Graphics Description

*Data Structures and Functions*

*Project TrAn-SiSS*

**Structures:**

1. **Coordinates (coordiante)**
   * **Description :** Data type containing the coordinates of the object on the output graphics screen.
   * **Data type Name :** struct coordinate
   * **Alternate Name :** coordinate\_t

|  |  |  |  |
| --- | --- | --- | --- |
| Member Variable | Datatype | Type Description | Description |
| x | int | integer numeral | x-coordinate of the object. |
| y | int | integer numeral | y-coordinate of the object. |
| rotation | float | decimal(floating point value) | Angle of rotation of the object. |

1. **Style(style)**
   * **Description :** The data type contains the styling option for the object in graphics.
   * **Data type Name :** struct style
   * **Alternate Name :** style\_t

|  |  |  |  |
| --- | --- | --- | --- |
| Member Variable | Datatype | Type Description | Description |
| fill\_color | int | integer numeral | Contains the color code of the graph. (Refer to the graphics.h documentation for the available Color Codes.) |
| border\_style | int | integer numeral | Contains the border style code of the graph. (Refer to the graphics.h documentation for the available Border Style Codes.) |
| border\_color | int | integer numeral | Contains the color code of the graph. (Refer to the graphics.h documentation for the available Color Codes.) |
| width | int | integer numeral | The width of a lane/street or the radius of a circle. |

**Functions :**

This file contains all the function descriptions for the graphics related functions of the project.

1. **Initialize Coordinate**
2. **Initialize Style**
3. **Set Coordinates**
4. **Set Style**
5. **Create Lane**
6. **Create Street**
7. **Create**
8. **Initialize Coordinate**
   * **Syntax :**

**void initialize\_coordinate(struct coordinate \* coord)**

* + **Description :** 
    - Initialize the member variables of the object of struct coordinate.
  + **Return type : void**

1. **Initialize Style**
   * **Syntax :**

**void initialize\_set(struct style \* st)**

* + **Description :** 
    - Initialize the member variables of the object of struct style.
  + **Return type : void**

1. **Set Coordinate**
   * **Syntax :**

**void set\_coordiante( int x , int y , int rotation )**

* + **Description :** 
    - Set the x coordinate, y coordinates and rotation of the object.
  + **Parameters :**

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| --- | --- | --- |
| **Name** | **Data type** | **Description** |
| x | int | x-coordinate to be set. |
| y | int | y-coordinate to be set. |
| rotation | float | rotation to be set. |

* + **Return type :** void

1. **Set Style**
   * **Syntax :**

**void set\_style( int fill-color, int , int rotation )**

* + **Description :** 
    - Set the x coordinate, y coordinates and rotation of the object.
  + **Parameters :**

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| --- | --- | --- |
| **Name** | **Data type** | **Description** |
| fill\_color | int | Fill color |
| b\_style | int | Border Style |
| b\_color | int | Border Color |
| width | int | Width/Radius |

* + **Return type :** void

1. **Create Lane**
   * **Syntax :**

**int create\_road( coord c1 , coord c2 , int width )**

* + **Description :** 
    - Makes road (rectangle) between the given two points of the specified width.
    - It would *return* the SUCCESS (1) or FAILURE (0) of making the road.
  + **Parameters :**

|  |  |  |
| --- | --- | --- |
| **Name** | **Data type** | **Description** |
| start | coord | Coordinates of starting point |
| end | coord | Coordinates of end point |
| width | Int | Width of the road |

* + **Return type :** Boolean (integer – 0/1)

1. **Create Street**
   * **Syntax :**

**int create\_street(coord c1,coord c2)**

* + **Description :** 
    - Makes road (rectangle) between the given two points of the specified width.
    - It would *return* the SUCCESS (1) or FAILURE (0) of making the road.
  + **Parameters :**

|  |  |  |
| --- | --- | --- |
| **Name** | **Data type** | **Description** |
| start | coord | Coordinates of starting point |
| end | coord | Coordinates of end point |
| width | Int | Width of the road |

* + **Return type :** Boolean (integer – 0/1)

1. **Create Traffic**