**Business Career Game Character Design document**

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| **Game Character Design Document V.1.0**  Accounting Serious Game  Created at 17th July 2014  Last Modified at 9th August 2014 |

The Character Design Document

Character design dokumen secara spesifik digunakan untuk merekam desain dari karakter yang muncul dalam game yang akan dibuat, seringkali berbentuk avatar. Tujuan utama dari dokumen ini adalah untuk menggambarkan penampakan dari karakter, dan move-set dari karakter itu sendiri, yaitu kumpulan animasi yang mendokumentasikan gerakan-gerakan karakter, baik yang sengaja karakter tersebut lakukan (berjalan, berlari, dan melompat), ataupun gerakan tidak sengaja karakter tersebut lakukan (terkena pukulan, jatuh, dan animasi lainnya). Dokumen ini berisikan concept art dari karakter dengan berbagai macam pose dan juga ekspresi muka.

Design disertakan dalam bentuk spritesheet yang dilampirkan kedalam art sheet dan berisi informasi setiap bagian sprite. Setiap spritesheet memiliki informasi lokasi dan dimensi setiap frame sprite untuk digunakan dalam program mengekstrak data gambar tertentu.

1. Character Design Glossary

Dokumen character desain menyertakan spritesheet dan informasi yang digunakan untuk diimplementasikan pada game. Dalam concept art sheet memiliki beberapa istilah dan atribut sebagai berikut:

1. **Sprite Property:** setiap sprite atau DisplayObject memiliki property dasar seperti lokasi x,y kemudian width, height untuk dimensi, scaleX,scaleY untuk skala perbesaran atau pengecilan object, pivotX dan pivotY untuk titik pusat koordinat (0,0) pada sprite.
2. **Maxrect Algorithm:** merupakan algoritma penataan sprite dalam spritesheet, algoritma ini built-in pada aplikasi TexturePacker yang digunakan. Maxrect menggunakan pendekatan pemotongan dan pengurutan bagian dari setiap sprite dengan membandingkan ukuran rectangle dari sprite yang terbesar. Dalam low level image processing starling menggunakan kelipatan n2 untuk membentuk sprite sheet, misalnya spritesheet menghasilkan width 255 dan height 120, maka texture packer akan melakukan resize pada kelipatan pangkat 2 terdekat yaitu width 256 dan height 128 dengan gap masing – masing sprite adalah minimal 2 pixel, karena gap ini digunakan oleh GPU untuk melakukan pengambilan sample data sprite.
3. **Antialias:** adalah mekanisme untuk smooting atau penghalusan data grafis menggunakan GPU atau software, dalam framework yang digunakan yaitu Starling memiliki tingkat penghalusan dari 1-16. Semakin tinggi tingkat antialias maka akan semakin halus, tetapi membutuhkan resource komputer lebih banyak begitu juga sebaliknya. Pengaruh antialias terlihat saat dilakukan scaling up atau scaling down dan untuk sprite yang memiliki alpha channel atau transparent.
4. **Sprite dan Spritesheet:** sprite merupakan entitas yang menampung informasi visual yang biasa digunakan dalam game, secara sederhanya sprite biasanya sebuah gambar atau asset grafis, sedangkan spritesheet adalah dokumen atau kumpulan gambar yang independen atau sequence yang disatukan untuk menjadi satu file tunggal.
5. **Fps:** akronim dari Frame per second, merupakan kecepatan perpindahan antar frame dari sprite dalam satuan detik, misalnya 30 fps artinya dalam satu detik frame akan berganti sebanyak 30 kali, semakin cepat fps, semakin halus pergerakan animasi tetapi semakin banyak resource computer yang digunakan karena harus merender lebih banyak sprite dan membutuhkan lebih banyak gambar sprite itu sendiri.
6. Art Sheet List
   1. Base Character Sheet

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Business Career 2D Concept Art Sheet 1 | | | | | | | | | |
| Name/ID : basechar | | | Type : NPC/CHAR | | | | Environment : Game world | | |
| ScaleX : 0.5 - 1 | | | ScaleY : 0.5 - 1 | | | | Alpha : 1 | | |
| PivotX : BOTTOM | CENTER | | | PivotY : BOTTOM | CENTER | | | | Antialias : 2 | | |
| G:\My Thesis\Application\Game\Assets\Character\Base Character\idle.png | | | | | G:\My Thesis\Application\Game\Assets\Character\Base Character\idle.png | | | | |
| Front-left isometric | | | | | Front-right isometric | | | | |
| Character Movement | | | | | | | | | |
| Fps : 24 | | | | | Sprites Name : BaseAtlas | | | | |
| G:\My Thesis\Application\Game\Sprites\Character\BaseAtlas.png | | | | | | | | | |
| name | x | y | width | height | | fX | fY | fWidth | fHeight |
| idle | 792 | 1584 | 76 | 263 | | -34 | -2 | 142 | 265 |
| greeting0001 | 794 | 1584 | 76 | 263 | | -34 | -2 | 142 | 265 |
| greeting0002 | 126 | 1311 | 76 | 261 | | -37 | -3 | 142 | 265 |
| greeting0003 | 242 | 522 | 82 | 261 | | -35 | -2 | 142 | 265 |
| greeting0004 | 418 | 787 | 90 | 261 | | -30 | -2 | 142 | 265 |
| greeting0005 | 2 | 522 | 108 | 261 | | -17 | -2 | 142 | 265 |
| greeting0006 | 288 | 787 | 128 | 261 | | 0 | -2 | 142 | 265 |
| greeting0007 | 326 | 524 | 124 | 261 | | -6 | -2 | 142 | 265 |
| greeting0008 | 730 | 526 | 94 | 261 | | -39 | -2 | 142 | 265 |
| greeting0009 | 2 | 785 | 90 | 261 | | -45 | -2 | 142 | 265 |
| greeting0010 | 94 | 785 | 92 | 261 | | -45 | -2 | 142 | 265 |
| greeting0011 | 2 | 261 | 94 | 259 | | -44 | -4 | 142 | 265 |
| greeting0012 | 734 | 2 | 96 | 259 | | -44 | -4 | 142 | 265 |
| greeting0013 | 638 | 2 | 94 | 259 | | -44 | -4 | 142 | 265 |
| greeting0014 | 638 | 526 | 90 | 261 | | -45 | -2 | 142 | 265 |
| greeting0015 | 730 | 263 | 94 | 261 | | -39 | -2 | 142 | 265 |
| greeting0016 | 730 | 263 | 94 | 261 | | -39 | -2 | 142 | 265 |
| greeting0017 | 452 | 524 | 90 | 261 | | -45 | -2 | 142 | 265 |
| greeting0018 | 544 | 526 | 92 | 261 | | -45 | -2 | 142 | 265 |
| greeting0019 | 542 | 2 | 94 | 259 | | -44 | -4 | 142 | 265 |
| greeting0020 | 734 | 2 | 96 | 259 | | -44 | -4 | 142 | 265 |
| greeting0021 | 734 | 2 | 96 | 259 | | -44 | -4 | 142 | 265 |
| greeting0022 | 444 | 2 | 96 | 259 | | -44 | -4 | 142 | 265 |
| greeting0023 | 348 | 2 | 94 | 259 | | -44 | -4 | 142 | 265 |
| greeting0024 | 188 | 785 | 98 | 261 | | -39 | -2 | 142 | 265 |
| greeting0025 | 112 | 522 | 128 | 261 | | -7 | -2 | 142 | 265 |
| greeting0026 | 510 | 789 | 134 | 261 | | 0 | -2 | 142 | 265 |
| greeting0027 | 2 | 522 | 108 | 261 | | -17 | -2 | 142 | 265 |
| greeting0028 | 638 | 263 | 90 | 261 | | -30 | -2 | 142 | 265 |
| greeting0029 | 554 | 263 | 82 | 263 | | -35 | -3 | 142 | 265 |
| greeting0030 | 650 | 1052 | 76 | 257 | | -37 | -2 | 142 | 265 |
| walk0001 | 258 | 2 | 88 | 257 | | -25 | -2 | 142 | 265 |
| walk0002 | 92 | 2 | 84 | 259 | | -27 | -2 | 142 | 265 |
| walk0003 | 98 | 261 | 78 | 259 | | -30 | -1 | 142 | 265 |
| walk0004 | 178 | 261 | 76 | 261 | | -31 | -1 | 142 | 265 |
| walk0005 | 420 | 1050 | 72 | 261 | | -33 | -1 | 142 | 265 |
| walk0006 | 822 | 791 | 72 | 261 | | -33 | -1 | 142 | 265 |
| walk0007 | 748 | 789 | 72 | 263 | | -33 | -1 | 142 | 265 |
| walk0008 | 372 | 1578 | 72 | 263 | | -34 | 0 | 142 | 265 |
| walk0009 | 572 | 1052 | 76 | 263 | | -33 | 0 | 142 | 265 |
| walk0010 | 712 | 1578 | 80 | 263 | | -33 | -1 | 142 | 265 |
| walk0011 | 626 | 1582 | 84 | 263 | | -33 | -1 | 142 | 265 |
| walk0012 | 446 | 1582 | 90 | 263 | | -30 | -1 | 142 | 265 |
| walk0013 | 646 | 789 | 100 | 261 | | -29 | -2 | 142 | 265 |
| walk0014 | 110 | 1048 | 106 | 261 | | -26 | -2 | 142 | 265 |
| walk0015 | 332 | 263 | 108 | 269 | | -25 | -3 | 142 | 265 |
| walk0016 | 442 | 263 | 110 | 259 | | -25 | -3 | 142 | 265 |
| walk0017 | 2 | 1048 | 106 | 261 | | -27 | -2 | 142 | 265 |
| walk0018 | 218 | 1050 | 102 | 261 | | -30 | -2 | 142 | 265 |
| walk0019 | 322 | 1050 | 96 | 261 | | -33 | -2 | 142 | 265 |
| walk0020 | 538 | 1582 | 86 | 263 | | -34 | -1 | 142 | 265 |
| walk0021 | 286 | 1578 | 84 | 263 | | -33 | -1 | 142 | 265 |
| walk0022 | 204 | 1578 | 80 | 263 | | -33 | -1 | 142 | 265 |
| walk0023 | 294 | 1052 | 76 | 263 | | -33 | 0 | 142 | 265 |
| walk0024 | 728 | 1052 | 72 | 263 | | -34 | 0 | 142 | 265 |
| walk0025 | 826 | 528 | 72 | 261 | | -33 | 0 | 142 | 265 |
| walk0026 | 826 | 256 | 72 | 261 | | -33 | 0 | 142 | 265 |
| walk0027 | 832 | 2 | 72 | 261 | | -33 | 0 | 142 | 265 |
| walk0028 | 256 | 261 | 74 | 259 | | -31 | 0 | 142 | 265 |
| walk0029 | 178 | 2 | 78 | 257 | | -27 | -2 | 142 | 265 |
| walk0030 | 2 | 2 | 88 | 257 | | -26 | -2 | 142 | 265 |
| handsup0001 | 794 | 1584 | 76 | 263 | | -34 | -2 | 142 | 265 |
| handsup0002 | 2 | 1311 | 122 | 263 | | -20 | -2 | 142 | 265 |
| handsup0003 | 204 | 1313 | 130 | 263 | | -7 | -2 | 142 | 265 |
| handsup0004 | 770 | 1319 | 110 | 263 | | -27 | -2 | 142 | 265 |
| handsup0005 | 662 | 1317 | 106 | 263 | | -24 | -2 | 142 | 265 |
| handsup0006 | 556 | 1317 | 104 | 263 | | -25 | -2 | 142 | 265 |
| handsup0007 | 448 | 1317 | 106 | 263 | | -24 | -2 | 142 | 265 |
| handsup0008 | 336 | 1313 | 110 | 263 | | -27 | -2 | 142 | 265 |
| handsup0009 | 336 | 1313 | 110 | 263 | | -27 | -2 | 142 | 265 |
| handsup0010 | 2 | 1576 | 102 | 263 | | -23 | -2 | 142 | 265 |
| handsup0011 | 802 | 1054 | 102 | 263 | | -16 | -2 | 142 | 265 |
| handsup0012 | 802 | 1054 | 102 | 263 | | -16 | -2 | 142 | 265 |
| handsup0013 | 106 | 1576 | 96 | 263 | | -21 | -2 | 142 | 265 |
| Character Expression | | | | | | | | | |
| Fps : 24 | | | | | Sprites Name : BaseExpression | | | | |
| G:\My Thesis\Application\Game\Sprites\Character\BaseExpression.png | | | | | | | | | |
| name | x | y | width | height | | fX | fY | fWidth | fHeight |
| face\_idle |  |  |  |  | |  |  |  |  |
| wink0001 |  |  |  |  | |  |  |  |  |
| upset0001 |  |  |  |  | |  |  |  |  |
| Sleepy0001 |  |  |  |  | |  |  |  |  |
| smile0001 |  |  |  |  | |  |  |  |  |
| sad0001 |  |  |  |  | |  |  |  |  |
| angry0001 |  |  |  |  | |  |  |  |  |
| Notes :  Karakter dasar untuk pembangkitan | | | | | Key Color :  G:\My Thesis\Application\Game\Assets\Character\Base Character\Pallete.png | | | | |

* 1. Character Suits Sheet

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Business Career 2D Concept Art Sheet 2 | | | | | | | | | |
| Name/ID : charsuit1 | | | Type : NPC/CHAR | | | | Environment : Game world | | |
| ScaleX : 0.5 - 1 | | | ScaleY : 0.5 - 1 | | | | Alpha : 1 | | |
| PivotX : BOTTOM | CENTER | | | PivotY : BOTTOM | CENTER | | | | Antialias : 2 | | |
| E:\My Thesis\Application\Game\Sprites\Character\Suites\Character1.png  E:\My Thesis\Application\Game\Sprites\Character\Suites\Character2.png  E:\My Thesis\Application\Game\Sprites\Character\Suites\Character3.png  E:\My Thesis\Application\Game\Sprites\Character\Suites\Character4.png  E:\My Thesis\Application\Game\Sprites\Character\Suites\Character5.png  E:\My Thesis\Application\Game\Sprites\Character\Suites\Character6.png  E:\My Thesis\Application\Game\Sprites\Character\Suites\Character7.png  E:\My Thesis\Application\Game\Sprites\Character\Suites\Character8.png  E:\My Thesis\Application\Game\Sprites\Character\Suites\Character9.png  E:\My Thesis\Application\Game\Sprites\Character\Suites\Character10.png | | | | | E:\My Thesis\Application\Game\Sprites\Character\Suites\Character1.png  E:\My Thesis\Application\Game\Sprites\Character\Suites\Character2.png  E:\My Thesis\Application\Game\Sprites\Character\Suites\Character3.png  E:\My Thesis\Application\Game\Sprites\Character\Suites\Character4.png  E:\My Thesis\Application\Game\Sprites\Character\Suites\Character5.png  E:\My Thesis\Application\Game\Sprites\Character\Suites\Character6.png  E:\My Thesis\Application\Game\Sprites\Character\Suites\Character7.png  E:\My Thesis\Application\Game\Sprites\Character\Suites\Character8.png  E:\My Thesis\Application\Game\Sprites\Character\Suites\Character9.png  E:\My Thesis\Application\Game\Sprites\Character\Suites\Character10.png | | | | |
| Front-left isometric | | | | | Front-right isometric | | | | |
| Character Suits | | | | | | | | | |
| Fps : 24 | | | | | Sprites Name : BaseAtlas | | | | |
| E:\My Thesis\Application\Game\Sprites\Character\AvatarAtlas.png | | | | | | | | | |
| name | x | y | width | height | | fX | fY | fWidth | fHeight |
| idle | 792 | 1584 | 76 | 263 | | -34 | -2 | 142 | 265 |
| greeting0001 | 794 | 1584 | 76 | 263 | | -34 | -2 | 142 | 265 |
| greeting0002 | 126 | 1311 | 76 | 261 | | -37 | -3 | 142 | 265 |
| greeting0003 | 242 | 522 | 82 | 261 | | -35 | -2 | 142 | 265 |
| greeting0004 | 418 | 787 | 90 | 261 | | -30 | -2 | 142 | 265 |
| greeting0005 | 2 | 522 | 108 | 261 | | -17 | -2 | 142 | 265 |
| greeting0006 | 288 | 787 | 128 | 261 | | 0 | -2 | 142 | 265 |
| greeting0007 | 326 | 524 | 124 | 261 | | -6 | -2 | 142 | 265 |
| greeting0008 | 730 | 526 | 94 | 261 | | -39 | -2 | 142 | 265 |
| greeting0009 | 2 | 785 | 90 | 261 | | -45 | -2 | 142 | 265 |
| greeting0010 | 94 | 785 | 92 | 261 | | -45 | -2 | 142 | 265 |
| greeting0011 | 2 | 261 | 94 | 259 | | -44 | -4 | 142 | 265 |
| greeting0012 | 734 | 2 | 96 | 259 | | -44 | -4 | 142 | 265 |
| greeting0013 | 638 | 2 | 94 | 259 | | -44 | -4 | 142 | 265 |
| greeting0014 | 638 | 526 | 90 | 261 | | -45 | -2 | 142 | 265 |
| greeting0015 | 730 | 263 | 94 | 261 | | -39 | -2 | 142 | 265 |
| greeting0016 | 730 | 263 | 94 | 261 | | -39 | -2 | 142 | 265 |
| greeting0017 | 452 | 524 | 90 | 261 | | -45 | -2 | 142 | 265 |
| greeting0018 | 544 | 526 | 92 | 261 | | -45 | -2 | 142 | 265 |
| greeting0019 | 542 | 2 | 94 | 259 | | -44 | -4 | 142 | 265 |
| greeting0020 | 734 | 2 | 96 | 259 | | -44 | -4 | 142 | 265 |
| greeting0021 | 734 | 2 | 96 | 259 | | -44 | -4 | 142 | 265 |
| greeting0022 | 444 | 2 | 96 | 259 | | -44 | -4 | 142 | 265 |
| greeting0023 | 348 | 2 | 94 | 259 | | -44 | -4 | 142 | 265 |
| greeting0024 | 188 | 785 | 98 | 261 | | -39 | -2 | 142 | 265 |
| greeting0025 | 112 | 522 | 128 | 261 | | -7 | -2 | 142 | 265 |
| greeting0026 | 510 | 789 | 134 | 261 | | 0 | -2 | 142 | 265 |
| greeting0027 | 2 | 522 | 108 | 261 | | -17 | -2 | 142 | 265 |
| greeting0028 | 638 | 263 | 90 | 261 | | -30 | -2 | 142 | 265 |
| greeting0029 | 554 | 263 | 82 | 263 | | -35 | -3 | 142 | 265 |
| greeting0030 | 650 | 1052 | 76 | 257 | | -37 | -2 | 142 | 265 |
| walk0001 | 258 | 2 | 88 | 257 | | -25 | -2 | 142 | 265 |
| walk0002 | 92 | 2 | 84 | 259 | | -27 | -2 | 142 | 265 |
| walk0003 | 98 | 261 | 78 | 259 | | -30 | -1 | 142 | 265 |
| walk0004 | 178 | 261 | 76 | 261 | | -31 | -1 | 142 | 265 |
| walk0005 | 420 | 1050 | 72 | 261 | | -33 | -1 | 142 | 265 |
| walk0006 | 822 | 791 | 72 | 261 | | -33 | -1 | 142 | 265 |
| walk0007 | 748 | 789 | 72 | 263 | | -33 | -1 | 142 | 265 |
| walk0008 | 372 | 1578 | 72 | 263 | | -34 | 0 | 142 | 265 |
| walk0009 | 572 | 1052 | 76 | 263 | | -33 | 0 | 142 | 265 |
| walk0010 | 712 | 1578 | 80 | 263 | | -33 | -1 | 142 | 265 |
| walk0011 | 626 | 1582 | 84 | 263 | | -33 | -1 | 142 | 265 |
| walk0012 | 446 | 1582 | 90 | 263 | | -30 | -1 | 142 | 265 |
| walk0013 | 646 | 789 | 100 | 261 | | -29 | -2 | 142 | 265 |
| walk0014 | 110 | 1048 | 106 | 261 | | -26 | -2 | 142 | 265 |
| walk0015 | 332 | 263 | 108 | 269 | | -25 | -3 | 142 | 265 |
| walk0016 | 442 | 263 | 110 | 259 | | -25 | -3 | 142 | 265 |
| walk0017 | 2 | 1048 | 106 | 261 | | -27 | -2 | 142 | 265 |
| walk0018 | 218 | 1050 | 102 | 261 | | -30 | -2 | 142 | 265 |
| walk0019 | 322 | 1050 | 96 | 261 | | -33 | -2 | 142 | 265 |
| walk0020 | 538 | 1582 | 86 | 263 | | -34 | -1 | 142 | 265 |
| walk0021 | 286 | 1578 | 84 | 263 | | -33 | -1 | 142 | 265 |
| walk0022 | 204 | 1578 | 80 | 263 | | -33 | -1 | 142 | 265 |
| walk0023 | 294 | 1052 | 76 | 263 | | -33 | 0 | 142 | 265 |
| walk0024 | 728 | 1052 | 72 | 263 | | -34 | 0 | 142 | 265 |
| walk0025 | 826 | 528 | 72 | 261 | | -33 | 0 | 142 | 265 |
| walk0026 | 826 | 256 | 72 | 261 | | -33 | 0 | 142 | 265 |
| walk0027 | 832 | 2 | 72 | 261 | | -33 | 0 | 142 | 265 |
| walk0028 | 256 | 261 | 74 | 259 | | -31 | 0 | 142 | 265 |
| walk0029 | 178 | 2 | 78 | 257 | | -27 | -2 | 142 | 265 |
| walk0030 | 2 | 2 | 88 | 257 | | -26 | -2 | 142 | 265 |
| handsup0001 | 794 | 1584 | 76 | 263 | | -34 | -2 | 142 | 265 |
| handsup0002 | 2 | 1311 | 122 | 263 | | -20 | -2 | 142 | 265 |
| handsup0003 | 204 | 1313 | 130 | 263 | | -7 | -2 | 142 | 265 |
| handsup0004 | 770 | 1319 | 110 | 263 | | -27 | -2 | 142 | 265 |
| handsup0005 | 662 | 1317 | 106 | 263 | | -24 | -2 | 142 | 265 |
| handsup0006 | 556 | 1317 | 104 | 263 | | -25 | -2 | 142 | 265 |
| handsup0007 | 448 | 1317 | 106 | 263 | | -24 | -2 | 142 | 265 |
| handsup0008 | 336 | 1313 | 110 | 263 | | -27 | -2 | 142 | 265 |
| handsup0009 | 336 | 1313 | 110 | 263 | | -27 | -2 | 142 | 265 |
| handsup0010 | 2 | 1576 | 102 | 263 | | -23 | -2 | 142 | 265 |
| handsup0011 | 802 | 1054 | 102 | 263 | | -16 | -2 | 142 | 265 |
| handsup0012 | 802 | 1054 | 102 | 263 | | -16 | -2 | 142 | 265 |
| handsup0013 | 106 | 1576 | 96 | 263 | | -21 | -2 | 142 | 265 |
| Notes :  Karakter dasar untuk pembangkitan | | | | | Key Color :  G:\My Thesis\Application\Game\Assets\Character\Base Character\Pallete.png | | | | |