

SUBJECT OUTLINE: ASSESSMENT TASKS

INFT2012- APPLICATION PROGRAMMING

ASSIGNMENT 01 PART 2: JOURNAL

GROUP

SHARJEEL SOHAIL & FADZAYI MANYENYA

OVERVIEW

Task is to write a program in C# with which two users can play *Six of one* against each other, or a single user can play against the program. The journal contains the difficulties we encounter, for how long we worked on which aspect, briefly questions that arise and how we solved them, and what lesson we learned from this assignment.

BRIEF:

My group member, Fadzayi Manyenya and I, Sharjeel Sohail, started working on this assignment more than a month before it's due date. We knew it's going to take our (*not-so-precious*) time. Below we discussed what days we worked on which tasks and how long did it take to complete it. Further mentioned is the list of questions we had in our minds, which also kept growing as we went through each task of the assignment, and how we figured the bits out day by day, what lesson we learnt and what our strategy is.

April 15th, 2020

Hours Spent: 2hrs

Today was our first meeting. We went through our assignment specifications and tried to understand. The specification tells itself that it's going to be a lot of work. That's one of the reasons we started early so we don't get panic at the end of the semester. Fadzayi and I had to look up some demos (specially week 02, the dice one) so we can have a bit of an idea where to start from. We called off with the ideas and design just in our heads.

April 20th, 2020

Hours Spent: 3hrs 15mins

So today we decided to agree on some rules and style of the assignment. We agreed to use some informative names of the variables (for e.g. txtBxFamilyName etc.) whenever we start. We gathered some information which is required, such as:

- 1) Don't forget to add regions;
- 2) Commenting (Headers and inline comments);
- 3) Check for constants;
- 4) If the code's getting repeated, try to put them in a method;
- 5) Explain complex functions used.

April 24th, 2020

Hours Spent: 4hrs

We created a model of the forms with the help of Visio to see how it would look like on a pc, and basically to give a better understanding of what we're going to do.

The model looks like this:

The image displays four wireframe forms for a game interface, arranged in a 2x2 grid. Each form is a light gray rectangle with black text labels.

- Form 1** (top-left): Contains the text "Welcome Page", "Description about the game", "Instructions:", "1 on 1", and "Play with Computer".
- Form 3** (top-right): Contains the text "Player 1:", "Set Your Goal:", and "No. Of Games:". The label "Form 3" is written in blue above the form.
- Form 2** (bottom-left): Contains the text "Player 1:", "Player 2:", "Set Your Goal:", and "No. Of Games:". The label "Form 2" is written in blue above the form.
- Form 4** (bottom-right): Contains the text "Player 1 Sharjeel", "Goal 50", "Player 2 Fadzayi", "Dice1 Dice2 Dice3 Dice4 Dice5 Dice6", and "Roll All Six". The label "Form 4" is written in blue above the form.

We have four forms and that's how they all be linked with each other. We have only set some labels today and we will probably make them a bit fancy at the end, but that's all for now.

April 28th, 2020

Hours Spent: 2hrs 25mins

The initial model we had in our last meeting, we created them in Visual Studio. Also, we worked on adding buttons and textboxes where required to get a clear picture of the forms. We gave them appropriate names so that we don't have to worry about them later. We decided to put a combo box for the number of games, but then we didn't know how to work on combo boxes so we replaced it with the text box. We gave the forms a good background color (Pink; This was Sharjeel's Idea haha) and with this, we called off.

May 1st, 2020

Hours Spent: 3hrs 10mins

Today, we worked on how to actually play the game using pen and paper and 6 physical dice just to get a feel of how the game would work / played. We also downloaded "Ludo Star" game; it's a good dice game which gave us a bit of understanding of what to expect with the game. Fadzayi made a question in the lecture if all the dice needs to be rolled at once or should we add separate button under each dice. She also gave us an idea that we can have 6 separate buttons as well as one main button which rolls all the six dice. But of course, at this point, we were just assuming and not really coding.

May 08th, 2020

Hours Spent: 5hrs

We met after a week as Sharjeel was busy with his work. Today, we decided to get our hands on the code. Fadzayi looked up in the lecture slides on how to link the forms. Meanwhile Sharjeel was working on the overall look of the forms so that the user's gaze doesn't have to leap about all over the place. Sharjeel tried to keep it as simple as he could with decent colors and text sizing. For the goal, he decided to put a Track bar so that the user doesn't have to type in a number and set the score between 0 to 100 so the user can't type the goal above 100 which would make the game too long and hard for the player to win.

Q- Will the program simply display the number? Or display the face for number?

The main part we worked on today was creating the die faces. We were confused if we should add the dice images or actually create the dice dots like we did in week 2's demo. We decided to go with creating the die faces as we had a bit of an idea with the demo we did. Fadzayi opened up the demos and some few lecture slides and with the help of it, we managed to create die faces inside the button event handler. Sharjeel wants to put this in a function but we're calling off for now and probably work on this the next time we meet.

May 12th, 2020

Hours Spent: 3hrs 15mins

Ah, what a weekend it was. Anyway, back to work. In the lecture today, Kellie said that we can submit a draft of the assignment so that she can give us some reviews or comments about how we are going or if we are going in the right direction or not. So, we decided to get the 50 % work done this week and make sure we have at least half of the program working fine so that we can get some comments from Kellie. We added a test button so that we can test in real time whatever we were coding.

Q- Is it better to add little animation when displaying the dice to give the impression of the dice rolling?

Fadzayi started working on animation. The code given in the specs and with the help of some demos & lab work, she came up with the code of it, but it wasn't properly working so we added comments on it just so we can ask Kellie for help on this next week.

May 17th, 2020

Hours Spent: 6hrs

We did a fair bit of work today, Sharjeel started working on the coding bit and Fadzayi looked into the designing part. The main thing we worked on was the question Fadzayi raised couple of weeks ago was;

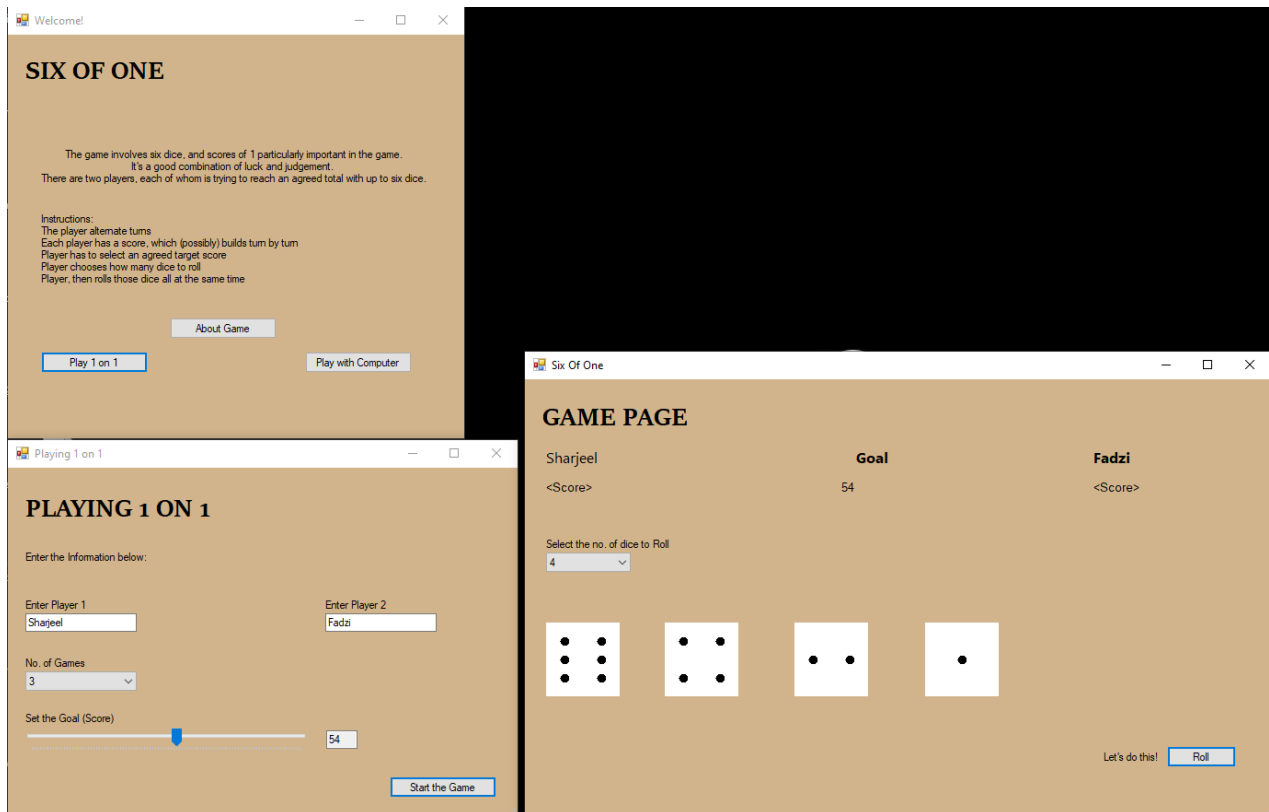
Q - Should we have just one button to roll? Or should we have separate buttons for each dice?

Well, we both decided to go with one button to roll, which makes it more professional easy work. Sharjeel gave a recommendation to put a combo box, so that the user can only select

dice from 1 to 6 and so we don't have to display message box if the user selects more than 6. And so, we did. We jumped on the lectures where the combo box was explained, that helped us to get going. Next thing we worked on how to display random numbers when rolled, to be honest, it took quite of thinking how to do this bit, but once we figured it out in our minds, coding was not a big thing at all. Ah, Sharjeel loves problem-solving scenarios.

By this time, we thought our draft was pretty much ready to submit and we were excited to get some feedback on it. And so, we did. We called off our meeting by submitting the draft to Kellie.

That's how our forms look like at the moment:



Note that the we have about game button and Play with Computer button, they just display the form at the moment. We haven't figured those parts out yet.

May 19th, 2020

Hours Spent: 3hrs 25mins

After the lecture today, we set up a private meeting on zoom with Kellie so that she can give us some comments about the draft. We asked few questions and she gave us some recommendations, which are just documented below:

Q1: How do you find our style of coding? Is it well commented?

Q2: Do you think the code has a lot of repetition?

Q3: Can you have a look at our animation function and tell us what we are missing there?

Q4: Any recommendations?

In that 15 minutes of meeting, Kellie replied to all of our questions. She said our code style is pretty good, easy to look and understandable. She said we were missing header comments and few inline comments, if we can do that, the code styling would be perfect. We were rolling and creating the dice in button roll event handler, she suggested if we can make separate functions for them. That would look much nicer than how it is. She also mentioned about adding few labels on the design which tells the user whose turn it is. At this stage, we have four forms in total and for that, she suggested that if we can get rid of few of the forms and try to get it down to 2 form pages, that would be great. We also have graphic variables names just as “dice”. She told us to change them to “graDice” so that the reader can understand what the type of variable it is.

We will try to work on whatever she said, this week.

May 25th, 2020

Hours Spent: 2hrs 10 mins

We didn't spend much time today together working on the assignment. We distributed work what to improve after getting comments on our draft, and we completed them at our own places. We combined the bits of the code and design and put it all together. I must say we have a clear picture and have few things left now. Of course, the main is still yet to come, which is Rules of the games (conditions) and we both are kind of scared of doing that ha-ha.

Q – Should the game randomly choose who plays first? As in whose turn it is first?

It was easy but kind of tricky. We thought about this and tried a couple of things, none of them worked. Fadzayi managed to do it, but when it picking the random player at first, it was also picking random in between the game, and that's not what we wanted. So, we applied some thinking and Sharjeel came up with calling the random choosing as soon as the form appears and then picking the turn by turn later in the code with no random values. That worked.

May 28th, 2020

Hours Spent: 8hrs

We both had work the past couple of days, so we took a break from the assignment and decided to work and rest. We're back on it now. And to be honest, we started to panic a bit because we still had conditions and “Playing against the computer” part left. But guess what? After spending 8 hours straight, we are kind of exhausted but we're also happy that we managed to code conditions. It's almost working expect one of them. Sharjeel was about to give up but thank god he didn't. We stuck on the part where we were comparing two array indexes but we couldn't make it work. But we looked at some lectures and demos and came up with a function which increments every time one (1) is found. And that helped us working out on what the output should be if the condition is true. This bit was easy now, and we managed to do it. Now the only thing that isn't working is condition 6; where if three or more numbers are the same (other than 1s), the score will be doubled.

We both are tired and needs a bit of sleep. But we will be back on this tomorrow.

May 30th, 2020

Hours Spent: 3hrs

Today, Fadzayi started to work on “Play with Computer” part and I (Sharjeel) started to comment the code throughout and change the variable names to meaningful names. We were missing the initials of let’s say if it’s integer, the variable should start with iVarName. So, I fixed that out and put some header comments and inline comments. I’ve also added some regions so that we can hide the parts we don’t want to look at. That made the code look pretty good and nice. When done doing that, I also jumped onto the computer part with Fadzayi and tried to work it out. We’ve made another constructor to call the form when just player 1 name is entered and not second. We also took some of the things in account as mentioned in the specs:

Q – Will the computer does everything so fast that the user doesn’t see it at all? Well, here we understood that we need an animation function to be called to make it slow so that the user can see what is happening.

Q – Does it display Message boxes or does it display in a label? We didn’t use much message boxes, I can’t remember if I have mentioned it or not, but we are displaying the conditions when it’s true in the labels, so that the user won’t have to click okay on the message boxes every time, and doesn’t get distracted with the pop-ups. The whole computer bit is working but not properly. It’s missing few bits and doing some weird things, but we’ll get this.

May 31st, 2020

Hours Spent: 4hrs 30mins

Submission day today, guess who’s excited? Today we worked on some of the last things, like the final touch-ups and “Playing with Computer” part as well. At this point we both understand the code, we know what we did and where we did it. So, we kind of had an idea what to do to make the computer part work. Sharjeel wrote a code inside the button event handler and it finally started working. Fadzayi started to edit the assessment cover sheet while I (Sharjeel) worked on the design bit, we had to move a few things here and there and made sure everything looks nice and clean. We also had a file issue; our solution was not at the right place, luckily, we discussed about this before with Kellie and she sent an email telling us about how we can fix that, Fadzayi looked into it and made it possible. That’s how we managed to complete 100% of the assignment.

Program Strategy:

What does a player need to make sure they win? Of course, a strategy. We have considered and applied a few strategies that helps the player not to lose. Below are some of the questions we were asked and we have their related strategies.

1) **Q** – How close to the goal you are?

In order to win, we have labels for each player that shows how many score each player needs to win; which is the agreed goal less than the current score. Based on this information, player can decide how many dice to roll at once in order to avoid losing the game; not just the chasing the opponent's score but also to avoid all the conditions we have in our game.

2) **Q** – How do you decide how many dice to roll?

We have a combo box, to pick the number of dice a player wants to roll, and a separate roll button which gives them time to think and decide if they want to roll the picked no. of dice. That helps the player to think and analyze how far they are to the goal and to the opponent's score. If they are not so far, player would only pick 1, 2 or 3 no. of dice in order to prevent getting 1s which can make them lose.

3) **Q** – Who won how many games?

Statistics have been displayed down at the bottom of the game, and it's keeping a record of who won how many games. With that, a player can play strategically. Let's say the opponent has already won 1 out of 2 games, and by looking at that statistics, the player would not roll many dice and will try to get as many scores as they could so that they can make the game draw instead of losing.

4) **Q** – How close to the goal score your opponent is?

We have the agreed goal and score labels of each player, which displays the sum of the score as soon as the player gets done with their turn, this tells both the user how far each of them is, to the goal score. This gives them a vision of who's close to winning and who's not.

5) **Q** – How many 1s have been rolled lately?

The labels would pop-up whenever any of the condition/rules of the game goes true, let's say the player got two 1s in their roll turn, the label would pop-up as "That's snake's eye, score back to zero" with this label, the player would know for the next turn how many dice to roll and will act accordingly.