73	43200000
	73.8%	1	93.64	55300000
220	87.6%	1	47.35	53500000
	90.7%	6	78.49	51300000
	90.7%	2	47.35	51300000
	72.2%	6	83.79	49000000
	86.4%	6	78.97	46000000
	83.3%	6	39.81	45800000
	86.4%	1	102.85	45800000
	83.9%	1	74.14	45000000
	90.0%	1	59.90	45200000
	87.4%	1	63.05	39000000
230	90.4%	1	46.36	45700000
	69.0%	1	87.50	11100000
	73.8%	2	73.45	45800000
	89.5%	1	22.16	45900000
	90.9%	6	89.39	45800000
	74.4%	6	58.67	44400000
	78.3%	1	67.89	43800000
	89.6%	1	46.36	43200000
	92.2%	1	62.57	43200000
	90.7%	3	46.36	42800000
240	81.7%	4	47.38	11100000
	90.0%	3	91.63	11100000
	90.0%	2	46.36	39200000
	89.3%	2	89.39	32400000
	76.0%	4	79.70	39000000
	92.6%	6	94.03	39000000

	82.1%	3	80.40	38600000
	92.6%	6	78.98	38300000
	91.1%	4	55.87	10800000
	75.5%	6	46.36	31300000
250	76.8%	4	22.10	24900000
	82.7%	6	46.31	30700000
	91.4%	5	33.06	37000000
	91.0%	6	39.81	31400000
	90.2%	6	38.60	29900000
	69.9%	6	32.46	23000000
	65.3%	6	32.66	34500000
	80.0%	5	50.73	34600000
	91.1%	6	21.56	35300000
	90.7%	6	39.81	35600000
260	75.5%	6	11.88	10900000
	72.2%	6	41.52	34900000
	75.5%	6	39.81	34200000
	88.8%	6	22.16	28900000
	90.3%	6	47.15	23700000
	65.3%	6	34.10	5400000
	86.7%	6	33.96	23500000
	75.5%	6	22.16	17300000
	78.1%	6	47.35	23000000
	88.7%	6	39.81	21600000
270	90.7%	6	45.24	11400000
	87.4%	6	33.11	17100000
	89.2%	3	39.81	10800000
	75.2%	6	39.81	11200000
	71.8%	6	22.16	5500000
	79.3%	6	32.65	10800000
	75.9%	6	39.56	11200000
	75.9%	6	34.23	16600000.000000002
	81.5%	6	22.16	16300000
	75.9%	5	39.81	10800000

280	54.1%	6	22.10	16300000
	75.9%	3	23.73	22000000
	90.3%	6	21.68	10800000
	81.5%	6	22.16	11100000
	89.7%	3	22.43	4600000
	81.5%	6	22.16	16800000
	81.5%	5	22.10	10900000
	73.3%	6	22.10	10800000
	65.3%	6	28.20	16600000.000000002
	74.9%	6	22.10	10800000
290	75.9%	5	22.43	16200000
	77.1%	4	22.16	5400000
	89.1%	4	42.32	10900000
	65.3%	5	32.96	45800000
	81.5%	4	50.73	10700000
	91.2%	5	47.35	10800000
	75.9%	6	50.73	10800000
	65.3%	6		5400000
	87.3%	6		5400000
	65.3%	6		10900000
300	75.9%	6		10900000

C.2 *RUNTIME*

C.2.1 UM OBJETO POR SEGUNDO

Tabela 46: 1 Objeto Runtime Box OnCollisionEnter2D

quadrosTotal	totalPercent	calls	totalTime	gcMemory
50				

	0.5%	2	0.09	0
60				
	0.0%	1	0.00	0
	0.0%			
80				
		2	0.00	0
	0.0%			
90				
150				
		2	0.00	0
	0.0%	2		

160				
170				
			0.00	0
	0.0%	2		0
290			0.00	
	0.0%	2	0.00	0

Tabela 47: 1 Objeto Runtime Box OnCollisionExit2D

quadrosTotal	totalPercent	calls	totalTime	gcMemory
50				

	0.5%	2	0.09	0
60				
170				
		2	0.00	0
180				
260				
	0.0%			
270		2	0.00	0
290	0.0%			

		2	0.00	0
		2		

Tabela 48: 1 Objeto Runtime Box OnCollisionStay2D

quadrosTotal	totalPercent	calls	totalTime	gcMemory
50				
	0.5%	2	0.09	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%			
60				
		1	0.00	0
	0.0%	1	0.01	0
	0.0%	1	0.00	0
70	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0

	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
80	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
90	0.0%	3	0.00	0
	0.0%	3	0.00	0
	0.0%	3	0.00	0
	0.0%	3	0.00	0
	0.0%	3	0.00	0
	0.0%	3	0.00	0
	0.0%	3	0.00	0
	0.0%	3	0.00	0
	0.0%	3	0.00	0
	0.0%	3	0.00	0
100	0.0%	3	0.00	0
	0.0%	3	0.00	0
	0.0%	3	0.00	0
	0.0%	3	0.00	0
	0.0%	3	0.00	0
	0.0%	3	0.00	0
	0.0%	3	0.00	0
	0.0%	3	0.00	0
	0.0%	3	0.00	0

	0.0%	3	0.00	0
110	0.0%	3	0.00	0
	0.0%	3	0.00	0
	0.0%	3	0.00	0
	0.0%	3	0.00	0
	0.0%	3	0.00	0
	0.0%	3	0.00	0
	0.0%	3	0.00	0
	0.0%	3	0.00	0
	0.0%	3	0.00	0
	0.0%	3	0.00	0
120	0.0%	3	0.00	0
	0.0%	3	0.00	0
	0.0%	3	0.00	0
	0.0%	3	0.00	0
	0.0%	3	0.00	0
	0.0%	3	0.00	0
	0.0%			
130				
140				

150		2	0.00	0
	0.0%	3	0.00	0
	0.0%	3	0.00	0
	0.0%	3	0.00	0
	0.0%	3	0.00	0
	0.0%	3	0.00	0
	0.0%	3	0.00	0
	0.0%	3	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
160	0.3%	5	0.02	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
170	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0

	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
180	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.1%	10	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.1%	10	0.00	0
	0.0%	5	0.00	0
190	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
200	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.01	0
210	0.0%	5	0.00	0

	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
220	0.0%	10	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
230	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
240	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0

	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
250	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
260	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.01	0
	0.1%	10	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
270	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0
	0.0%	5	0.00	0

	0.0%	5	0.00	0
280	0.0%	5	0.00	0
	0.0%	5	0.00	0
290				

Tabela 49: 1 Objeto Runtime Box OnTriggerEnter2D

quadrosTotal	totalPercent	calls	totalTime	gcMemory
40				
	1.5%	1	0.28	32
50				

	0.0%	1	0.01	0
	0.0%			
60				
170				
		1	0.00	0
	0.0%			
180				
260				
		1	0.00	0
	0.0%	1		
			0.00	0
270	0.0%	1		0

290				

Tabela 50: 1 Objeto Runtime Box OnTriggerExit2D

quadrosTotal	totalPercent	calls	totalTime	gcMemory
60				
	0.6%	1	0.10	0
70				
210		1	0.00	0
290				

Tabela 51: 1 Objeto Runtime Box OnTriggerStay2D

quadrosTotal	totalPercent	calls	totalTime	gcMemory

40				
	0.0%	2	0.10	0
	0.0%	1	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	2	0.00	0
50	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.01	0
	0.0%	2	0.00	0
60	0.1%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.1%	4	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
70	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0

	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
80	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.01	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
90	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.1%	1	0.01	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
100	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0

	0.0%	1	0.01	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
110	0.0%	1	0.00	0
	0.0%	1	0.01	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.01	0
	0.0%	1	0.00	0
	0.1%	1	0.00	0
	0.0%	1	0.00	0
120	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1		0
	0.0%	1		0
	0.0%	1		0
130				
140				

150			0.00	
			0.00	
			0.00	
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
160	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.01	0
	0.0%	1	0.01	0
	0.0%	1	0.00	0
170	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.01	0
	0.0%	1	0.01	0

	0.0%	1	0.00	0
	0.1%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
180	0.0%	2	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.01	0
	0.0%	2	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.01	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.01	0
190	0.2%	4	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.01	0
200	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.01	0
	0.0%	2	0.01	0
	0.0%	2	0.00	0
	0.0%	2	0.01	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2		0

	0.0%	2	0.01	0
210	0.0%	2	0.01	0
			0.01	0
	0.0%	2	0.00	
	0.0%	2	0.00	0
	0.0%	2	0.01	0
	0.0%	2	0.01	0
	0.1%	2	0.00	0
	0.0%	2	0.00	0
	0.1%	2	0.00	0
	0.0%	2	0.01	0
220	0.0%	2	0.00	0
	0.0%	1	0.01	0
	0.0%	2	0.01	0
	0.0%	1	0.00	0
	0.1%	1	0.00	0
	0.1%	1	0.01	0
	0.0%	1	0.01	0
	0.0%	1	0.01	0
	0.0%	1	0.00	0
	0.0%	1	0.01	0
230	0.0%	1	0.01	0
	0.1%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.01	0
	0.1%	1	0.01	0
	0.0%	1	0.01	0
	0.1%	1	0.01	0
	0.0%	1	0.01	0
	0.1%	1	0.01	0
	0.0%	1	0.00	0
240	0.1%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0

	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
250	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
260	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.01	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	2	0.00	0
270	0.0%	1	0.00	
	0.0%	1		0
			0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.00	0

	0.0%	2	0.00	0
	0.0%	1	0.00	0
	0.0%	1	0.01	0
280	0.0%	1	0.01	0
	0.0%	1	0.00	0
	0.0%	1	0.01	0
	0.0%	1	0.01	0
	0.0%	1	0.00	0
	0.1%	2	0.00	0
	0.0%	2	0.05	0
	0.0%	2	0.00	0
	1.0%	4	0.00	0
	0.0%	2	0.00	0
290	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0
	0.0%	2	0.00	0

Tabela 52: 1 Objeto Runtime Box Physics2DSimulate

quadrosTotal	totalPercent	calls	totalTime	gcMemory
	0.8%	6	0.37	0
	0.8%	2	0.12	0
	0.6%	1	0.07	0
	0.4%	1	0.07	0
	0.4%	1	0.07	0
	0.3%	1	0.06	0
	0.4%	1	0.07	0
	0.4%	1	0.07	0
10	0.2%	1	0.07	0
	0.8%	1	0.05	0
	0.5%	1	0.08	0

	0.5%	1	0.08	0
	0.4%	1	0.07	0
	0.3%	1	0.06	0
	0.3%	1	0.06	0
	0.3%	1	0.06	0
	0.4%	1	0.06	0
	0.3%	1	0.06	0
20	0.2%	1	0.07	0
	3.3%	1	0.21	0
	0.4%	1	0.07	0
	0.4%	1	0.07	0
	0.4%	1	0.07	0
	0.4%	1	0.08	0
	0.4%	1	0.07	0
	0.4%	1	0.07	0
	0.4%	1	0.07	0
	0.2%	1	0.07	0
30	0.2%	1	0.05	0
	1.5%	2	0.13	0
	0.6%	1	0.08	0
	0.4%	1	0.07	0
	0.4%	1	0.07	0
	0.4%	1	0.07	0
	0.3%	1	0.06	0
	0.4%	1	0.07	0
	0.4%	1	0.07	0
	0.4%	1	0.08	0
40	0.3%	1	0.07	0
	0.7%	1	0.07	0
	2.4%	1	0.44	72
	1.2%	1	0.20	0
	0.5%	1	0.09	0
	0.5%	1	0.09	0
	0.5%	1	0.09	0

	0.5%	1	0.09	0
	0.6%	1	0.11	0
	0.5%	1	0.09	0
50	0.3%	1	0.09	0
	0.9%	1	0.09	0
	0.5%	1	0.08	0
	0.5%	1	0.08	0
	1.6%	1	0.27	7100
	1.5%	1	0.26	7100
	1.0%	1	0.16	7100
	0.9%	1	0.16	7100
	1.5%	1	0.24	7100
	0.3%	1	0.09	0
60	0.5%	1	0.18	0
	2.2%	2	0.16	0
	1.3%	1	0.21	0
	0.6%	1	0.09	0
	0.7%	1	0.12	0
	0.5%	1	0.09	0
	0.9%	1	0.15	3600
	1.0%	1	0.17	3600
	1.1%	1	0.19	3600
	0.6%	1	0.14	3600
70	1.5%	1	0.14	3600
	0.8%	1	0.15	3600
	0.9%	1	0.15	3600
	0.9%	1	0.15	3600
	0.9%	1	0.15	3600
	0.8%	1	0.15	3600
	0.8%	1	0.15	3600
	1.0%	1	0.16	3600
	0.9%	1	0.15	3600
	0.6%	1	0.15	3600
80	1.3%	1	0.14	3600

	0.8%	1	0.15	3600
	0.9%	1	0.13	3600
	0.9%	1	0.15	3600
	0.9%	1	0.14	3600
	0.9%	1	0.15	3600
	0.8%	1	0.15	3600
	1.0%	1	0.16	10700
	0.9%	1	0.15	10700
	0.4%	1	0.16	10700
90	0.5%	1	0.11	10700
	4.0%	1	0.18	10700
	0.9%	1	0.16	10700
	0.9%	1	0.16	10700
	0.9%	1	0.16	10700
	1.0%	1	0.17	10700
	0.9%	1	0.15	10700
	0.9%	1	0.15	10700
	0.6%	1	0.15	10700
	1.7%	1	0.15	10700
100	1.0%	1	0.16	10700
	1.2%	1	0.20	10700
	1.0%	1	0.16	10700
	1.0%	1	0.17	10700
	0.9%	1	0.16	10700
	0.9%	1	0.15	10700
	1.0%	1	0.16	10700
	0.9%	1	0.16	10700
	0.7%	1	0.16	10700
	1.7%	1	0.16	10700
110	0.9%	1	0.16	10700
	0.9%	1	0.16	10700
	0.9%	1	0.16	10700
	1.0%	1	0.17	10700
	29.9%	1	8.76	10700

	3.3%	1	0.15	10700
	0.9%	1	0.16	10700
	0.6%	1	0.16	10700
	1.7%	1	0.16	10700
	0.7%	1	0.16	10700
120	0.6%	1	0.13	10700
	3.3%	1	0.17	10700
	0.5%	1	0.08	0
	0.4%	1	0.07	0
	0.5%	1	0.08	0
	0.4%	1	0.07	0
	0.3%	1	0.07	0
	0.8%	1	0.07	0
	0.4%	1	0.07	0
	0.4%	1	0.07	0
130	0.5%	1	0.08	0
	0.4%	1	0.07	0
	0.4%	1	0.07	0
	0.3%	1	0.07	0
	0.5%	1	0.08	0
	0.3%	1	0.07	0
	0.9%	1	0.07	0
	0.4%	1	0.07	0
	0.6%	1	0.10	0
	0.4%	1	0.07	0
140	0.3%	1	0.06	0
	0.5%	1	0.08	0
	0.5%	1	0.07	0
	0.4%	1	0.07	0
	0.3%	1	0.06	0
	0.3%	1	0.08	0
	1.7%	1	0.14	7100
	1.0%	1	0.16	10700
	1.0%	1	0.16	10700

	0.5%	1	0.16	10700
150	1.6%	1	0.32	10700
	3.1%	1	0.16	10700
	1.1%	1	0.18	17800
	1.0%	1	0.17	17800
	0.7%	1	0.18	17800
	2.8%	1	0.20	17800
	1.1%	1	0.18	17800
	1.0%	1	0.17	17800
	1.0%	1	0.17	17800
	1.0%	1	0.15	17800
160	1.1%	1	0.18	17800
	1.0%	1	0.17	17800
	1.0%	1	0.17	17800
	1.0%	1	0.17	17800
	0.7%	1	0.17	17800
	2.1%	1	0.18	17800
	1.2%	1	0.21	17800
	1.1%	1	0.17	17800
	1.0%	1	0.18	17800
	1.0%	1	0.17	17800
170	1.0%	1	0.17	17800
	1.0%	1	0.17	17800
	1.1%	1	0.19	24900
	1.1%	1	0.19	24900
	0.7%	1	0.19	17800
	6.1%	1	0.50	17800
	1.4%	1	0.18	17800
	1.1%	1	0.18	17800
	1.1%	1	0.18	17800
	0.5%	1	0.18	17800
180	1.6%	1	0.32	17800
	6.5%	2	0.40	35500
	1.0%	1	0.17	17800

	0.8%	1	0.18	17800
	2.1%	1	0.18	17800
	1.1%	1	0.19	17800
	1.1%	1	0.18	17800
	1.1%	1	0.19	17800
	1.1%	1	0.19	17800
	1.1%	1	0.18	17800
190	1.0%	1	0.18	17800
	1.1%	1	0.18	17800
	1.0%	1	0.19	17800
	0.8%	1	0.18	17800
	2.1%	1	0.17	17800
	1.0%	1	0.18	17800
	1.1%	1	0.18	17800
	1.1%	1	0.18	17800
	1.0%	1	0.18	17800
	1.1%	1	0.18	17800
200	1.0%	1	0.22	17800
	1.1%	1	0.19	17800
	0.7%	1	0.18	17800
	2.7%	1	0.17	17800
	1.0%	1	0.18	17800
	1.1%	1	0.18	17800
	1.1%	1	0.18	17800
	1.1%	1	0.20	17800
	0.6%	1	0.18	17800
210	1.2%	1	0.27	17800
	4.4%	2	0.35	35500
	0.8%	1	0.18	17800
	1.7%	1	0.17	17800
	1.1%	1	0.18	17800
	1.1%	1	0.18	17800
	1.0%	1	0.18	17800

	1.1%	1	0.18	17800
	1.1%	1	0.18	17800
	1.1%	1	0.18	17800
220	1.1%	1	0.18	17800
	1.0%	1	0.18	17800
	0.7%	1	0.18	17800
	1.7%	1	0.17	17800
	1.1%	1	0.18	17800
	1.0%	1	0.18	17800
	1.2%	1	0.18	17800
	1.0%	1	0.18	17800
	1.1%	1	0.18	17800
	1.0%	1	0.18	17800
230	1.0%	1	0.17	17800
	1.0%	1	0.18	17800
	0.6%	1	0.18	17800
	4.2%	1	0.37	17800
	1.3%	1	0.18	17800
	1.0%	1	0.18	17800
	1.2%	1	0.19	17800
	1.1%	1	0.19	17800
	1.1%	1	0.18	17800
	0.6%	1	0.21	17800
240	0.9%	1	0.23	17800
	1.6%	1	0.19	17800
	1.9%	1	0.18	17800
	1.0%	1	0.18	17800
	1.0%	1	0.18	17800
	1.1%	1	0.18	17800
	1.1%	1	0.18	17800
	1.1%	1	0.19	17800
	1.1%	1	0.18	17800
	1.1%	1	0.18	17800
250	1.1%	1	0.19	17800

	0.8%	1	0.19	17800
	30.8%	1	9.10	17800
	6.0%	2	0.31	35500
	1.1%	1	0.18	17800
	1.1%	1	0.19	17800
	1.2%	1	0.19	17800
	1.1%	1	0.18	17800
	1.2%	1	0.22	17800
260	0.7%	1	0.17	17800
	2.3%	1	0.18	17800
	1.0%	1	0.19	17800
	1.2%	1	0.19	17800
	1.1%	1	0.19	17800
	1.1%	1	0.19	17800
	1.2%	1	0.21	17800
	1.1%	1	0.19	17800
	1.3%	1	0.21	17800
	0.6%	1	0.19	17800
270	0.6%	1	0.20	7100
	8.5%	2	0.44	0
	0.8%	1	0.13	0
	0.7%	1	0.13	0
	0.8%	1	0.13	0
	0.9%	1	0.15	0
	0.7%	1	0.13	0
	0.7%	1	0.13	0
	0.7%	1	0.13	0
	0.5%	1	0.13	0
280	1.5%	1	0.13	0
	0.8%	1	0.13	0
	0.8%	1	0.13	0
	0.8%	1	0.14	0
	0.8%	1	0.13	0

	0.7%	1	0.13	0
	0.7%	1	0.13	0
	0.4%	1	0.13	0
	0.7%	1	0.12	0
	1.6%	1	0.12	0
290	1.1%	1	0.18	7100
	1.1%	1	0.18	7100
	0.8%	1	0.13	0
	0.6%	1	0.13	0
	0.0%	1	0.13	0

C.2.2   DEZ OBJETOS POR SEGUNDO

C.2.3   CINQUENTA OBJETOS POR SEGUNDO

C.2.4   CEM OBJETOS POR SEGUNDO

C.2.5   QUINHENTOS OBJETOS POR SEGUNDO

C.2.6   MIL OBJETOS POR SEGUNDO

Tabela 53: 1 Objeto Runtime Box Spawn

quadrosTotal	totalPercent	calls	totalTime	gcMemory
50				
	0.7%	1	0.13	80
60				
110				
	0.7%	1		80
	0.7%			
	0.7%			
120				
230			0.12	
		1		80
				80
	0.7%			
240				
290				
quadrosTotal	totalPercent	calls	totalTime	gcMemory

APÊNDICE D – TABELAS DE RESULTADOS - *CIRCLE COLLIDER*

D.1   *PRE-RUNTIME*

D.1.1   UM OBJETO

D.1.2   DEZ OBJETOS

D.1.3   CINQUENTA OBJETOS

D.1.4   CEM OBJETOS

D.1.5   QUINHENTOS OBJETOS

D.1.6   MIL OBJETOS

D.2   *RUNTIME*

D.2.1   UM OBJETO POR SEGUNDO

D.2.2   DEZ OBJETOS POR SEGUNDO

D.2.3   CINQUENTA OBJETOS POR SEGUNDO

D.2.4   CEM OBJETOS POR SEGUNDO

D.2.5   QUINHENTOS OBJETOS POR SEGUNDO

D.2.6   MIL OBJETOS POR SEGUNDO

APÊNDICE E – TABELAS DE RESULTADOS - *EDGE COLLIDER*

E.1   *PRE-RUNTIME*

E.1.1   UM OBJETO

E.1.2   DEZ OBJETOS

E.1.3   CINQUENTA OBJETOS

E.1.4   CEM OBJETOS

E.1.5   QUINHENTOS OBJETOS

E.1.6   MIL OBJETOS

E.2   *RUNTIME*

E.2.1   UM OBJETO POR SEGUNDO

E.2.2   DEZ OBJETOS POR SEGUNDO

E.2.3   CINQUENTA OBJETOS POR SEGUNDO

E.2.4   CEM OBJETOS POR SEGUNDO

E.2.5   QUINHENTOS OBJETOS POR SEGUNDO

E.2.6   MIL OBJETOS POR SEGUNDO

APÊNDICE F – TABELAS DE RESULTADOS - *POLYGON COLLIDER*

F.1   *PRE-RUNTIME*

F.1.1   UM OBJETO

F.1.2   DEZ OBJETOS

F.1.3   CINQUENTA OBJETOS

F.1.4   CEM OBJETOS

F.1.5   QUINHENTOS OBJETOS

F.1.6   MIL OBJETOS

F.2   *RUNTIME*

F.2.1   UM OBJETO POR SEGUNDO

F.2.2   DEZ OBJETOS POR SEGUNDO

F.2.3   CINQUENTA OBJETOS POR SEGUNDO

F.2.4   CEM OBJETOS POR SEGUNDO

F.2.5   QUINHENTOS OBJETOS POR SEGUNDO

F.2.6   MIL OBJETOS POR SEGUNDO